Table of Contents

As filed with the Securities and Exchange Commission on August 21, 2020.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-1

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

BENTLEY SYSTEMS, INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware	**7372**	**95-3936623**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

685 Stockton Drive
Exton, PA 19341
(610) 458-5000
(Address, including zip code and telephone number, including area code, of registrant's principal executive offices)

David R. Shaman
Chief Legal Officer and Corporate Secretary
Bentley Systems, Incorporated
685 Stockton Drive
Exton, PA 19341
(610) 458-5000
(Name, address, including zip code and telephone number, including area code, of agent for service)

Richard A. Fenyes **Jonathan R. Ozner** **Simpson Thacher & Bartlett LLP** **425 Lexington Avenue** **New York, NY 10017** **(212) 455-2000**	**Copies to:** **Gregory S. Bentley** **David J. Hollister** **685 Stockton Drive** **Exton, PA 19341** **(610) 458-5000**	**Richard A. Kline** **Sarah B. Axtell** **Goodwin Procter LLP** **601 Marshall Street** **Redwood City, CA 94063** **(650) 752-3100**

Approximate date of commencement of proposed sale to the public:
As soon as practicable after this registration statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐	Accelerated filer ☐	Non-accelerated filer ☒	Smaller reporting company ☐ Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	**Proposed Maximum Aggregate Offering Price[(1)]**	**Amount of Registration Fee**
Class B Common Stock, $0.01 par value per share	$100,000,000	$12,980

(1) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(o) of the Securities Act of 1933, as amended, and includes shares of our Class B common stock that the underwriters have an option to purchase to cover over-allotments, if any.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

Table of Contents

Subject to Completion, dated , 2020

Shares

Class B Common Stock

This is an initial public offering of shares of Class B common stock of Bentley Systems, Incorporated.

The selling stockholders identified in this prospectus are selling Class B shares in this offering. We will not be selling any shares in this offering and will not receive any of the proceeds from the sale of the Class B shares being sold by the selling stockholders.

We will have two classes of authorized common stock: Class A common stock and Class B common stock. Upon completion of this offering, the rights of the holders of our Class A common stock and our Class B common stock will be identical, except with respect to voting and conversion rights. Each share of our Class B common stock will be entitled to one vote per share. Each share of our Class A common stock will be entitled to 29 votes per share and is convertible at any time into one share of our Class B common stock. Our Class A common stock will automatically convert into our Class B common stock upon certain transfers. The beneficial owners of our Class A common stock consist primarily of the Bentleys (as defined herein). As of June 30, 2020, after giving effect to the Charter Amendments (as defined herein) and following the completion of this offering, the holders of our Class A common stock will hold approximately % of the voting power of our outstanding capital stock and the Bentleys will hold or have the ability to control approximately % of the voting power of our outstanding capital stock. This ownership means that, for the foreseeable future, holders of our Class B common stock will not have a meaningful voice in our corporate affairs and that the control of our company will be concentrated with the Bentleys. For additional information, see the section titled "Risk Factors—Risks Related to the Offering."

Prior to this offering, there has been no public market for the Class B common stock. It is currently estimated that the initial public offering price per share will be between $ and $. We have applied to list our Class B common stock on The Nasdaq Global Select Market under the symbol "BSY."

See "Risk Factors" on page 21 to read about factors you should consider before buying shares of our Class B common stock.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

	Per Share	Total
Initial public offering price	$	$
Underwriting discount(1)	$	$
Proceeds to the selling stockholders(2)	$	$

(1) See the section titled "Underwriting" for additional information regarding compensation payable to the underwriters.

(2) We have agreed to pay certain expenses in connection with this offering on behalf of the selling stockholders, including underwriting discounts and commissions. See the section titled "Underwriting."

To the extent that the underwriters sell more than shares of Class B common stock, the underwriters have the option to purchase up to an additional shares from the selling stockholders at the initial public offering price less the underwriting discount.

The underwriters expect to deliver the shares against payment in New York, New York on , 2020.

Goldman Sachs & Co. LLC **BofA Securities**

RBC Capital Markets

Baird **KeyBanc Capital Markets** **Mizuho Securities**

Prospectus dated , 2020.

Table of Contents

Table of Contents

Going Digital:
SPECIAL RECOGNITION AWARD WINNERS

Advancing Construction Industrialization through Digital Twins

Digital Application in Heilongjiang Construction Industry Modernization Demonstration Park

Heilongjiang Construction High-Tech Capital Group Co., Ltd.
Harbin City, Heilongjiang, China

Heilongjiang Construction High-Tech Capital Group was part of a 1.26-million-square-meter modernization demonstration park, which is aimed at transforming traditional construction into an environmentally, green economic industry. The CNY 3.6 billion project required multiple, dispersed participants to collaborate on a tight planning, design, and construction timeline.

With Bentley applications, the project team developed a digital twin and connected data environment that:

- shortened design time by five days and cost evaluation time by 80%;
- helped generate an accurate 3D reality model that improved earthworks measurements and calculations by two times;
- saved CNY 4.5 million in construction costs.

Project Playbook: *ContextCapture, LumenRT, MicroStation, Navigator, OpenBuildings Designer, OpenRoads, ProjectWise, ProStructures, STAAD*

Advancing Digital Workflows through Digital Twins

High Speed Two Sectors N1 and N2 Main Works Civil Contract

Mott MacDonald/SYSTRA Designers working with Balfour Beatty/VINCI Joint Venture
Birmingham, Country North Sectors, United Kingdom

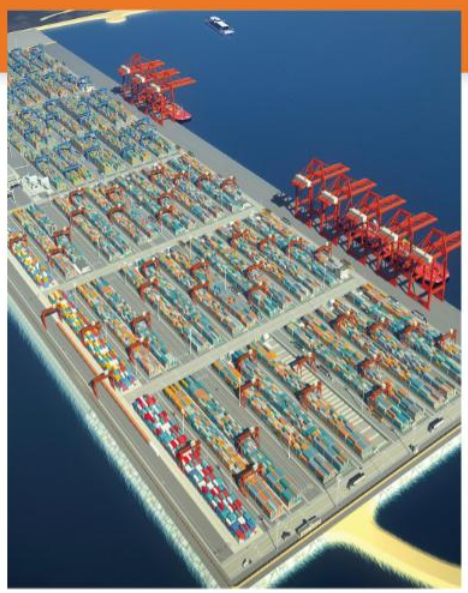
Working on behalf of Balfour Beatty VINCI Joint Venture, Mott MacDonald and SYSTRA were tasked with developing the Stage 1 design scheme for a 70-kilometer stretch of High Speed Two Limited's railway route from London to Birmingham (HS2 Phase One). The stretch includes 320 primary assets and 550 sub-assets.

With Bentley applications, the project team used model-based delivery that:

- helped produce more than 4,000 models as the source of all information;
- reduced program time and cost while improving collaboration and engagement;
- achieved behavioral changes and skills development among project stakeholders.

Project Playbook: *OpenBuildings Designer, gINT, iModelHub, MicroStation, Navigator, OpenBridge, OpenRail, OpenRoads, Power Rail Track, ProjectWise, SYNCHRO*

Table of Contents



Advancing Economic Infrastructure through Digital Twins

SAPT Automatic Container Yard and Housing Project in Pakistan

CCCC Water Transportation Consultants (WTC) Co., Ltd.
Karachi, Sindh, Pakistan

CCCC Water Transportation Consultants was tasked with constructing engineering assets for an estimated USD 90 million port that includes automated container yards, auxiliary buildings, railways, and other supporting facilities. The project needed to meet strict construction quality requirements and a tight timeframe while avoiding pipe network and civil foundation collisions.

With Bentley applications, the project team created and applied a BIM model that:

- combined all asset models into one location;
- improved collaboration by 35% and modeling efficiency by 30%;
- detected 300 collision points and reduced costs by 5%.

Project Playbook: *LumenRT, MicroStation, Navigator, OpenBuildings Modeler, OpenRail, OpenRoads, ProjectWise, ProStructures, STAAD*

Advancing Industrial Sustainability through Digital Twins

Henan Jiyuan Iron & Steel, 80MW High-Temperature Ultrahigh-Pressure Gas Power Generation Energy-Saving Renovation Project

MCC Capital Engineering & Research Incorporation Ltd.
Jiyuan, Henan, China

MCC Engineering and Research was tasked with coordinating various engineering disciplines for a new, 80-megawatt, high temperature, ultra-high-pressure gas power generation unit. The owner-operator of an industrial waste gas recycling and reuse facility wanted the old pressure generator to be demolished as well.

With Bentley applications, the project team developed an integrated 3D model that:

- shortened design time to four months and improved design efficiency by five times;
- reduced the construction period by five months;
- lightened the load of North China's power grid while reducing environmental impact.

Project Playbook: *AutoPIPE, Bentley Raceway and Cable Management, Bentley Substation, LumenRT, MicroStation, Navigator, OpenBuildings Designer, OpenPlant, ProjectWise, ProSteel, ProStructures, SYNCHRO*

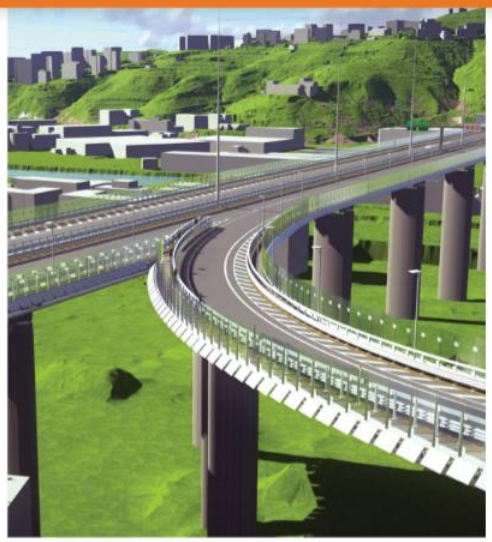
Table of Contents

Going Digital:
SPECIAL RECOGNITION AWARD WINNERS

Advancing Infrastructure Resilience through Digital Twins

The New Polcevera Viaduct

Italferr S.p.A.
Genoa, Liguria, Italy



After a bridge collapse in northern Italy, Italferr S.p.A. was tasked with designing a new EUR 202 million viaduct that would be a pivotal transportation point. The project needed to measure over 1,000 meters in length and consist of 19 steel-concrete spans.

With Bentley applications, the project team implemented a BIM model and connected data environment that:

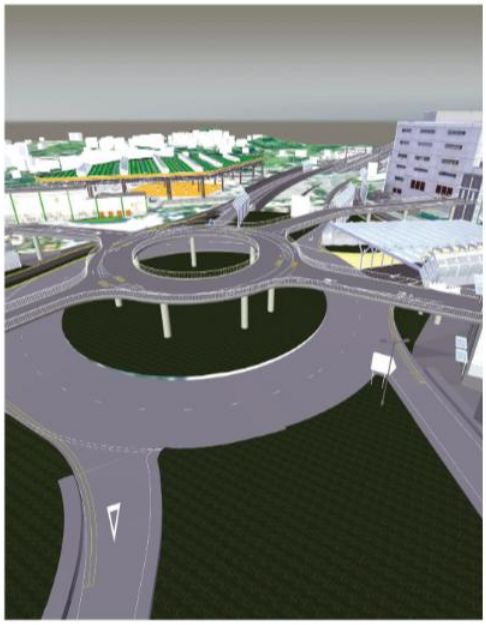
- created digital models of the terrain, road, civil works, and systems;
- reduced design costs and improved collaboration for faster decision-making, more accurate calculations, and better management of revisions;
- kept the project on schedule for a June 2020 completion.

Project Playbook: *Descartes, gINT, iModel.js, LumenRT, MicroStation, Navigator, OpenBuildings Designer, OpenRoads, ProjectWise, SYNCHRO*

Advancing Urban Planning through Digital Twins

The Digital Design for the Establishment of the Kwu Tung North and Fanling North, New Development Area

Civil Engineering and Development Department,
Hong Kong SAR Government and AECOM
Hong Kong



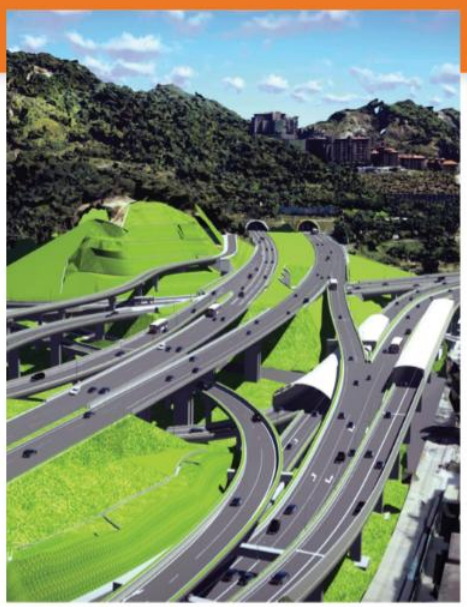
AECOM Asia Co. was tasked with helping create new development areas to address long-term housing demands in Hong Kong. The project will cover 4.5 square kilometers and will accommodate 119,600 people, becoming one of the most densely populated areas in Hong Kong.

With ContextCapture, OpenBuildings Designer, and LumenRT, the project team used building information modeling to create 3D spatial models that:

- improved model analysis and communication with stakeholders;
- allowed for 10 significant and 50 minor design changes directly in the model.

Project Playbook: *ContextCapture, LumenRT, OpenBuildings Designer, ProjectWise*

Table of Contents



Digital Cities Award for Comprehensive Roadway Digital Twins

Yangang East Interchange Project

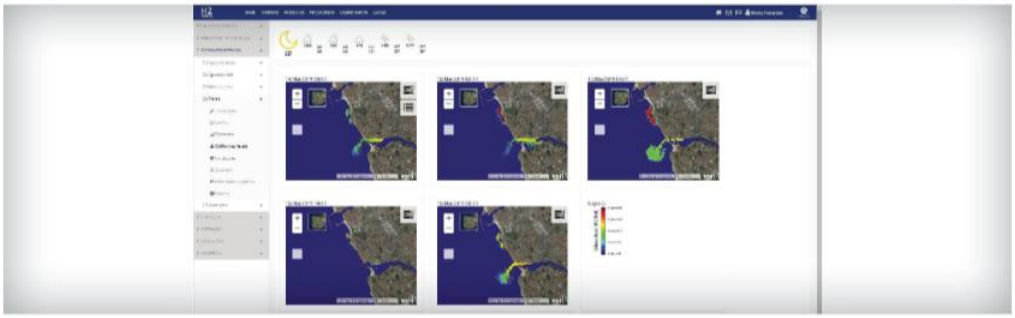
Shenzhen Expressway Engineering Consultants Co., Ltd
Shenzhen, Guangdong, China

Shenzhen Expressway Engineering Consultants was tasked with designing the convergence of four high-speed roadways of the Yangang network. The complex network runs 10.5 kilometers in length and includes 10 new ramps, 16 bridges, and eight tunnels and underpasses.

With Bentley applications, the project team created a digital twin that:

- analyzed several traffic relief and design schemes for an optimal design and construction plan;
- facilitated real-time collaboration and data access, identifying and proactively resolving over 60% of site problems to avoid construction delays;
- simulated virtual on-site construction to verify workflows and meet the 35-month construction schedule.

Project Playbook: *ContextCapture, gINT, iModelHub, LumenRT, MicroStation, Navigator, OpenBridge, OpenRoads, Pointools, ProjectWise, ProStructures, SYNCHRO*



Digital Cities Award for Comprehensive Water Digital Twins

H2PORTO Technological Platform for the Integrated Management of Porto's Urban Water Cycle

Águas do Porto, EM
Porto, Portugal

Águas do Porto delivers and collects an average of 50,000 cubic meters of water, serving almost 157,000 customers in Porto, Portugal's second largest city. Faced with integrating big data and models from numerous sources into an open, connected data environment, the organization needed integrated management of the urban water cycle.

With OpenFlows, the project team developed the H2PORTO technological platform that:

- incorporated over 22 different sources to create a digital twin of the city's water systems;
- facilitated seamless integration of information for proactive network maintenance and management;
- improved pipe burst repairs by 8% and decreased water supply interruptions and malfunctions by an estimated 20%.

Project Playbook: *OpenFlows, OpenFlows WaterGEMS*

Table of Contents

Going Digital:
AWARD WINNERS

Advancements in 4D Construction Modeling

Chase Center and Warriors Mixed-use Office and Retail Development

Mortenson | Clark, a Joint Venture
San Francisco, California, United States

The Mortenson Clark joint venture was tasked with defining the schedule and workflow for the USD 1.2 billion Chase Center project, the new home of the Golden State Warriors and an entertainment complex for over 200 annual events. The project features two 11-story office buildings as part of five structures supported by a shared podium.

With SYNCRHO, the project team created a 4D construction model that:

- influenced schedule progression and assembly logic;
- created a model-driven, iterative simulation review for site logistics plans and critical path elements;
- evaluated construction sequencing and associated scopes of work for on-time delivery.

Project Playbook: *SYNCHRO*

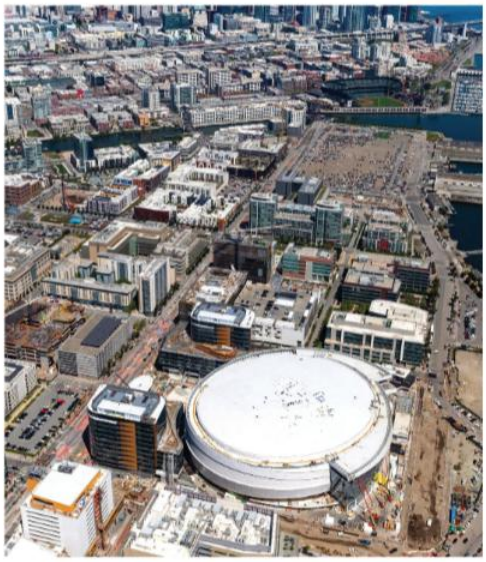


Table of Contents

Advancements in Bridges

Design and Build Harbour Road 2 Project

PT. Wijaya Karya (Persero) Tbk.
North Jakarta, Jakarta, Indonesia

PT. Wijaya Karya was tasked with avoiding aboveground and belowground structures of the USD 530 million Harbor Road 2 bridge, while working around two other projects occurring simultaneously. The 3.98-kilometer design and build project is the first elevated toll road project to use a double-decker construction.

With PLAXIS, OpenBridge Modeler, and OpenRoads, the project team:

- limited waste and decreased movement of heavy equipment, reducing carbon production;
- increased return on investment by 23%, cutting project time by three years;
- helped create a bridge that will accommodate 63,500 vehicles per day.

Project Playbook: *ContextCapture, gINT, LEAP, LumenRT, Navigator, OpenBridge, OpenRoads, PLAXIS, ProStructures, RM Bridge*

Advancements in Buildings and Campuses

Detailed Design, Tendering and Project Management Services for Establishment of 12 IT/Hi-Tech Parks in Bangladesh

Voyants Solutions Private Limited
Bangladesh

Voyants Solutions was responsible for developing 12 high-tech IT parks in eight administrative regions of Bangladesh. The smart green campuses needed to be iconic and unique to facilitate economic and social growth while being completed in a short timeframe.

Using STAAD and OpenBuildings Designer, the project team:

- proposed a water lily design concept with optimized design coordination;
- submitted the schematic design 15 days early, saving 50% in design time, with 60% less resources, achieving an ROI of five times the initial investment;
- developed a 3D model that will further facilitate construction scheduling and monitoring.

Project Playbook: *LumenRT, OpenBuildings Designer, STAAD*

Table of Contents

Going Digital:
AWARD WINNERS

Advancements in Communications and Utilities

Technology Application in Miluo Western 220kV Substation Project

POWERCHINA Hubei Electric Engineering Co., Ltd.
Miluo City, Hunan, China

POWERCHINA Hubei Electric Engineering assisted with the Miluo Western 220-kilovolt substation, the State Grid's first 3D pilot project employing 3D design standards during construction. Enhancing power reliability to 150,000 users, the CNY 113.2 million project needed to deliver a design within 10 months.

With ContextCapture, ProjectWise, and SYNCHRO, the project team provided a digital twin that:

- reduced design and review time by 65 days and land occupation by 0.94 hectares;
- reduced construction time by 30 days;
- saved CNY 1.5 million and delivered the project early.

Project Playbook: *Bentley Raceway and Cable Management, Bentley Substation, ContextCapture, LumenRT, MicroStation, Navigator, OpenBridge, OpenBuildings Designer, OpenPlant, ProjectWise, Promis.e, ProSteel, ProStructures, STAAD, SYNCHRO*

Advancements in Digital Cities

Application of Digitalization in Jiujiang Smart Water Management Platform

Shanghai Investigation, Design & Research Institute Co., Ltd;
Yangtze Ecology and Environment Co., Ltd.
Jiujiang, Jiangxi, China

The Changjiang Ecological Environmental Protection Group and Shanghai Investigation, Design & Research Institute are building a CNY 7.7 billion smart water management pilot platform. The project includes a sewage plant, supporting network, and water ecological restoration.

With Bentley applications, the project team created a simulation and modeling platform that:

- produced a 3D reality model covering 220 square kilometers;
- reduced labor by 80%;
- cut down cost by 60%, saving about CNY 4 million.

Project Playbook: *ContextCapture, Descartes, iModelHub, LumenRT, Navigator, OpenBuildings Designer, OpenPlant, OpenRoads, ProjectWise*

Table of Contents

Advancements in Geotechnical Engineering

Tanjong Pagar Mixed Development

Arup Singapore Pte. Ltd.
Singapore

Arup Singapore was tasked with developing the Guoco Tower, a 64-story, mixed-use development project. With an 18-meter-deep, three-level basement connected to the existing underground Mass Rapid Transit (MRT) railway station, the project needed to meet specifications impacting the MRT and surrounding city structures.

With PLAXIS and gINT, the project team developed a digital foundation design that:

- reduced the number of iterative analysis procedures needed to predict long-term structure settlement;
- produced a geotechnical interpretive report within one week of completing the ground investigation works;
- facilitated a timely, cost-effective foundation and earth retaining structural scheme that simplified and accelerated construction.

Project Playbook: *gINT, MicroStation, PLAXIS*

Advancements in Manufacturing

Sulfuric Acid Plant Project in the DRC

Hatch
Katanga, Democratic Republic of the Congo

Hatch was retained for a new, USD 245 million sulfuric acid manufacturing plant in the Democratic Republic of the Congo, including a 1,400 ton-per-day manufacturing facility and a 20-megawatt electrical waste heat system. The project needed to safely handle the high environmental risks of hauling acid to this remote area.

With STAAD, OpenPlant, and ProjectWise, the project team created a digital twin that:

- saved 10% to 15% in purchasing costs;
- streamlined digital workflows to cut six weeks from the delivery schedule;
- reduced production ramp-up time from six months to one week.

Project Playbook: *LumenRT, MicroStation, Navigator, OpenBuildings Designer, OpenPlant, ProjectWise, STAAD*

Table of Contents

Going Digital: AWARD WINNERS

Advancements in Mining and Offshore Engineering

China Three Gorges New Energy Dalian Zhuanghe III (300MW) Offshore Wind Farm Project

Shanghai Investigation, Design & Research Institute Co., Ltd.
Dalian, Liaoning, China

Shanghai Investigation, Design & Research Institute is working on a CNY 5.14 million offshore wind farm project with a total installed capacity of 300 megawatts. Set to be the first offshore wind power project in northwest China seas, the project needed multidiscipline communication and ice-resistance.

With Bentley applications, the project team developed a design and survey that:

- saved 230,000 tons of standard coal annually;
- reduced the emission of sulfur dioxide by 6,000 tons per year and carbon dioxide by 637,000 tons per year;
- provided seamless storage and access of data information for all participants.

Project Playbook: *MicroStation, Navigator, OpenBuildings Designer, OpenPlant, ProjectWise, ProSteel, SACS*

Advancements in Power Generation

Hanjiang Yakou Shipping Hub Engineering Project

Hunan Hydro & Power Design Institute
Yicheng City, Hubei, China

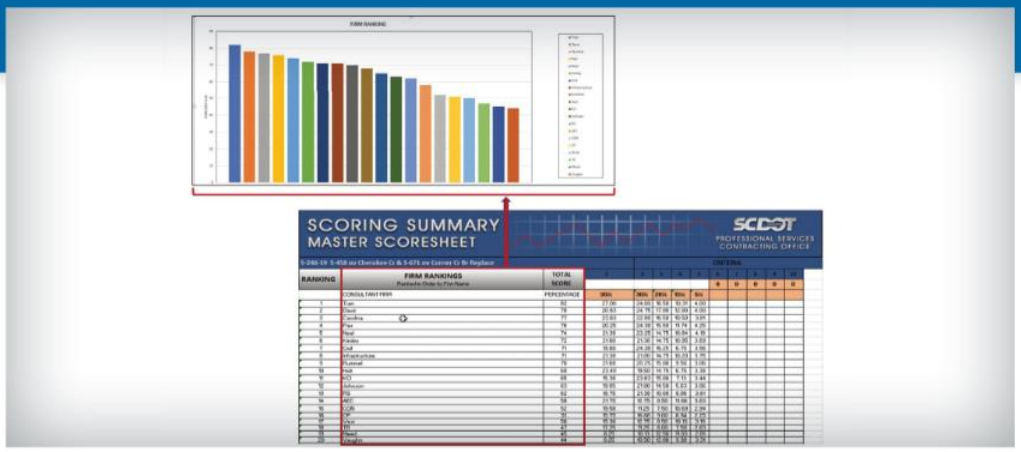
Hunan Hydro & Power Design Institute was tasked with developing the 75-megawatt capacity, CNY 3.35 billion Hanjiang Yakou Shipping Hub project. Alleviating an electricity shortage and achieving an annual navigation grade benefit of CNY 287 million, the project needed to accommodate the compact equipment space and 49-month construction period.

With ProjectWise and OpenBuildings Designer, the project team created a 3D information model that:

- improved design efficiency by 30% and accuracy by 17%;
- completed design work within 45 days and reduced on-site change orders by 80%;
- optimized workflow processes to realize electricity generation three months ahead of schedule.

Project Playbook: *Bentley Raceway and Cable Management, LumenRT, MicroStation, Navigator, OpenBuildings Designer, OpenPlant, OpenRoads, ProjectWise, ProStructures*

Table of Contents



Advancements in Project Delivery

Seamless Information Sharing and Integration Across Multiple Platforms Using ProjectWise

South Carolina Department of Transportation
Columbia, South Carolina, United States

The South Carolina Department of Transportation (SCDOT) currently manages 6,341 projects and 1,823 contracts through all phases of the project lifecycle. The organization needed to integrate disparate data and document applications so that it could support and manage common business processes, data, and document sharing across systems.

With ProjectWise, the project team created a digital twin of all sources of information that:

- achieved workflow efficiencies, increased productivity, and improved accuracy;
- streamlined consultant selection and scoring, enabling more contracts to be processed;
- saved time searching for information stored in multiple applications and reduced costs associated with maintaining multiple applications.

Project Playbook: *ProjectWise*

Advancements in Rail and Transit

AV/AC in Southern Italy: Napoli-Bari Route

Italferr S.p.A.
Napoli-Bari, Campania-Puglia, Italy

Italferr was tasked with designing the EUR 6.2 billion Napoli-Bari route, which will integrate rail infrastructure in southeast Italy, shortening travel time by several hours. This project covers a 60-kilometer stretch from Apice to Bovino, where five mixed steel-concrete viaducts manage the transitions between tunnels and open-air construction.

With ProjectWise and OpenBuildings Designer, the project team implemented a BIM methodology that:

- facilitated data and information exchange among various parties;
- optimized and automated manual processes with parametric modeling;
- modeled technical project components to explore alternative scenarios, improve design quality and accuracy, and reduce costs.

Project Playbook: *ContextCapture, Descartes, gINT, iModel.js, LumenRT, MicroStation, Navigator, OpenBuildings Designer, OpenRail Designer, OpenRoads, ProjectWise, SYNCHRO*

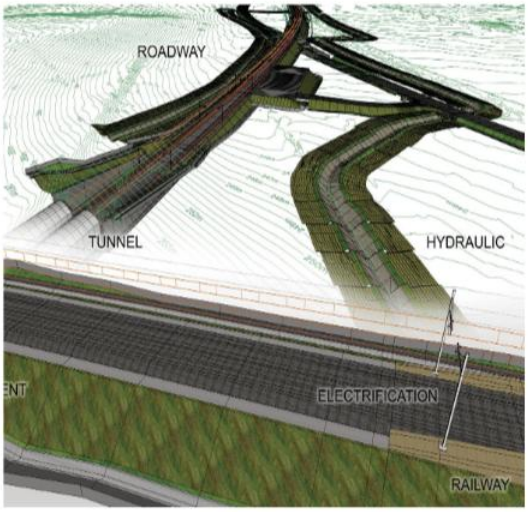


Table of Contents

Going Digital:
AWARD WINNERS

Advancements in Reality Modeling

Drone Surveying for BIM and GIS Data Capture – Malaysian Metro Megaproject

MMC Gamuda KVMRT (T) Sdn. Bhd.
Kuala Lumpur, Malaysia

MMC Gamuda KVMRT was tasked with optimizing project design and constructability for the USD 7.5 billion Sungai-Buloh-Serdang-Putrajaya (SSP) Line, which serves approximately 2 million people. As Malaysia's first metro megaproject, it includes constructing 13.5-kilometer twin bored tunnels and 17 individual construction sites.

With ContextCapture and ProjectWise, the project team developed digital workflows that:

- delivered accurate 3D reality meshes of the site with high-quality images and infinite amounts of data;
- provided the interoperability to enhance understanding of existing site conditions;
- saved 1,000 resource hours for surveyors, engineers, and project managers.

Project Playbook: *AssetWise, ComplyPro, ContextCapture, Navigator, OpenRail, ProjectWise*

Advancements in Road and Rail Asset Performance

Pan Borneo Highway

Lebuhraya Borneo Utara Sdn. Bhd.
Sarawak, Malaysia

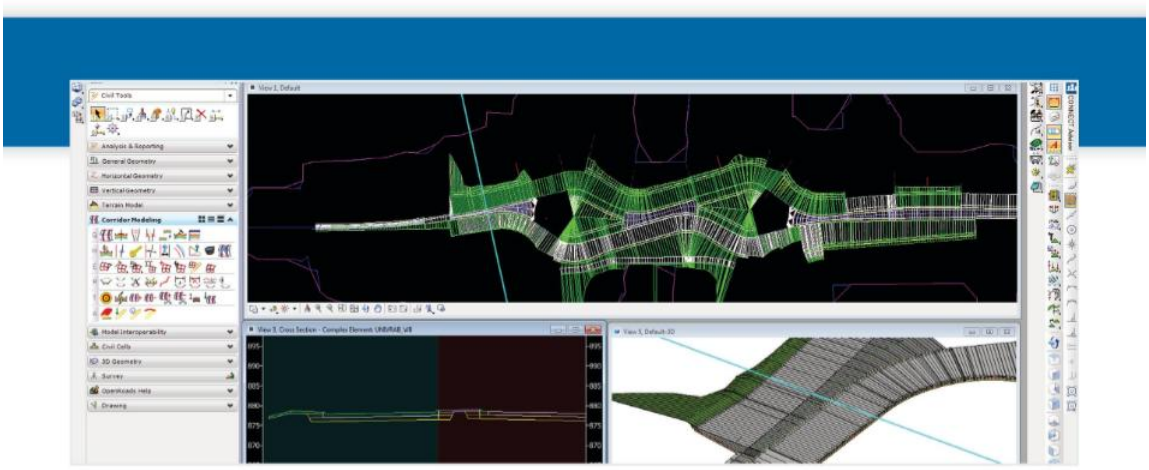
Lebuhraya Borneo Utara was responsible for managing 32.77 kilometers of Malaysia's Pan Borneo Highway, a 1,060-kilometer, four-lane dual carriageway running through a complex location. The project serves as a benchmark for creating a complete asset management system for highways.

Using ProjectWise and AssetWise, the project team developed a connected data environment that:

- facilitated seamless integration of construction data for asset performance and reliability strategies;
- provided real-time reliable information for operations, maintenance, and engineering;
- mitigated risk, increased operational efficiency, improved decision-making, and ensured regulatory compliance.

Project Playbook: *AssetWise, ProjectWise*

Table of Contents



Advancements in Roads and Highways

Foth Transforms, Connects, & Revitalizes Cedar Falls, Iowa Corridor

Foth Infrastructure & Environment, LLC
Cedar Falls, Iowa, United States

Foth was tasked with improving roadway and traffic conditions and providing non-vehicular access along University Avenue, a 60-year-old roadway serving over 20,000 vehicles per day. The USD 38.9 million revitalization required overcoming various challenges, compounded by aggressive schedules and intense public involvement.

Using Bentley applications, the project team developed a digital design model that:

- simplified storing, managing, and sharing over 130 gigabytes of data;
- identified and remediated design issues in hours rather than weeks;
- reduced the design phase by 50% with construction beginning a year and a half ahead of schedule.

Project Playbook: *Descartes, gINT, Haestad, iModel.js, LEAP, LumenRT, MicroStation, OpenFlow SewerGEMS, OpenFlow WaterGEMS, OpenRoads, ProjectWise, RAM, STAAD*

Advancements in Structural Engineering

WSP Delivers Optimized Design for Complex Basement Under Iconic Admiralty Arch

WSP
London, United Kingdom

WSP was tasked with providing structural engineering for two new basements on either side of the Admiralty Arch as part of the new 96-room Waldorf Astoria hotel. The GBP 20 million basements are below an existing road and above two London Underground tunnels.

With PLAXIS and RAM, the project team completed a structural design that:

- included models for each construction stage for a reliable structural solution;
- addressed the challenge of acoustically isolating the basements by designing a box-in-box system;
- saved 25% of the structural design time, allowing WSP to complete the design phase one month ahead of schedule.

Project Playbook: *PLAXIS, RAM*

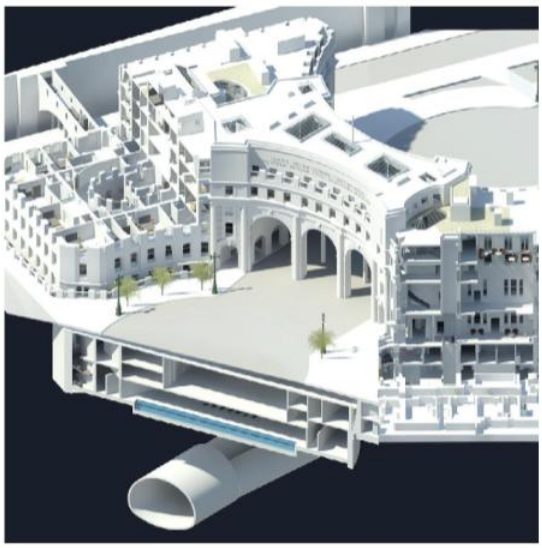
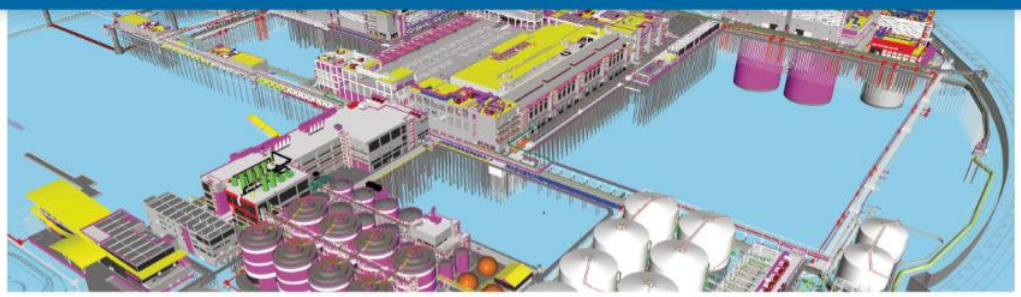


Table of Contents

Going Digital:
AWARD WINNERS



Advancements in Water and Wastewater Treatment Plants

Tuas Water Reclamation Plant

Jacobs Engineering Group and Singapore's National Water Agency, PUB
Singapore

Jacobs Engineering and Singapore's National Water Agency, PUB are part of the SGD 6.5 billion Deep Tunnel Sewerage System Phase 2 project, which will help serve Singapore's long-term used-water needs. The project needed to ensure design consistency, improve multidiscipline coordination, and model-based tendering and asset management.

With Bentley applications, the project team created fully federated 3D information models that:

- created a single source of truth among a globally dispersed team;
- ensured design consistency and multidiscipline coordination to save time;
- enabled instant access to the plant's data during construction and client handover.

Project Playbook: *LumenRT, MicroStation, Navigator, OpenBuildings Designer, OpenPlant, OpenPlant PID, OpenRoads, ProjectWise, STAAD*

Advancements in Water, Wastewater and Stormwater Networks

Thames Tideway Tunnel

Balfour Beatty, Morgan Sindall, BAM Nuttall Joint Venture
London, United Kingdom

The Balfour Beatty, Morgan Sindall, BAM Nuttall Joint Venture was tasked with delivering the GBP 450 million Thames Tideway Tunnel project, including a 25-kilometer-long tunnel under the River Thames. The joint venture needed to provide real-time data access and information sharing to accommodate the challenges among numerous project participants.

With ProjectWise, LumenRT, and SYNCHRO, the project team developed a digital twin that:

- facilitated construction management and stakeholder buy-in
- provided a simple user-friendly interface to save GBP 56,000 over a six-month period
- identified clashes in a virtual reality environment, optimizing construction and saving thousands in costs.

Project Playbook: *LumenRT, MicroStation, Navigator, OpenBuildings Designer, OpenRoads, ProjectWise, Promis.e, SYNCHRO*

Table of Contents

"

WINNER'S QUOTE

Bentley provides industry-leading capabilities for network management and asset inventory coupled with unparalleled capabilities in the field of road asset maintenance. AssetWise has helped us to optimize operations and maintenance through more informed decisions within a connected data environment to unlock economic and social benefits for the community along the Pan Borneo Highway Sarawak corridor.

Sauani Abdul Hamid, Chief Executive Officer, Lebuhraya Borneo Utara Sdn. Bhd.

The team of students from the Drummond Community High School in Edinburgh, Scotland, receive their award for their winning design in the "DEC Hyperloop Challenge."

TABLE OF CONTENTS

You should rely only on the information contained in this prospectus or contained in any free writing prospectus filed with the Securities and Exchange Commission (the "SEC"). Neither we, the selling stockholders nor the underwriters have authorized anyone to provide any information or make any representations other than those contained in this prospectus or in any free writing prospectus we have prepared. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, and only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of the Class B common stock. Our business, financial condition, results of operations, and prospects may have changed since such date.

For investors outside of the United States: neither we, the selling stockholders nor the underwriters have done anything that would permit this offering, or the use of or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about, and to observe any restrictions relating to, the offering of the shares of Class B common stock and the distribution of this prospectus outside of the United States.

Except as otherwise indicated herein or as the context otherwise requires, references to "Bentley Systems," the "Company," "we," "us," "our" and similar references refer to Bentley Systems, Incorporated and, where appropriate, its direct and indirect wholly-owned subsidiaries. References to the "Bentleys" refer to Barry J. Bentley, Gregory S. Bentley, Keith A. Bentley, and Raymond B. Bentley, and, where the context requires, certain of their family members and family trusts, collectively.

TRADEMARKS

This prospectus contains references to our trademarks and service marks and to those belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

This prospectus contains references to certain data derived from external publications:

- A report prepared by Oxford Economics. The report is copyrighted by the Global Infrastructure Hub Ltd (the "GI Hub"), and is licensed from the GI Hub under a Creative Commons Attribution 3.0 Australia License. To the extent permitted by law, the GI Hub disclaims liability to any person or organization in respect of anything done, or omitted to be done, in reliance upon information contained in the publication. See the section titled "Market and Industry Data;"
- Market analyses prepared by the ARC Advisory Group. All information in the report is proprietary and copyrighted by ARC Advisory Group; and
- A research report commissioned by us entitled "Infrastructure Engineering Software: Potential World-Wide Market Size" prepared by Cambashi Limited ("Cambashi").

PROSPECTUS SUMMARY

This summary highlights selected information that is presented in greater detail elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. This summary does not contain all of the information you should consider before investing in our Class B common stock. You should read this entire prospectus carefully, including the sections titled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the related notes included elsewhere in this prospectus, before making an investment decision. Some of the statements in this prospectus constitute forward-looking statements. See the section titled "Cautionary Note Regarding Forward-Looking Statements."

Our Mission

Bentley Systems' mission is to provide innovative software to advance the design, construction, and operations of the world's infrastructure—sustaining both the global economy and environment, for improved quality of life.

Bentley Systems: The Infrastructure Engineering Software Company

We are a leading global provider of software for infrastructure engineering, enabling the work of civil, structural, geotechnical, and plant engineering practitioners, their project delivery enterprises, and owner-operators of infrastructure assets. We were founded in 1984 by the Bentley brothers. Our enduring commitment is to develop and support the most comprehensive portfolio of integrated software offerings across professional disciplines, project and asset lifecycles, infrastructure sectors, and geographies. Our software enables digital workflows across engineering disciplines, distributed project teams, from offices to the field, and across computing form factors, including desktops, on-premises servers, cloud-native services, mobile devices, and web browsers. We deliver our solutions via on-premise, cloud, and hybrid environments. Our users engineer, construct, and operate projects and assets across the following infrastructure sectors:

- *public works* (including roads, rail, airports, ports, and water and wastewater networks) / *utilities* (including electric, gas, water, and communications). We estimate that this sector represents 52% of the net infrastructure asset value of the global top 500 infrastructure owners based on the 2019 edition of the *Bentley Infrastructure 500 Top Owners*, our annual compilation of the world's largest infrastructure owners ranked by net depreciated value of their tangible fixed assets;
- *industrial* (including discrete and process manufacturing, power generation, and water treatment plants) / *resources* (including oil and gas, mining, and offshore). We estimate that this sector represents 38% of the global top 500 infrastructure owners' net infrastructure asset value; and
- *commercial/facilities* (including office buildings, hospitals, and campuses). We estimate that this sector represents 10% of the global top 500 infrastructure owners' net infrastructure asset value.

Infrastructure assets are among the world's largest and longest-lived investments, vital to both economic prosperity and environmental health. The quality of a region's infrastructure directly affects the region's capacity to meet constituents' essential needs for water, sanitation, energy, transport, and productive industries. Moreover, infrastructure considerations can affect the rate of global climate change and communities' vulnerability and resilience to negative climate change outcomes.

Infrastructure is complex due both to its physical scale and to its need for information connectedness at and between every stage of its lifecycle. Infrastructure design requires the structured collaboration of many engineering disciplines, often requiring globally dispersed teams. Infrastructure construction requires a distributed supply chain to reach an often remote location to realize a unique design. Infrastructure operations are mission critical, and require maintaining performance throughput and fitness-for-purpose for multiple generations. The design, construction, and operations of infrastructure require comprehensive solutions that can support and integrate rigorous workflows across professional disciplines in concert over the infrastructure lifecycle.

Our business, comprised of more than 4,000 colleagues, includes a “success force” of more than 900 colleagues with experience and credentials in infrastructure engineering. Our success force, coupled with 36 years of singular focus, has enabled us to create what we believe to be the most comprehensive infrastructure engineering software portfolio available today. Our comprehensiveness creates a formidable competitive advantage by providing our users integrated solutions for infrastructure projects and assets of nearly any type, scale, and complexity.

We address both the project and asset lifecycle phases of infrastructure, each with applications and enterprise information systems. Our Project Lifecycle solutions encompass conception, planning, surveying, design, engineering, simulation, and construction, as well as the collaboration offerings required to coordinate and share the work of interdisciplinary and/or distributed project teams. Our Asset Lifecycle solutions span the operating life of commissioned infrastructure assets, allowing our accounts to manage engineering changes for safety and compliance and to model performance and reliability to support operating and maintenance decisions.

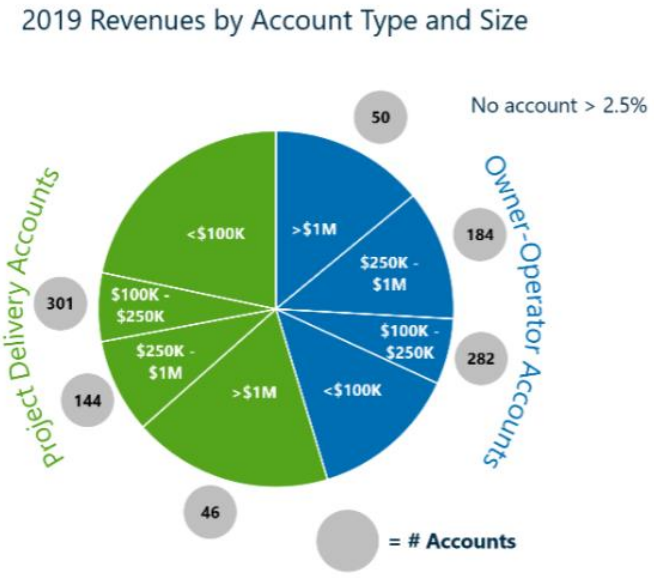
Our revenues are balanced and diversified between engineering and construction contracting firms who work together to deliver the design and construction of capital projects (representing 55% of our 2019 revenues), and their clients, public and private infrastructure asset owners and operators (representing 45% of our 2019 revenues). While engineering and construction contracting firms typically use our Project Lifecycle solutions, owner-operators are often involved in engineering and management for many of their own projects, and so can be users of our Project Lifecycle as well as our Asset Lifecycle solutions.

Our company’s “Advancing Infrastructure” tagline reflects our enduring track record in successfully leveraging new technologies to improve and integrate the design, construction, and operations of infrastructure, leading to our infrastructure digital twins. An infrastructure digital twin is a cloud-native 4D digital representation of a physical project and resulting asset, incorporating its underlying engineering information, that is applied to model, simulate, analyze, chronicle, and predict its performance over time. By adding digital twin services to our existing solutions, our users can more fully extend digital workflows across project delivery and asset performance, increasing the value of infrastructure engineers’ work.

We are the only infrastructure engineering software vendor to lead in market share in categories related to both the project and the asset lifecycle phases in the most recent rankings by The ARC Advisory Group (“ARC”). In August 2019, for *Engineering Design Tools for Plants, Infrastructure, and BIM* (building information modeling), ARC ranked us #2 overall, as well as #1 in each of Electric Transmission & Distribution and Communications and Water/Wastewater Distribution. In August 2019, ARC ranked us #1 in its inaugural market share study for Collaborative BIM. In December 2019, for *Asset Reliability Software & Services*, ARC ranked us #1 overall for software, as well as #1 in each of Transportation, Oil and Gas, and Electric Power Transmission and Distribution.

During the last two years, Microsoft recognized us as its 2019 “CityNext Partner of the Year” (citing our Azure-hosted *ProjectWise* for the Mumbai Trans Harbour Sea Link in India), its 2018 “CityNext Partner of the Year” (citing our Azure-hosted *ProjectWise* and *AssetWise* for the Klang Valley MRT in Kuala Lumpur, Malaysia), and a Finalist for the 2019 “Mixed Reality Partner of the Year Award” (citing our SYNCHRO XR 4D construction modeling application for the new HoloLens 2 device). Also, according to Microsoft, in 2019 we were one of the top 25 companies in terms of Azure usage globally.

We have spent decades cultivating trusted relationships with the largest global infrastructure engineering organizations. Our accounts include 90% of the top 250 of the *ENR 2019 Top 500 Design Firms* and 64% of the 2019 *Bentley Infrastructure 500 Top Owners*. The *ENR 2019 Top 500 Design Firms* is authored by Engineering News-Record (“ENR”) and the *Bentley Infrastructure 500 Top Owners* is authored by us. These rankings consist of substantially distinct account lists (with the exception of a *de minimis* number of overlapping accounts), and such accounts collectively represented 42% of our total revenues for the year ended December 31, 2019. Our solutions are, in general, mission critical both for our accounts and for our professional users and foster a high degree of loyalty, with 80% of our 2018 and 2019 total revenues coming from accounts of more than ten years’ standing, and 87% of our 2018 and 2019 total revenues coming from accounts of more than five years’ standing.



* All figures as of December 31, 2019. All figures calculated using ASC 606. Chart segment sizing corresponds to underlying % of 2019 revenue.

We are a significant software vendor to major infrastructure engineering organizations. In 2018 and 2019, 88 and 96 accounts, respectively, each contributed over $1 million to our revenues, representing 31% and 32% of our revenues, respectively. 50% of our 2018 revenues and 53% of our 2019 revenues came from 376 accounts and 424 accounts, respectively, each contributing over $250,000 to our revenues. During 2018 and 2019, we served 36,718 and 34,127 accounts, respectively, and for the six months ended June 30, 2019 and 2020, we served 31,130 and 31,745 accounts, respectively. We determine "accounts" based on distinct contractual and billing relationships with us. Affiliated entities of a single parent company may each have an independent account with us. We have historically offered, and have in recent years enhanced, volume discount programs to incentivize such affiliated entities to consolidate their contractual relationships with us, resulting in a reduction to the number of distinct accounts so defined. No single account or group of affiliated accounts provided more than 2.5% of our 2018 or 2019 revenues.

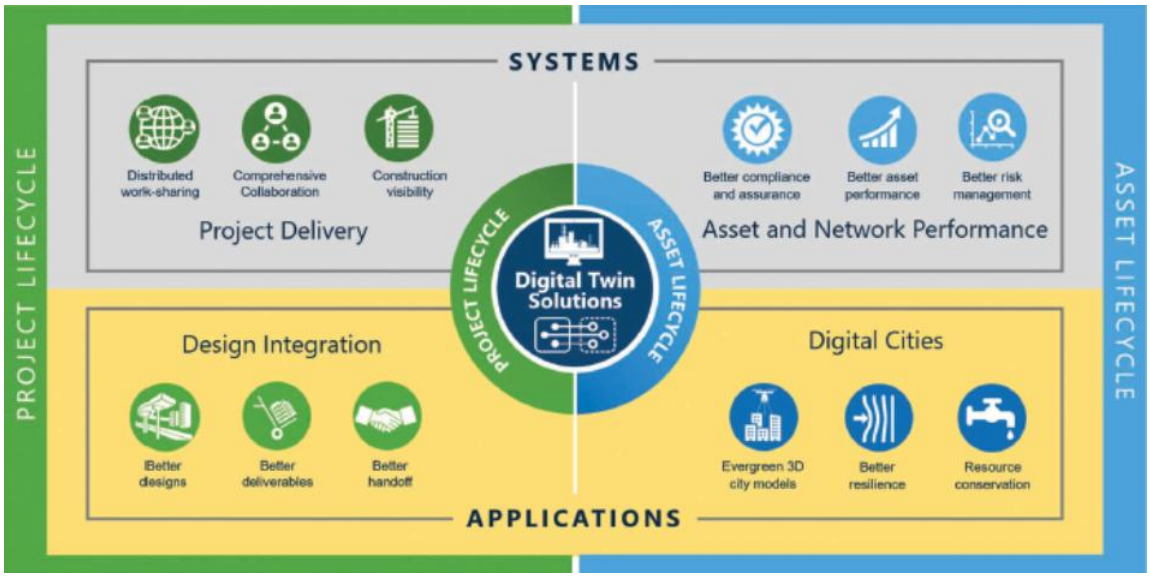
Our business is comprehensively global. In 2019 the majority of our revenues were generated across 171 countries outside the United States, with 32.1% from EMEA and 19.5% from APAC. We have purposefully invested and are fully established in developing international markets where rapid infrastructure growth will continue to present compelling opportunities for us to scale efficiently. In particular, Greater China, which we define as the Peoples' Republic of China, Hong Kong and Taiwan, and where we now have over 200 colleagues, has become one of our largest (among our top five) and fastest growing regions as measured by revenue, contributing just over 5% of our 2019 revenues.

In 2019, we generated subscription revenues of $608 million, total revenues of $737 million, net income of $103 million and Adjusted EBITDA of $188 million, and for the six months ended June 30, 2020, we generated subscription revenues of $328 million, total revenues of $379 million, net income of $69 million and Adjusted EBITDA of $116 million. Our business is cash-efficient, with approximately 70% of our revenues billed in advance, and a global tax rate of under 20%. For additional information on our financial results, key metrics, and non-GAAP financial metrics, see the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Business Metrics."

Our Solutions

We offer solutions for enterprises and professionals across the infrastructure lifecycle. Our Project Delivery and Asset and Network Performance solutions are systems provided via cloud and hybrid environments, developed

respectively to extend enterprise collaboration during project delivery, and to manage and leverage engineering information during operations and maintenance. Our Design Integration and Digital Cities solutions are primarily desktop applications and cloud-provisioned solutions for professional practitioners and workgroups. Our cloud-native Digital Twins solutions introduce digital workflows, which can span our Project Lifecycle and Asset Lifecycle solutions.



Project Lifecycle Solutions. Our Project Lifecycle solutions span conception, planning, surveying, design, simulation, and construction, as well as the collaboration software services required to coordinate and share the work of interdisciplinary and/or distributed project teams.

Design Integration. Our Design Integration solutions consist of modeling and simulation applications. Our modeling applications are domain-specific authoring tools used by professionals for the 3D design and documentation of infrastructure assets. Our simulation applications enable engineers to analyze the functional performance of the designs created with our modeling applications (or those of competitive vendors), preferably in iterative digital workflows, to improve engineering outcomes and to ensure compliance with design codes.

Benefits of our Design Integration applications to infrastructure engineers include:

- *Better designs.* Our modeling and simulation applications work together to improve infrastructure engineering quality, for instance to eliminate “clashes” across respective disciplines’ work. Each application is for a specific purpose (asset-type or discipline; for example, OpenRoads for roadway design) and supports corresponding asset-specific engineering workflows (for example, the workflow a civil engineer would use in designing a road);
- *Better deliverables.* Our applications share a common modeling environment to enable streamlined coordination and production of multi-discipline documentation; and
- *Better handoff.* Our comprehensive modeling environment and our supplemental cloud services enable projects to enrich information sharing (and to minimize problematic translations) across project delivery processes.

Project Delivery. Our Project Delivery solutions support information and document management, engineering-specific collaboration and work-sharing for distributed project teams and enterprises, and construction planning, modeling and execution. The scope of these solutions is not limited to users of only our own design applications.

Our 4D construction modeling software spatially and temporally integrates a project’s 3D engineering models into its construction schedules to assess sequencing strategies and to visualize and understand planned and actual

progress over the project timeline. Our solutions also enable project delivery teams to optimally define and manage discrete engineering, construction, and installation work packages, including the construction trades' "workface planning," which considers crafts and materials by day and zone. For work packages which increasingly take advantage of modular offsite fabrication and manufacturing, our software manages and enables 4D visualization of the necessary spatial and logistical interfaces.

Benefits of our Project Delivery solutions to project delivery enterprises include:

- *Distributed work-sharing*: Our solutions incorporate the rigorous workflow protocols required for structured coordination across engineering and construction supply chains, enabling global sourcing for integrated project delivery, while maximizing economics, quality, and safety;
- *Comprehensive collaboration*: Our software leverages cloud and hybrid environments to streamline the aggregation, distribution, and interaction for project deliverables, ensuring that the right project participants have the right information in the right format at the right time, including at the project site and on every device; and
- *Construction visibility*: Our solutions' broad span and continuous detail across design integration, construction modeling and work packaging, and mixed-reality 4D visualization, advances predictability, accountability, and safety throughout the construction process.

Asset Lifecycle Solutions. Our Asset Lifecycle solutions span the operating life of commissioned infrastructure assets, capturing and managing changes to engineering models and enterprise information for compliance and safety, and to model performance and reliability to support operating and maintenance decisions.

Asset and Network Performance. Our Asset and Network Performance solutions are used to manage engineering information and geospatial relationships for operating and provisioning infrastructure across all sectors, including linear networks for transportation and energy transmission and distribution. Our asset performance modeling provides the needed analytical context for "right-time" data, including from Internet of Things ("IoT") sensor capabilities, to yield actionable insights.

Benefits of our Asset and Network Performance solutions for owner-operators include:

- *Better compliance and assurance*: Our systems intrinsically enforce the rigor appropriate for operating infrastructure assets in order to provide dependable visibility into the impact of changes;
- *Better asset performance*: Our solutions include operational dashboards that provide decision support insights to maintain and improve throughput and reliability; and
- *Better risk management*: Our solutions include predictive analytics that identify potential problems before they occur, and ensure the accessibility of best-available engineering information and models for mitigation and resilience.

Digital Cities. Our Digital Cities solutions incorporate reality modeling (leveraging drone and mobile mapping "survey" inputs) and geospatial context to continuously capture as-operated infrastructure conditions at city and regional scale. Our offerings support department-level applications for municipal engineering, such as simulation of pedestrian and vehicle traffic, and water and drainage systems.

Benefits of our Digital Cities solutions to cities, regions, and their constituents include:

- *Evergreen 3D city models*: Our reality modeling software maintains engineering-ready 3D models, incorporating incrementally updated surveys, and thus ensures that engineering departments can rely on up-to-date geospatial context for digital workflows;
- *Better resilience*: Our solutions can integrate geotechnical, structural/seismic, and hydrological engineering modeling with evergreen 3D city models to harden infrastructure from flood and other natural hazards, and to apply engineering simulations for mitigation and emergency response; and
- *Resource conservation*: Taking full advantage of our solutions can significantly increase efficiency and reduce waste. For instance, our water network modeling tools, applied to compare as-designed specifications to observed flows and pressures, can help to non-invasively locate subsurface water network leaks.

Infrastructure Digital Twins.

Our digital twins offerings enable our users to create and curate cloud-native 4D digital representations of physical projects and resulting assets, incorporating underlying engineering information, and then to model, simulate, analyze, chronicle, and predict performance over time. Using digital twins, our users can more fully extend digital workflows across project delivery and asset performance, increasing the value of infrastructure engineers' work.

Benefits of our digital twins solutions to project delivery firms and owner-operators include:

- *Advanced insights.* For project delivery, digital twins can reveal insights beyond what would be visible with traditional workflows; for example, a digital twin can show 3D heat maps highlighting where changes in a design have been unusually pervasive, indicating possible design flaws. For asset performance, such insights from digital twins can be used to evaluate different strategies for optimizing operational efficiencies and throughput;
- *Predictive analytics.* For project delivery, digital twins and machine learning can compare the progress of a current project with similar projects that have been previously completed, and identify in advance potential bottlenecks, in time to take corrective action. For asset performance, a digital twin can track observations from various operational inputs against design intelligence to predict future failures and recommend maintenance actions to minimize downtime;
- *Continuous and comprehensive design reviews.* For project delivery, digital twins can aggregate and align design models and data from all sources "on the fly" (without interruptions for translations, and without specialized software) to present immersive 3D status visualization in a web browser for any authorized stakeholder to participate in ongoing interactive design reviews; and
- *Convergence of OT, IT, and now ET.* Infrastructure owner-operators are increasingly able to instrument their assets with IoT sensors, producing torrents of Operational Technology ("OT") data that are difficult to interpret. Software advances in Information Technology ("IT") can in turn make data from enterprise transaction systems, such as maintenance work order history, accessible for analytics. But even OT and IT together cannot inform decisions for improved asset performance as sufficiently as when combined with accessibility to comparable analytics from the assets' engineering models, which we refer to as the Engineering Technology ("ET"). Infrastructure digital twins notably enable the convergence of ET with OT and IT. With infrastructure digital twins, the design intent (the "digital DNA" captured in the digital twins' engineering models and simulations) can serve as a baseline for comparison to IoT-monitored "as-operated" performance, in light of the asset's operations and maintenance history stored in IT systems, to enable integrated analytics to provide timely insights and recommended actions to optimize safety and performance.

Comprehensiveness of Our Offerings

Our offerings are comprehensive across professional disciplines, lifecycle stages, infrastructure sectors, and geographies, resulting in what we believe to be durable competitive advantages:

Professional Disciplines. Each infrastructure project requires seamless and deep collaboration among professional disciplines, which can include civil, structural, geotechnical, and process engineers, architects, geospatial professionals, city and regional planners, contractors, fabricators, and operations and maintenance engineers. Our open modeling and open simulation applications facilitate iterative interactions between disciplines and coordination across project participants. Additionally, we believe our collaboration systems lead the market in managing infrastructure engineering firms' preferred work-in-progress workflows.

Lifecycle Stages. Both project delivery enterprises and owner-operators benefit from our solutions which enable digital workflows to extend between project and asset lifecycles, from design to construction and ultimately asset management. This capability allows our users' digital engineering models to be leveraged as the context for real-time condition monitoring to achieve better and safer operations and maintenance.

Infrastructure Sectors. Most major engineering and project delivery firms pursue an ever-changing mix of projects across the public works/utilities, industrial/resources, and commercial/facilities sectors and for flexibility tend to favor an infrastructure engineering software vendor whose portfolio correspondingly spans their full breadth. This comprehensiveness provides diversification for our own business, as an incidental advantage. For example, when

there have been cyclical downturns in the primarily privately-financed industrial/resources and commercial/facilities sectors, we have historically witnessed offsetting counter-cyclical government investment in public works/utilities.

Geographies. While design codes may vary by country, infrastructure purposes and engineering practices are fundamentally the same throughout the world, which makes it possible for our infrastructure modeling applications to be used globally. Our offerings are available in most major languages, supporting country-specific standards and conventions. Our development teams are also globally dispersed, due in part to acquisitions made in various countries, but also to provide any needed last mile localization of our applications. Our global comprehensiveness enables our project delivery accounts to compete more efficiently across geographic markets, thus also providing global supply-chain sourcing choices for owners.

Our Opportunity

We believe we are successful and well-established in enterprise-level relationships with the world's largest infrastructure engineering organizations, including both project-delivery contracting firms and owner-operators. Today, we address a significant market opportunity, which we refer to as our serviceable addressable market ("SAM"). We estimate our global SAM is approximately $9.5 billion, $6.1 billion of which is attributable to project delivery firms and $3.4 billion of which is attributable to owner-operators. Further, of our $9.5 billion SAM, approximately $1.6 billion is in Greater China.

We also view our market opportunity in terms of the total addressable market ("TAM"), which we believe we can address over the long term. We believe that digital progress in the engineering of constructed infrastructure has to date lagged behind other substantial economic domains, and in particular has lagged behind digital progress—as reflected in spending on engineering software—in the engineering of manufactured products. Cambashi estimates that if engineering software spending would become as intensive in infrastructure engineering as in product engineering, global infrastructure engineering software spending, or our TAM, would be $29.2 billion. We believe that over time our current SAM of $9.5 billion will approach our estimated TAM of $29.2 billion. We also believe that both our SAM and our TAM will further expand over time with the growth of infrastructure spending. See the section titled "Business—Our Opportunity."

Our Growth Strategies

We employ the following growth strategies to address the infrastructure engineering software market opportunities:

- ***Accretion within existing accounts.*** We believe we can further penetrate our existing accounts by broadening their use of our portfolio. There are three primary mechanisms for this expansion:
  - *New commercial formulations.* We continually innovate with new commercial formulations to align the use of our software to the needs of our users. We believe the flexibility in our commercial models and deployment options will allow our accounts to grow usage continuously;
  - *Automating user engagement.* We employ various technologies to drive user engagement. We will continue to leverage these interactive technologies to virtually assist our users and drive engagement across our software offerings; and
  - *Adding new offerings.* We have a history of building and maintaining leadership in infrastructure software engineering comprehensiveness and intend to continue to innovate and develop our software offerings. We intend to continue to develop and integrate new products and capabilities over time;
- ***Focusing on Asia.*** We believe Asia represents a large market opportunity and will continue to do so over the foreseeable future. We intend to continue investing in strategies to enhance our market position in Asia;
- ***Increasing inside sales.*** We will continue to expand our global inside sales resources and to multiply their reach and effectiveness with superior digital tools to convert leads and to provide the self-service administration that engineering practitioners prefer; and

- ***Digital co-ventures.*** We have forged substantial alliances with other major participants in the infrastructure engineering supply chain (for example, Topcon, Siemens, and Microsoft), primarily to jointly develop and offer digital twin cloud services that extend the scope of our software.
- ***Investing in digital integrator businesses.*** We intend to invest in and grow a portfolio of businesses operating outside of our core software business with the objective of cultivating an ecosystem of relatively service-intensive, yet profitable, digital integrator businesses that stimulate pull-through demand for our solutions.

Recent Developments

Impact of COVID-19

In March 2020, the World Health Organization declared a global pandemic related to the rapidly growing outbreak of the disease COVID-19, caused by a novel strain of coronavirus, SARS-CoV-2. The COVID-19 outbreak and certain preventative or protective actions that governments, businesses and individuals have taken in respect of COVID-19 have resulted in global business disruptions.

In response to the COVID-19 pandemic, we implemented a number of initiatives to ensure the safety of our colleagues and enable them to move to a work from home environment seamlessly and continue working effectively. These initiatives included providing our colleagues with necessary equipment, making certain that all colleagues had means of video and audio communications online, and guaranteeing that our network bandwidth was sufficient. Our business model is such that we had minimal disruption to our ability to deliver our solutions to accounts, and we did not have any loss of productivity during this transition. Almost all of our colleagues have been working from home since March 16, 2020, with a minority of our colleagues working in our office environments on a voluntary basis and abiding by appropriate distancing and sanitary regulations for their region. We communicated regularly and provided on-demand learning and support to our colleagues throughout the transition period. Based on a May 2020 internal survey, a majority of our colleagues are confident in the decisions that Bentley leadership is making regarding employee well-being and safety during this pandemic, and a majority of our colleagues believe that Bentley's response to and communication regarding COVID-19 has been timely and helpful.

The impact of the pandemic on our financial performance has been modest; our revenues have continued to grow given the mission critical nature of our solutions. For the months of March and April, our accounts' usage of our applications was down approximately 3-5% when compared to levels from the same periods in 2019; however, these metrics returned to pre-COVID-19 levels in June 2020. The modest and temporary dip in usage had limited impact on our recurring revenues, which are comprised primarily of longer term contracts. The growth of our revenues from perpetual licenses and professional services has been impacted as selected accounts have shifted spend to subscription solutions or delayed new projects.

Moreover, we were quick to find ways to support our accounts and users, including the launch of a "Bentley Has Your Back" campaign to help our accounts take full advantage of their Bentley software. This campaign included producing over 50 self-help documents, 20 webinars, and several messages guiding users on various topics including how Bentley's solutions should be configured when working with limited bandwidth, how to use a SmartTV as a monitor, and how to leverage specific offerings such as ProjectWise to facilitate collaboration in their own businesses in remote working environments. This guidance and assistance was well received by accounts and we believe helped maximize usage during the observed trough in March and April.

We have also taken measures to reduce selected operating expenses, including various costs associated with travel and facilities. Much of those resulting savings have been or will be re-invested in a portfolio of businesses outside of our core software business, with the objective of cultivating an ecosystem of digital integrator businesses.

Our business benefits from a resilient business model backed by industry tailwinds and a strong financial profile. We believe that significant public and private investment will continue to drive spend for infrastructure globally, which will continue to drive demand for our solutions. Additionally, we do not have any material account concentration; no single account or group of affiliated accounts, represented more than 2.5% of our revenues for the

year ended December 31, 2019. As of June 30, 2020, we had $126 million of cash and cash equivalents, and $293 million was available under the Credit Facility (as defined below).

Relationship with Siemens AG ("Siemens")

As discussed in the section titled "Certain Relationships and Related Party Transactions—Our Relationship with Siemens AG—Common Stock Purchase Agreement," we, and the Bentley family members party to the Common Stock Purchase Agreement, entered into the Common Stock Purchase Agreement with Siemens in September 2016, pursuant to which we and they have granted Siemens a right of first refusal with respect to certain deemed liquidation events, offers, sales or certain issuances of our capital stock, and with respect to certain transfers of our capital stock by the Bentley family members party thereto. Pursuant to the terms of the Common Stock Purchase Agreement, Siemens' right of first refusal expires upon the effectiveness of a registration statement in connection with an underwritten initial public offering. Siemens contends that this right of first refusal applies to sales of common stock in an initial public offering by the Company or the Bentley family members party to the Common Stock Purchase Agreement. While we disagree with Siemens' contention, our initial public offering of Class B common stock will be exclusively by existing holders whose transfers of capital stock are not subject to Siemens' right of first refusal, and we have not included any shares to be issued by the Company or any shares held by the Bentley family members party to the Common Stock Purchase Agreement in the offering pursuant to this prospectus.

Additional information regarding our relationship with Siemens is discussed in the section titled "Certain Relationships and Related Party Transactions—Our Relationship with Siemens AG."

Potential for Post-IPO Follow-On Offering

Following the effectiveness of the registration statement of which this prospectus forms a part, Siemens' right of first refusal will terminate. Following the completion of this offering, we intend to evaluate opportunities to then undertake a primary offering of our Class B common stock by the Company, subject to the lock-up agreement entered into with the underwriters in this offering, prevailing market conditions and applicable securities laws. We have not engaged in any formal discussions regarding any such offering and we have not undertaken any steps to pursue such an offering. The Company lock-up contained in the underwriting agreement to be entered into by us with the underwriters in this offering will permit us and selling stockholders to sell shares of Class B common stock in an aggregate amount equal to up to 20% of our total Class B common stock outstanding at such time beginning on December 1, 2020, and such lock-up agreement expires 180 days following the date of this prospectus. See the section titled "Underwriting" for additional information regarding our lock-up agreement with the underwriters.

Risk Factor Summary

Investing in our Class B common stock involves a high degree of risk. You should carefully consider all information in this prospectus prior to investing in our Class B common stock. These risks are discussed more fully in the section titled "Risk Factors." These risks and uncertainties include, but are not limited to, the following:

- Demand for our software solutions is subject to volatility in our accounts' underlying businesses, which includes infrastructure projects that typically have long timelines;
- The majority of our revenues and an increasing percentage of our operations are attributable to operations outside the United States, and our results of operations therefore may be materially affected by the legal, regulatory, social, political, economic and other risks of foreign operations;
- Recent and potential tariffs imposed by the U.S. government or a global trade war could increase the cost of our products and services and the cost of conducting our business, which could harm our business, financial condition and results of operations;
- Global economic conditions may negatively impact our business, financial results and financial condition;
- Decreased investment by APAC, including China, may have a negative effect on our business;
- The ongoing global coronavirus outbreak could materially and adversely affect our business;

- The sales cycle for some of our solutions can be long and unpredictable and requires considerable time and expense, which may cause our results of operations to fluctuate;
- If we do not keep pace with technological changes, and effectively market our new product solutions, our solutions may become less competitive and our business may suffer;
- Interruptions in the availability of server systems or communications with Internet, third-party hosting facilities or cloud-based services, or failure to maintain the security, confidentiality, accessibility or integrity of data stored on such systems, could harm our business or impair the delivery of our managed services;
- If our security measures or those of our third-party cloud data hosts, cloud computing platform providers, or third-party service partners, are breached, and unauthorized access is obtained to an account's data, our data or our IT systems, our services may be perceived as not being secure, accounts may curtail or stop using our services, and we may incur significant legal and financial exposure and liabilities;
- We face intense competition;
- We may not be able to increase the number of new subscription-based accounts or cause existing accounts to renew their subscriptions, which could have a negative impact on our future revenues and results of operations;
- Our revenue recognition policy and other factors may create volatility in our financial results in any given period and make them difficult to predict;
- Failure to protect our intellectual property rights could impair our ability to protect our proprietary technology and our brand;
- We depend on our senior management team and other key personnel, and we could be subject to substantial risk of loss if any of them terminate their relationship with us;
- Our share price may be volatile, and you may be unable to sell your shares at or above the offering price, if at all. Market volatility may affect the value of an investment in our Class B common stock and could subject us to litigation;
- There has been no public market for our Class B common stock prior to this offering, and you may not be able to resell our shares at or above the price you paid, or at all. In addition, the limited public float of our Class B common stock following this offering could adversely impact the trading price of our Class B common stock; and
- The dual class structure of our common stock has the effect of concentrating voting control with the Bentleys and their affiliates.

Channels for Disclosure of Information

Investors, the media, and others should note that, following the effectiveness of the registration statement of which this prospectus forms a part, we intend to announce material information to the public through filings with the SEC, the investor relations page on our website, press releases, public conference calls and webcasts.

The information disclosed by the foregoing channels could be deemed to be material information. As such, we encourage investors, the media, and others to follow the channels listed above and to review the information disclosed through such channels.

Any updates to the list of disclosure channels through which we will announce information will be posted on the investor relations page on our website.

Corporate Information

Bentley Systems, Incorporated was incorporated in Delaware in 1987. We were originally incorporated in California in 1984 upon our founding. Our principal offices are located at 685 Stockton Drive, Exton, PA 19341, and our telephone number is (610) 458-5000. Our website address is www.bentley.com. Information contained on, or that

can be accessed through, our website does not constitute part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

Emerging Growth Company

The Jumpstart Our Business Startups Act (the "JOBS Act") was enacted in April 2012 with the intention of encouraging capital formation in the United States and reducing the regulatory burden on newly-public companies that qualify as "emerging growth companies." We are an "emerging growth company" within the meaning of the JOBS Act. As an "emerging growth company," we intend to take advantage of certain exemptions from various public reporting requirements, including the requirement that our internal control over financial reporting be audited by our independent registered public accounting firm pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), certain requirements related to the disclosure of executive compensation in this prospectus and in our periodic reports and proxy statements, and the requirement that we hold a non-binding advisory vote on executive compensation and any golden parachute payments. Additionally, as an "emerging growth company" we are required to have only two years of audited financial statements and only two years of related selected financial data and Management's Discussion and Analysis of Financial Condition and Results of Operations disclosure. We may take advantage of these exemptions until we are no longer an "emerging growth company."

In addition, under the JOBS Act, "emerging growth companies" can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We intend to avail ourselves of this exemption from new or revised accounting standards. Accordingly, we will not be subject to the same new or revised accounting standards as other public companies that are not "emerging growth companies."

We will remain an "emerging growth company" until the earliest to occur of: (i) the last day of the fiscal year in which we have more than $1.07 billion in annual revenue; (ii) the date we qualify as a "large accelerated filer," with at least $700 million of equity securities held by non-affiliates; (iii) the date on which we have issued, in any three-year period, more than $1.0 billion in non-convertible debt securities; and (iv) the last day of the fiscal year ending after the fifth anniversary of the completion of this offering.

For certain risks related to our status as an "emerging growth company," see the section titled "Risk Factors—Risks Related to Our Business and Industry—We are an 'emerging growth company,' and the reduced disclosure requirements applicable to 'emerging growth companies' may make our Class B common stock less attractive to investors."

Controlled Company Status

We will be a "controlled company" within the meaning of the corporate governance rules of the Nasdaq Listing Rules. Under these rules, a company for which more than 50% of the voting power for the election of directors is held by an individual, group, or another company is a "controlled company" and may elect not to comply with certain of the Nasdaq Listing Rules' corporate governance requirements, including: (i) the requirement that a majority of our board of directors consist of "independent directors" as defined under the Nasdaq Listing Rules; (ii) the requirement that we have a compensation committee that is composed entirely of independent directors; and (iii) the requirement that we have a nominating and corporate governance committee that is composed entirely of independent directors. We intend to use these exemptions upon our listing. As a result, we will not have a majority of independent directors on our board of directors. Additionally, upon completion of this offering, we do not intend to have a compensation committee, nor do we intend to have a nominating and corporate governance committee or an independent nominating function. Instead, our full board of directors will be directly responsible for reviewing and approving compensation and benefit arrangements for our executive officers and directors, as well as for nominating members of our board. Accordingly, in the future our stockholders may not have the same protections afforded to stockholders of companies that are subject to all of the Nasdaq Listing Rules' corporate governance requirements.

Following the completion of this offering, the shares of Class A common stock and Class B common stock held by members of the Bentley family (including their permitted transferees) will represent approximately 67% of our outstanding common stock and approximately 83% of the voting power.

THE OFFERING

Issuer	Bentley Systems, Incorporated
Class B common stock offered by the selling stockholders	shares (shares in the event the underwriters exercise their option to purchase additional shares in full)
Common stock to be outstanding after this offering:	
Class A common stock	shares
Class B common stock	shares
Total shares of common stock to be outstanding after this offering	shares
Voting rights	Each share of our Class A common stock will be entitled to 29 votes per share and is convertible into one share of our Class B common stock at any time at a holder's option and automatically upon certain transfers, provided, however, that at any such time, and thereafter, as none of the Bentleys is an executive officer or director of the Company, the holders of our Class A common stock will be entitled to 11 votes per share. All of our Class A common stock also will automatically convert into shares of our Class B common stock upon the affirmative vote of at least 90% of the then outstanding shares of Class A common stock or such time that the Bentleys and their permitted transferees, collectively, directly or indirectly, own less than 20% of our issued and outstanding Class B common stock on a fully-diluted basis (assuming the conversion of all issued and outstanding Class A common stock). Each share of our Class B common stock is entitled to one vote per share and is not convertible into any other shares of our capital stock. Holders of our Class A common stock and Class B common stock will generally vote together as a single class, unless otherwise required by our amended and restated certificate of incorporation or law. The shares of our Class A common stock outstanding after this offering will represent approximately % of the total number of shares of our Class A and Class B common stock outstanding after this offering and % of the combined voting power of our Class A and Class B common stock. The holders of our Class A common stock will have the ability to control the outcome of matters submitted to our stockholders for approval, including the election of our directors and the approval of any change in control transactions. See the sections titled "Principal and Selling Stockholders" and "Description of Capital Stock" for additional information. Upon completion of this offering, the Bentleys will beneficially own, in the aggregate, approximately % of our outstanding shares of common stock representing approximately % of the voting power.

Use of proceeds	The selling stockholders will receive all of the proceeds from the sale of shares of our Class B common stock in this offering. We will not receive any proceeds from the sale of shares by the selling stockholders. The selling stockholders will not be responsible for any offering expenses.
Risk factors	Investing in our Class B common stock involves risk. See the section titled "Risk Factors" in this prospectus for a discussion of the factors you should carefully consider before deciding to invest in our Class B common stock.
Proposed NASDAQ symbol	"BSY"

The number of shares of our Class A and Class B common stock to be outstanding after this offering is based upon 11,601,757 shares of Class A common stock and 247,607,598 shares of Class B common stock outstanding as of June 30, 2020, plus:

- 994,912 total shares of restricted Class B common stock and restricted stock units issued in July 2020 that will vest automatically upon the consummation of this offering, reduced by 32,238 of such restricted stock units that will be settled in cash; and
- shares of Class B common stock to be sold in this offering following the exercise of stock options for such shares.

The number of shares of our Class A and Class B common stock to be outstanding after this offering excludes:

- shares of Class B common stock issuable upon exercise of stock options outstanding as of the date of this prospectus at a weighted average exercise price of $ per share of Class B common stock;
- 45,151 shares of Class B common stock issuable upon the settlement of fully-vested restricted stock units outstanding as of June 30, 2020;
- shares of unvested restricted Class B common stock and restricted stock units outstanding as of the date of this prospectus that will not vest upon consummation of this offering;
- 27,941,520 shares of Class B common stock held by colleagues and directors as phantom shares under our nonqualified deferred compensation plans as of June 30, 2020; and
- shares to be reserved for issuance under our 2020 Incentive Award Plan.

Except as otherwise indicated, all information in this prospectus assumes:

- no exercise of the underwriters' option to purchase additional shares; and
- the filing of our amended and restated certificate of incorporation and the effectiveness of our amended and restated by-laws, each of which will occur immediately prior to the completion of this offering, which we refer to in this prospectus as the "Charter Amendments."

SUMMARY CONSOLIDATED FINANCIAL DATA

The following tables set forth summary consolidated financial data. The summary consolidated statement of operations data for the years ended December 31, 2018 and 2019 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The summary consolidated statement of operations data for the year ended December 31, 2017 has been derived from our audited consolidated financial statements not included in this prospectus, which were audited in accordance with the auditing standards of the American Institute of Certified Public Accountants rather than the auditing standards of the Public Company Accounting Oversight Board. The consolidated statements of operations data for the six months ended June 30, 2019 and 2020 and the consolidated balance sheet data as of June 30, 2020 have been derived from our unaudited consolidated financial statements included elsewhere in this prospectus. The unaudited consolidated financial statements include all adjustments, consisting of normal recurring accruals, that we consider necessary for a fair presentation of the financial position and the results of operations for these periods. You should read this summary consolidated financial data in conjunction with the sections titled “Selected Consolidated Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected in the future, and our results of operations for the six months ended June 30, 2020 are not necessarily indicative of the results that may be expected for the entire year ending December 31, 2020 or any other period.

All amounts presented in this summary consolidated financial data, except share and per share amounts, are presented in thousands. Additionally, many of the amounts and percentages have been rounded for convenience of presentation.

Consolidated Statements of Operations Data:

	Year Ended December 31,				Six Months Ended June 30,	
	2017	2018	2019		2019	2020
	Topic 605		Topic 605[1]	Topic 606	Topic 606	Topic 606
Revenues:						
Subscriptions	$ 501,098	$ 557,421	$ 613,925	$ 608,300	$ 290,147	$ 327,837
Perpetual licenses	61,661	61,065	52,519	59,693	24,468	23,193
Subscriptions and licenses	562,759	618,486	666,444	667,993	314,615	351,030
Services	66,164	73,224	68,405	68,661	32,529	27,950
Total revenues	628,923	691,710	734,849	736,654	347,144	378,980
Cost of revenues:						
Cost of subscriptions and licenses	53,662	55,113	71,439	71,578	30,831	43,128
Cost of services	66,928	76,211	72,572	72,572	38,367	30,836
Total cost of revenues	120,590	131,324	144,011	144,150	69,198	73,964
Gross profit	508,333	560,386	590,838	592,504	277,946	305,016
Operating expenses:						
Research and development	151,194	175,032	183,552	183,552	91,861	89,353
Selling and marketing	139,259	160,635	155,274	155,294	75,168	65,727
General and administrative	87,467	89,328	97,580	97,580	46,307	52,269
Amortization of purchased intangibles	9,014	14,000	14,213	14,213	6,852	7,115
Total operating expenses	386,934	438,995	450,619	450,639	220,188	214,464
Income from operations	121,399	121,391	140,219	141,865	57,758	90,552
Interest expense, net	(10,320)	(8,765)	(8,199)	(8,199)	(4,474)	(2,516)
Other income (expense), net	(5,773)	236	(5,557)	(5,557)	(1,747)	(6,985)
Income before income taxes	105,306	112,862	126,463	128,109	51,537	81,051
Provision for income taxes	46,141	(29,250)	21,762	23,738	5,119	11,440
Equity in loss of joint venture, net of tax	—	—	1,275	1,275	—	866
Net income	$ 59,165	142,112	103,426	103,096	46,418	68,745
Less: Net income attributable to participating securities		(4)	(8)	(8)	(12)	—
Net income per share attributable to Class A and Class B common shares		$ 142,108	$ 103,418	$ 103,088	$ 46,406	$ 68,745
Net income per share:						
Basic		$ 0.50	$ 0.36	$ 0.36	$ 0.16	$ 0.24
Diluted		$ 0.49	$ 0.35	$ 0.35	$ 0.16	$ 0.23
Weighted average shares outstanding, basic		285,805,096	284,625,642	284,625,642	285,529,476	286,068,766
Weighted average shares outstanding, diluted		292,624,496	293,796,707	293,796,707	293,633,255	295,595,234

(1) The Topic 605 amounts presented for the year ended December 31, 2019 give effect to revenue adjustments as if the adoption of Topic 606 had not occurred on January 1, 2019. For a reconciliation of the impact of adopting Topic 606 on our audited consolidated financial statements for the year ended December 31, 2019, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

Revenue Comparison—Topic 605 versus Topic 606:

On January 1, 2019, we adopted ASU No. 2014-09, *Revenue from Contracts with Customers*, and related amendments ("Topic 606"), which supersedes substantially all existing revenue recognition guidance under accounting principles generally accepted in the United States ("U.S. GAAP"). We adopted Topic 606 using the modified retrospective method, under which the cumulative effect of initially applying Topic 606 was recorded as a reduction to the opening balance of *Accumulated deficit* of $125,464 ($101,489, net of tax) as of January 1, 2019. We applied the standard only to contracts that were not completed as of the date of initial application. The comparative information in our consolidated financial statements included elsewhere in this prospectus continues to be reported in accordance with the guidance provided by Accounting Standards Codification ("ASC") 985-605, *Software-Revenue Recognition* and Topic 605-25, *Revenue Recognition, Multiple-Element Arrangements*. We refer to ASC 985-605 and Topic 605-25 collectively as "Topic 605."

The below table presents a comparison of our revenues as recognized under Topic 605 and Topic 606. We believe that an understanding of the impact of the revenue recognition guidance under Topic 606 on our revenues and revenue trends is useful in evaluating our operating performance.

	Year Ended December 31,		
	2017	2018	2019
Topic 605:[1]			
Subscriptions	$ 501,098	$ 557,421	$ 613,925
Perpetual licenses	61,661	61,065	52,519
Services	66,164	73,224	68,405
Total revenues	$ 628,923	$ 691,710	$ 734,849
Topic 606:[2]			
Subscriptions	$ 505,720	$ 560,485	$ 608,300
Perpetual licenses	49,983	57,353	59,693
Services	66,164	73,224	68,661
Total revenues	$ 621,867	$ 691,062	$ 736,654

(1) The Topic 605 amounts presented for the year ended December 31, 2019 give effect to revenue adjustments as if the adoption of Topic 606 had not occurred on January 1, 2019. For a reconciliation of the impact of adopting Topic 606 on our audited consolidated financial statements for the year ended December 31, 2019, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

(2) The Topic 606 unaudited amounts presented for the years ended December 31, 2017 and 2018 give effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2017 rather than January 1, 2019. For a reconciliation of the impact of adopting Topic 606 as if it had occurred as of January 1, 2017 on our audited consolidated statements of operations data for the years ended December 31, 2017 and 2018, see the section titled "Selected Consolidated Financial Data—Non-GAAP Financial Measures."

Key Business Metrics:

We regularly review the following key metrics to evaluate our business, measure our performance, identify trends in our business, prepare financial projections, and make strategic decisions.

	Year Ended December 31,			Twelve Months Ended June 30,	
	2017	2018	2019	2019	2020
Last twelve-months recurring revenues (Topic 606)	$ 521,923	$ 586,466	$ 631,097	$606,411	$665,659
Last twelve-months recurring revenues (Topic 605)	$ 523,502	$ 582,402	$ 636,899	$604,043	$670,825
Constant Currency:					
Annualized recurring revenues ("ARR") growth rate	9 %	10 %	12 %	11 %	11 %
Account retention rate	98 %	98 %	98 %	98 %	98 %
Recurring revenues dollar-based net retention rate	105 %	107 %	108 %	106 %	110 %

Last twelve-months recurring revenues. Last twelve-months recurring revenues is calculated as recurring revenues recognized over the preceding twelve-month period. We define recurring revenues as subscriptions revenues that recur monthly, quarterly, or annually with specific or automatic renewal clauses and professional services revenues in which the underlying contract is based on a fixed fee and contains automatic annual renewal provisions.

Last twelve-months recurring revenues is presented using revenues recognized pursuant to Topic 606 as well as Topic 605 for all periods in order to enhance comparability during our transition to Topic 606. The Topic 606 unaudited amounts presented for the years ended December 31, 2017 and 2018 give effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2017 rather than January 1, 2019. For a reconciliation of the impact of adopting Topic 606 as if it had occurred as of January 1, 2017 on our audited consolidated statements of operations data for the years ended December 31, 2017 and 2018, see the section titled "Selected Consolidated Financial Data—Non-GAAP Financial Measures."

On an annual and trailing twelve-month basis, we expect our recurring revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605. This expectation is attributable to the annual, recurring nature of our subscription agreements. However, the conversion of our existing subscription users to consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, as well as the term start date of new annual term license subscriptions, will introduce some volatility between annual and trailing twelve-month periods and impact period over period comparability. Specifically, in 2019, the conversion of existing ELS subscriptions to consumption-based E365 subscriptions resulted in a reduction of Topic 606 Enterprise subscriptions revenues of $11,248 when compared to Topic 605. This impact was partly offset by higher annual term license subscriptions revenues under Topic 606 of $5,714 due to the upfront recognition of license revenues of new subscriptions. See the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Impacting Comparability and Performance.”

We believe that last twelve-months recurring revenues is an important indicator of our performance during the immediately preceding twelve-month time period. We believe that we will continue to experience favorable growth in recurring revenues due to our strong account retention and recurring revenues dollar-based net retention rates as well as the addition of new accounts with recurring revenues. The last twelve-months recurring revenues under Topic 606 for the periods ended December 31, 2018, December 31, 2019, and June 30, 2020 compared to the last twelve-months of the preceding twelve-month period increased by $64,543 (or $59,900 under Topic 605), $44,631 (or $53,497 under Topic 605), and $59,248 (or $66,782 under Topic 605), respectively. These increases were primarily due to growth in ARR during the prior and current periods, which is primarily the result of consistent performance in our account retention rate and in our recurring revenues dollar-based net retention rate, as well as additional recurring revenues resulting from new accounts and acquisitions. For the twelve months ended December 31, 2019, 86% of our total revenues under Topic 606 (or 87% under Topic 605) were recurring revenues. For the twelve months ended June 30, 2020, 87% of our revenues were recurring revenues. Prospectively, we expect that this percentage is likely to remain consistent or modestly increase as we continue to target shifting episodic professional services revenues to subscriptions classified as recurring revenues.

Constant currency metrics. In reporting period-over-period results, we calculate the effects of foreign currency fluctuations and constant currency information by translating current period results using prior period average foreign currency exchange rates. Our definition of constant currency may differ from other companies reporting similarly named measures, and these constant currency performance measures should be viewed in addition to, and not as a substitute for, our operating performance measures calculated in accordance with U.S. GAAP.

ARR growth rate. Our ARR growth rate is the growth rate of our ARR, measured on a constant currency basis. Our ARR is defined as the sum of the annualized value of our portfolio of contracts that produce recurring revenue as of the last day of the reporting period, and the annualized value of the last three months of recognized revenues for our contractually recurring consumption-based software subscriptions with consumption measurement durations of less than one year. We believe that the last three months of recognized revenues, on an annualized basis, for our recurring software subscriptions with consumption measurement period durations of less than one year is a reasonable estimate of the annual revenues, given our consistently high retention rate and stability of usage under such subscriptions. ARR resulting from the annualization of recurring contracts with consumption measurement durations of less than one year, as a percentage of total ARR was 9%, 15%, and 25% for the years ended December 31, 2017, 2018, and 2019, respectively, and 18% and 29% for the twelve months ended June 30, 2019 and 2020, respectively.

ARR is inclusive of the ARR of acquired companies as of the date they are acquired. We believe that ARR and ARR growth are important metrics indicating the scale and growth of our business. Furthermore, we believe ARR, considered in connection with our account retention rate and our recurring revenues dollar-based net retention rate, is a leading indicator of revenue growth. Our ARR as of June 30, 2020 was $697,682, calculated using the spot foreign exchange rates as of June 30, 2020.

There was no impact to our ARR growth rate from acquisitions for the year ended December 31, 2017. Our ARR growth rate was favorably impacted from acquisitions by 3% and 1% for the years ended December 31, 2018 and 2019, respectively, and by 1% and 2% for the twelve months ended June 30, 2019 and 2020, respectively.

Account retention rate. Our account retention rate for any given twelve-month period is calculated using the average currency exchange rates for the prior period, as follows: the prior period recurring revenues from all accounts with recurring revenues in the current and prior period, divided by total recurring revenues from all accounts during the prior period. The account retention rate is calculated using revenues recognized pursuant to Topic 605 for all periods in order to enhance comparability during our transition to Topic 606 as we do not have all information available to us necessary to present account retention rate pursuant to Topic 606 for any period prior to January 1, 2019. Our account retention rate is an important indicator that provides insight into the long-term value of our account relationships and our ability to retain our account base. We believe that our consistent and high account retention rates illustrate our ability to retain and cultivate long-term relationships with our accounts.

Recurring revenues dollar-based net retention rate. Our recurring revenues dollar-based net retention rate is calculated using the average exchange rates for the prior period, as follows: the recurring revenues for the current period, including any growth or reductions from accounts with recurring revenue in the prior period ("existing accounts"), but excluding recurring revenues from any new accounts added during the current period, divided by the total recurring revenues from all accounts during the prior period. A period is defined as any trailing twelve months. The recurring revenues dollar-based net retention rate is calculated using revenues recognized pursuant to Topic 605 for all periods in order to enhance comparability during our transition to Topic 606 as we do not have all information available to us necessary to present recurring revenues dollar-based net retention rate pursuant to Topic 606 for any period prior to January 1, 2019. We believe our recurring revenues dollar-based net retention rate is a key indicator of our success in growing our revenues within our existing accounts. Given that for the twelve months ended December 31, 2019 recurring revenues represented 86% of our total revenues under Topic 606, this metric helps explain our revenue performance as primarily growth into existing accounts. We believe that our consistent and high recurring revenues dollar-based net retention rate illustrates our ability to consistently retain accounts and grow them.

As discussed above, we expect annual and trailing twelve-month recurring revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605 due to the annual, recurring nature of our subscription agreements. We, therefore, also expect that our account retention rate and our recurring revenue dollar-based net retention rate under Topic 606 will be comparable to such metrics under Topic 605. However, under Topic 606, the conversion of our existing subscription users to consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, as well as the term start date of new subscriptions, will introduce some volatility between annual, and trailing twelve-month periods and impact period over period comparability. See the section titled "Key Factors Impacting Comparability and Performance."

Our calculation of these metrics may not be comparable to other companies with similarly-titled metrics.

For additional information about our key metrics, see the sections titled "Selected Consolidated Financial Data—Key Business Metrics" and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Business Metrics."

Non-GAAP Financial Measures:

In addition to our results determined in accordance with U.S. GAAP, we believe the below non-GAAP measures are useful in evaluating our operating performance. We use the below non-GAAP financial information, collectively, to evaluate our ongoing operations and for internal planning and forecasting purposes.

	Year Ended December 31,		
	2017	2018	2019
Topic 605:[1]			
Adjusted EBITDA	$ 160,886	$ 171,768	$ 186,598
Adjusted Net Income	$ 115,389	$ 132,246	$ 135,471
Topic 606:[2]			
Adjusted EBITDA	$ 153,830	$ 171,120	$ 188,129
Adjusted Net Income	$ 109,398	$ 131,697	$ 135,049

(1) The Topic 605 amounts presented for the year ended December 31, 2019 give effect to revenue adjustments as if the adoption of Topic 606 had not occurred on January 1, 2019. For a reconciliation of the impact of adopting Topic 606 on our audited consolidated financial statements for the year ended December 31, 2019, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

(2) The Topic 606 unaudited amounts presented for the years ended December 31, 2017 and 2018 give effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2017 rather than January 1, 2019. For a reconciliation of the impact of adopting Topic 606 as if it had occurred as of January 1, 2017 on our audited consolidated statements of operations data for the years ended December 31, 2017 and 2018, see the section titled “Selected Consolidated Financial Data—Non-GAAP Financial Measures.”

	Six Months Ended June 30,	
	2019	2020
Topic 606:		
Adjusted EBITDA	$ 79,384	$ 115,506
Adjusted Net Income	$ 59,978	$ 89,203

For additional information, including the limitations of using non-GAAP financial measures, and reconciliations of the non-GAAP financial measures to the most directly comparable financial measures stated in accordance with U.S. GAAP, see the section titled “Selected Consolidated Financial Data—Non-GAAP Financial Measures.”

Consolidated Balance Sheet Data:

The following table presents summary consolidated balance sheet data as of June 30, 2020 on:

- an actual basis; and
- an as adjusted basis to (i) give effect to (A) 994,912 total shares of restricted Class B common stock and restricted stock units issued in July 2020 that will vest automatically upon the consummation of this offering, reduced by 32,238 of such restricted stock units that will be settled in cash, (B) approximately $14.9 million in additional stock-based compensation expense in connection with such July 2020 grant (excluding restricted stock units that will settle in cash) and (C) shares of Class B common stock to be sold in this offering following the exercise of stock options for such shares, at an assumed initial public offering price of the Class B common stock of $ per share, the midpoint of the range set forth on the cover page of this prospectus, as if such exercise had occurred on June 30, 2020 and (ii) reflect the payment of certain expenses in connection with this offering by the Company, including those paid on behalf of the selling stockholders and the underwriting discounts and commissions.

	June 30, 2020	
	Actual	As adjusted
Cash and cash equivalents	$ 125,516	$
Working capital, excluding deferred revenues	104,275	
Total assets	1,059,169	
Deferred revenues, current and long-term	186,456	186,456
Total debt	207,000	207,000
Total stockholders' equity[(1)]	379,744	

(1) As adjusted amount does not include $ of stock-based compensation expense for 32,238 restricted stock units that will vest automatically upon the consummation of this offering and be settled in cash at the initial public offering price.

RISK FACTORS

Investing in our Class B common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information in this prospectus, including the consolidated financial statements and the related notes and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations," before deciding whether to invest in shares of our Class B common stock. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business. If any of the following risks, or other risks and uncertainties that are not yet identified or that we currently think are immaterial, actually occur, our business, financial condition, results of operations and future prospects could be materially and adversely affected. In that event, the market price of our Class B common stock could decline, and you could lose part or all of your investment.

Risks Related to Our Business and Industry

Demand for our software solutions is subject to volatility in our accounts' underlying businesses, which includes infrastructure projects that typically have long timelines.

Our sales are based significantly on accounts' demand for software solutions in the following infrastructure sectors: (i) public works/utilities; (ii) industrial/resources; and (iii) commercial/facilities. Although these sectors are typically countercyclical to one another in nature, each periodically experiences economic declines and may be exacerbated by other economic factors. If participants in any of these sectors reduce spending or allocate future funding in a manner that results in fewer infrastructure improvement or expansion projects, then our accounts' underlying business may be impacted and demand for our software solutions may decrease or our rate of contract renewals may decrease. A prolonged decrease in such spending may harm our results of operations. Our accounts may request discounts or extended payment terms on new arrangements or seek to extend payment terms on existing arrangements due to lower levels of infrastructure spending or for other reasons, all of which may reduce revenue. We may not be able to adjust our operating expenses to offset such discounts or other arrangements because a substantial portion of our operating expenses is related to personnel, facilities and marketing programs. The level of personnel and related expenses may not be able to be adjusted quickly and is based, in significant part, on our expectations for future revenues and demand.

Infrastructure projects typically have long timelines and we may invest in building capacity based on expected demand for our software solutions that takes longer to develop than we expect or fails to develop at all. Additionally, government spending on infrastructure may decrease, which could decrease the demand for our software solutions and have a negative impact on our results of operations. We may not be successful in forecasting future demand levels and could fail to win business at the expected rates. If we underestimate the demand for our software solutions, we may be unable to fulfill the increased demand in a timely fashion or at all. If we overestimate the demand for our software solutions, we may incur additional expenses for which we would not have corresponding revenues, negatively impacting our results of operations.

The majority of our revenues and an increasing percentage of our operations are attributable to operations outside the United States, and our results of operations therefore may be materially affected by the legal, regulatory, social, political, economic and other risks of foreign operations.

Approximately 60%, 58% and 58% of our total revenues were from outside the United States in the years ended December 31, 2018 and 2019, and six months ended June 30, 2020, respectively. We anticipate that revenues from accounts outside the United States will continue to comprise a majority of our total revenues for the foreseeable future.

Our international revenues, including from emerging economies, are subject to general economic and political conditions in foreign markets and our revenues are impacted by the relative geographical and country mix of our revenues over time. These factors could adversely impact our international revenues and, consequently, our business. Our dependency on international revenues also makes us more exposed to global economic and political trends, which can negatively impact our financial results. Further, our operations outside the United States are subject to certain legal, regulatory, social, political, economic and other risks inherent in international business operations, including, without limitation:

- local product preference and product requirements;
- different consumer demand dynamics, which may make the products and services we offer less successful compared to the United States;
- more stringent regulations relating to privacy and data security and access to, or use of, commercial and personal information, such as the European Union's General Data Protection Regulation (the "GDPR"), and the Cybersecurity Law of the People's Republic of China;
- data privacy laws that require that account data be stored and processed in a designated territory or that certain transfers of account data outside of the country be notified to or registered with regulatory authorities;
- competition from local incumbents that understand the local market and may operate more effectively;
- trade protection measures, sanctions, quotas, embargoes, import and export licensing requirements, duties, tariffs or surcharges;
- changes in foreign regulatory requirements and tax laws;
- unexpected changes in foreign regulatory requirements;
- difficulty in establishing, staffing and managing non-U.S. operations;
- differing labor regulations where labor laws may be more advantageous to colleagues as compared to the United States, as well as increased labor costs;
- political and economic instability;
- fluctuating currency exchange rates, currency controls and inflation, recession or interest rate fluctuations;
- longer-term receivables than are typical in the United States and greater difficulty of collecting receivables in certain foreign jurisdictions;
- alleged or actual violations of anti-bribery and anti-corruption laws, rules and regulations in the foreign jurisdictions in which we do business;
- restrictions on the export of critical technology, software and services;
- complex tax and cash management issues;
- potentially adverse tax consequences, including the complexities of foreign value added tax systems, restrictions on the repatriation of earnings and changes in tax rates;
- the burdens of complying with a wide variety of foreign laws and different legal standards;
- longer sales and accounts receivable payment cycles in some countries;
- increased financial accounting and reporting burdens and complexities;
- terrorist attacks and security concerns in general;
- natural disasters and pandemics, including the ongoing COVID-19 pandemic;
- less rigorous or varied protection for intellectual property rights in some countries; and

- providing our solutions to accounts from different cultures, which may require us to adapt to sales practices, modify our solutions or products, and provide features necessary to effectively serve the local market.

The occurrence of any one of these risks could negatively affect our international business and, consequently, our business, financial condition and results of operations. Additionally, operating in international markets requires significant management attention and financial resources. We cannot be certain that the investment and additional resources required to operate in other countries will produce desired levels of revenue or profitability.

Recent and potential tariffs imposed by the U.S. government or a global trade war could increase the cost of our products and services and the cost of conducting our business, which could harm our business, financial condition and results of operations.

Recent and potential tariffs imposed by the U.S. government or a global trade war could increase the cost of our products and services and the cost of conducting our business, which could harm our business, financial condition and results of operations. The U.S. government has threatened substantial changes to trade agreements and has raised the possibility of imposing significant increases on tariffs on goods imported into the United States, particularly from China. The imposition of additional tariffs by the United States could result in the adoption of tariffs by other countries, leading to a global trade war. In addition, certain of these risks may be heightened as a result of changing political climates, which may also be exacerbated as a result of the COVID-19 pandemic. For example, throughout 2018 and 2019, the United States and China have been levying tariffs on their respective imports. Such tariffs could have a significant impact on our business and the business of our accounts. While we may attempt to renegotiate prices with suppliers or diversify our supply chain in response to tariffs, such efforts may not yield immediate results or may be ineffective. We might also consider increasing prices to the end consumer; however, this could reduce the competitiveness of our products and services and adversely affect revenue. If we fail to manage these dynamics successfully, our gross margins and profitability could be adversely affected.

In addition, increases in the extent to which global trade is limited by tariffs or other trade barriers could negatively affect decisions to invest in infrastructure projects due to decreasing confidence in future profitability of such projects. Such resulting decreases in infrastructure spending could negatively affect demand for our software solutions, which could harm our business, financial condition, and results of operations.

Global economic conditions may negatively impact our business, financial condition, and results of operations.

Our operations and performance depend significantly on foreign and domestic economic conditions. Uncertainty regarding economic conditions may negatively impact us as accounts defer spending or postpone infrastructure projects in response to tighter credit, higher unemployment, financial market volatility, government austerity programs, negative financial news, escalations of hostilities or the threat of hostilities, pandemics, declining valuations of investments and other factors. In addition, certain of our accounts' budgets may be constrained and they may be unable to procure our solutions at the same level as in prior periods. Our accounts' ability to pay for our software solutions and services may also be impaired, which may lead to an increase in our allowance for doubtful accounts and write-offs of accounts receivable. Since we are exposed to the majority of major world markets, uncertainty in any significant market may negatively impact our performance and results, particularly with respect to our largest geographic accounts. Our accounts include government entities, including the U.S. government, and if spending cuts impede the ability of governments to purchase our products and services, our revenues could decline. In addition, a number of our accounts rely, directly and indirectly, on government spending. We are unable to predict economic conditions or the likelihood of additional economic uncertainty arising in any of our key markets. Changes in economic conditions could result in us not meeting our revenue growth objectives, and could harm our cash flows, business, financial condition and results of operations.

Geopolitical trends toward nationalism and protectionism and the weakening or dissolution of international trade pacts may increase the cost of, or otherwise interfere with, conducting our business. These trends have increased levels of political and economic unpredictability globally, and may increase the volatility of global financial markets; the impact of such developments on the global economy remains uncertain. Political instability or adverse political developments, including, without limitation, as a result of or in connection with the upcoming 2020 United States presidential election and trade relations between the United States in China, in any of the countries in which we do business could harm our business, financial condition and results of operations.

Decreased investment by APAC, including China, may have a negative effect on our business.

Approximately 19%, 20% and 19% of our revenues in the years ended December 31, 2018 and 2019 and six months ended June 30, 2020, respectively, relate to infrastructure projects in APAC, including China. We cannot assure you that spending in these countries on infrastructure projects will continue at historical levels or increase in the future, or that demand for our software solutions in APAC in general will not be negatively affected by reductions in spending or other limitations.

The ongoing global coronavirus outbreak could materially and adversely affect our business

In March 2020, the World Health Organization declared a global pandemic related to the rapidly growing outbreak of the disease COVID-19, caused by a novel strain of coronavirus, SARS-CoV-2. The COVID-19 outbreak and certain preventative or protective actions that governments, businesses and individuals have taken in respect of COVID-19 have resulted in global business disruptions. The COVID-19 pandemic has adversely affected global economies, financial markets and the overall environment in which we do business, and the extent to which it may impact our future results of operations and overall financial performance remains uncertain. Our accounts' usage of our solutions slightly declined during the months of March and April when compared to levels from the same periods in 2019, and our revenue growth has also been modestly impacted, primarily due to lower growth of our non-recurring solutions including perpetual licenses and professional services engagements due to the COVID-19 pandemic. The duration and extent of the impact from the COVID-19 pandemic depends on future developments that cannot be accurately predicted at this time, such as the severity and transmission rate of the virus, the extent and effectiveness of containment actions and the impact of these and other factors on our colleagues, accounts, suppliers and partners. The COVID-19 pandemic may continue to materially affect the economies and financial markets in impacted countries and countries in which we operate, causing continued economic downturn that could decrease spending on infrastructure projects and adversely affect demand for our software solutions. Such impact on our business, operating results, cash flows and/or financial condition could be material. The COVID-19 pandemic may also have the effect of heightening other risks disclosed in these Risk Factors, such as, but not limited to, those related to supply chain interruptions and labor availability and cost.

The sales cycle for some of our solutions can be long and unpredictable and requires considerable time and expense, which may cause our results of operations to fluctuate.

The sales cycle for some of our solutions, from initial contact with a potential lead to contract execution and implementation, varies widely by brand and account, and can be lengthy. Some of our accounts undertake a significant evaluation process that frequently involves not only our solution, but also solutions of our competitors, which may result in extended sales cycles. Our sales efforts involve educating our accounts and prospective accounts about the use, technical capabilities and benefits of our solutions. We also put a significant amount of time into discussing with our accounts the value and importance of migrating to the latest versions of our software solutions. We have no assurance that the substantial time and money spent on our sales efforts will increase sales or cause existing accounts to migrate to the latest versions of our software solutions. Furthermore, our sales and marketing efforts in a given period may only result in sales in subsequent periods, or not at all. If we do not realize sales in the time period expected or at all, our business, financial condition, and results of operations could be adversely affected.

If we do not keep pace with technological changes, and effectively market our new product solutions, our solutions may become less competitive and our business may suffer.

We operate in an industry generally characterized by rapidly changing technology and frequent new software introductions, which can render existing software obsolete or unmarketable. A major factor in our future success will be our ability to anticipate technological changes and to develop and introduce, in a timely manner, enhancements to our existing software solutions, new software solutions and software solutions acquired in acquisitions to meet those changes. In particular, the software industry has undergone a transition from developing and selling perpetual licenses and on-premises products to cloud, mobile, and social applications. If we are unable to adapt our software solutions to the changing needs of our accounts and infrastructure engineers and to respond quickly to sector changes, our business, financial condition, results of operations, and cash flows could be harmed.

The introduction and marketing of new or enhanced software solutions require us to manage the transition from existing software to minimize disruption in account use and purchasing patterns. There can be no assurance that we will be successful in developing and marketing, on a timely basis, new software or enhancements, that our new software solutions will adequately address the changing needs of the marketplace or that we will successfully manage the transition from existing software solutions. In addition, our future software solutions may require a higher level of sales and support expertise. Any inability of our sales team, including our channel partners, to obtain this expertise and to sell the new software offerings effectively could have an adverse impact on our sales in future periods. Any of these problems may result in the loss of or delay in account acceptance, decreased demand for or usage of our software solutions, damage to our reputation, or increased service and warranty costs, any of which could harm our business, financial condition, results of operations, and cash flows.

We must act quickly, continuously, and with vision, given the rapidly changing expectations and technology advancements inherent in the software industry, the extensive and complex efforts required to create useful and widely accepted products and the rapid evolution of cloud computing, mobile devices, new computing platforms, and other technologies. Although we have articulated a strategy that we believe will fulfill these challenges, if we fail to execute properly on that strategy or adapt that strategy as market conditions evolve, we may fail to meet our accounts' expectations, fail to compete with our competitors' products and technology, and lose the confidence of our channel partners and colleagues, which in turn could adversely affect our business and financial performance.

Interruptions in the availability of server systems or communications with Internet, third-party hosting facilities or cloud-based services, or failure to maintain the security, confidentiality, accessibility, or integrity of data stored on such systems, could harm our business or impair the delivery of our managed services.

A significant portion of our software development personnel, source code, and computer equipment is located at operating facilities outside the United States. We also depend on data maintained on servers running third-party enterprise resource planning, account relationship management, and other business operations systems. We further rely upon a variety of Internet service providers, third-party hosting facilities, and cloud computing platform providers, such as Microsoft Azure, as well as local service providers to support project teams and users in most regions and countries throughout the world, particularly with respect to our cloud service solutions. Failure to maintain the security, confidentiality, accessibility, or integrity of data stored on such systems could damage our reputation in the market and our relationships with our accounts, cause us to lose revenue or market share, increase our service costs, cause us to incur substantial costs, cause us to lose accounts, subject us to liability for damages and divert our resources from other tasks, any one of which could adversely affect our business, financial condition, results of operations, and prospects. Any damage to, or failure of, such systems, or communications to and between such systems, could result in interruptions in our operations, managed services and software development activities. Such interruptions may reduce our revenue, delay billing, cause us to issue credits or pay penalties, cause accounts to terminate their subscriptions or adversely affect our attrition rates and our ability to attract new accounts. Our business would also be harmed if our accounts and potential accounts believe our products or services are unreliable.

If our security measures or those of our third-party cloud data hosts, cloud computing platform providers, or third-party service partners, are breached, and unauthorized access is obtained to an account's data, our data or our IT systems, our services may be perceived as not being secure, accounts may curtail or stop using our services, and we may incur significant legal and financial exposure and liabilities.

As we digitize and use cloud and web-based technologies to leverage account data to deliver a more complete account experience, we are exposed to increased security risks and the potential for unauthorized access to, or improper use of, our and our accounts' information. Certain of our services involve the storage and transmission of accounts' proprietary information, and security breaches could expose us to a risk of loss of this information, litigation and possible liability. Although we devote resources to maintaining our security and integrity, we may not prevent security incidents.

The risk of a security breach or disruption, particularly through cyber attack or cyber intrusion, including by computer hackers, foreign governments and cyber terrorists, has increased as the number, intensity, and sophistication of attempted attacks and intrusions from around the world have increased. These threats include but are not limited to identity theft, unauthorized access, domain name system attacks, wireless network attacks, viruses and worms, advanced persistent threat, application centric attacks, peer-to-peer attacks, phishing, backdoor trojans, and distributed denial of service attacks. Any of the foregoing could attack our accounts' data (including their employees' personal data), our data (including colleagues' personal data) or our IT systems. It is virtually impossible for us to entirely eliminate this risk. Like all software, our software is vulnerable to cyber attacks. The impact of cyber attacks could disrupt the proper functioning of our software solutions or services, cause errors in the output of our accounts' work, allow unauthorized access to sensitive, proprietary or confidential information of ours or our accounts, and other destructive outcomes.

Additionally, third parties may attempt to fraudulently induce colleagues or accounts into disclosing sensitive information such as user names, passwords or other information in order to gain access to our accounts' data, our data or our IT systems. Malicious third parties may also conduct attacks designed to temporarily deny accounts access to our services. Any security breach could result in a loss of confidence in the security of our products and services, damage our reputation, negatively impact our future sales, disrupt our business and lead to regulatory inquiry and legal liability.

We are exposed to fluctuations in currency exchange rates that could negatively impact our financial results and cash flows.

We sell our solutions in 172 countries, primarily through a direct sales force located throughout the world. Approximately 60%, 58% and 58% of our total revenues were from outside the United States in the years ended December 31, 2018 and 2019, and six months ended June 30, 2020, respectively. As we continue to expand our presence in international regions, the portion of our revenue, expenses, cash, accounts receivable and payment obligations denominated in foreign currencies continues to increase. Further, we anticipate that revenues from accounts outside of the United States will continue to comprise the majority of our total revenues for the foreseeable future.

Because of our international activities, we have revenue, expenses, cash, accounts receivable and payment obligations denominated in foreign currencies. In the years ended December 31, 2018 and 2019, and the six months ended June 30, 2020, 49%, 47% and 44%, respectively, of our total revenues were denominated in a currency other than the U.S. Dollar. As a result, we are subject to currency exchange risk. Our revenues and results of operations are adversely affected when the U.S. Dollar strengthens relative to other currencies and are positively affected when the U.S. Dollar weakens. As a result, changes in currency exchange rates will affect our financial position, results of operations and cash flows. In the event that there are economic declines in countries in which we conduct transactions, the resulting changes in currency exchange rates may affect our financial condition, results of operations, and cash flows. We are most impacted by movements in and among the Euro, British Pound, Australian Dollar, Canadian Dollar, and Chinese Yuan Renminbi. For example, the Chinese Yuan Renminbi has fluctuated against the U.S. Dollar, at times significantly and unpredictably, due to changes in foreign exchange for a wide variety of reasons, including actions instituted by China. Because of changes in trade between the United States and China and Renminbi internationalization, the China may in the future announce further changes to the exchange rate system, and we cannot assure you that the Renminbi will not appreciate or depreciate significantly in value against the U.S. Dollar in the future.

In addition, countries in which we operate may be classified as highly inflationary economies, requiring special accounting and financial reporting treatment for such operations, or such countries' currencies may be devalued, or both, which may harm our business, financial condition, and results of operations.

We cannot predict the impact of foreign currency fluctuations and we may not be successful in minimizing the risks of these fluctuations. In addition, the fluctuation and volatility of currencies, even when it increases our revenues or decreases our expenses, impacts our ability to accurately predict our future results and earnings.

We face intense competition.

We continue to experience competition across all markets for our software solutions and services. Our competitors include large, global, publicly-traded companies, small, specialty or geographically-focused firms and organizations who develop their own solutions internally. Some of our current and possible future competitors have greater financial, technical, sales, marketing and other resources than us, some specialize in developing niche software solutions and some have well-established relationships with our current and potential accounts. There is no assurance that we will be able to continue to compete effectively. Parties among our current or future strategic alliances may diminish or sever technical, software development and marketing relationships with us for competitive purposes. These competitive pressures may result in decreased sales volumes, price reductions, and/or increased operating costs, and could result in lower revenues, margins, and net income.

We may not be able to increase the number of new subscription-based accounts or cause existing accounts to renew their subscriptions, which could have a negative impact on our future revenues and results of operations.

We may not be able to increase demand for our subscription-based services in line with our growth strategy. Our accounts are not obligated to renew their subscriptions for our offerings, and they may elect not to renew. We cannot assure renewal rates, or the mix of subscriptions renewals. Account renewal rates may decline or fluctuate due to a number of factors, including offering pricing, competitive offerings, account satisfaction, and reductions in account spending levels or account activity due to economic downturns or financial markets uncertainty. If our accounts do not renew their subscriptions or if they renew on less favorable terms, our revenues may decline, which could harm our business, financial condition, and results of operations.

Our revenue recognition policy and other factors may create volatility in our financial results in any given period and make them difficult to predict.

As described in Note 3 to our consolidated financial statements for the years ended December 31, 2018 and 2019 included elsewhere in this prospectus, we adopted ASC 606 effective January 1, 2019. The new revenue guidance significantly impacts our timing of subscriptions and perpetual licenses revenue. Under previous revenue guidance, we historically maintained stable recurring revenue from the sale of software subscriptions and perpetual licenses. Under ASC 606, perpetual licenses and the license component of applicable subscriptions are recognized up front. The maintenance portion of subscription contracts continues to be recognized over the contract term.

The adoption of the new revenue recognition guidance creates the likelihood for subscriptions and licenses revenue volatility to increase across quarterly periods, particularly as compared to our results under the previous revenue recognition standard. Annual and trailing twelve-months subscription revenues will be more consistent between periods, and as compared to our results under the previous revenue recognition standard, due to the annual, recurring nature of our subscription agreements. However, annual results are still subject to volatility due to the timing of renewals between periods, timing of new sales contracts, changes in contract term and length, changes in perpetual license sales, and conversion of existing subscription users to other commercial offerings, particularly consumption-based offerings with consumption measurement durations of less than one year.

Our quarterly results of operations have fluctuated in the past and may fluctuate in the future, which could cause the price of our Class B common stock to decline or become volatile. These potential fluctuations can make our future results difficult to predict and cause our results of operations to fall below analyst or investor expectations.

Our quarterly results of operations have fluctuated in the past and may fluctuate in the future as a result of a variety of factors, many of which are outside of our control. If our quarterly results of operations or guidance fall below the expectations of research analysts or investors, the price of our Class B common stock could decline substantially. The following factors, among others, could cause fluctuations in our quarterly results of operations:

- our success in selling our subscription and services offerings;
- our ability to attract new accounts and retain existing accounts, including in connection with consolidation activities among, or management changes at, our accounts;
- our ability to accurately forecast revenues and appropriately plan our expenses;
- our ability to introduce new features, including ensuring inter-operational ability with our existing solutions and with third-party software and devices;

- our receiving milestone payments in respect of the projects for which our software is providing solutions;
- the actions of our competitors, including consolidation within the industry, pricing changes or the introduction of new solutions;
- our ability to effectively manage our growth;
- our ability to successfully manage any future acquisitions of businesses, solutions or technologies;
- the timing and cost of developing or acquiring technologies or businesses;
- the timing, operating costs and capital expenditures related to the operation, maintenance and expansion of our business;
- service outages or security breaches and any related occurrences that could impact our reputation;
- the impact of worldwide economic, industry and market conditions, including disruptions in financial markets and the deterioration of the underlying economic conditions in some countries;
- trade protection measures, such as tariffs and duties, and import or export licensing requirements;
- fluctuations in currency exchange rates;
- changes in government regulation affecting our business; and
- costs associated with defending intellectual property infringement and other claims.

Our quarterly revenues and results of operations may vary in the future, and period-to-period comparisons of our results of operations may not be meaningful. Any one or more of the factors above may result in significant fluctuations in our quarterly results of operations. You should not rely on the results of one quarter as an indication of future performance.

The variability and unpredictability of our quarterly results of operations or other operating metrics could result in our failure to meet our expectations or those of analysts that cover us or investors with respect to revenues or other key metrics for a particular period. If we fail to meet or exceed such expectations for these or any other reasons, the market price of our Class B common stock could fall, and we could face costly lawsuits, including securities class action suits.

Failure to protect our intellectual property rights could impair our ability to protect our proprietary technology and our brand.

Our future success and competitive position depend in large part on our ability to protect our intellectual property and proprietary technologies. We rely on a combination of copyright, patent, trademark and trade secret laws, as well as confidentiality procedures and contractual restrictions, to secure and protect our intellectual property rights, all of which provide only limited protection and may not currently or in the future provide us with a competitive advantage. Patents or trademarks may not issue from any of our pending or future patent or trademark applications. Patents or trademarks that do issue from such applications may not give us the protection that we seek, and such patents or trademarks may be challenged, invalidated, or circumvented. Any patents or trademarks that may issue in the future from our pending or future patent and trademark applications may not provide sufficiently broad protection and may not be enforceable in actions against alleged infringers.

The steps we take may not be adequate to protect our technologies and intellectual property, our patent and trademark applications may not lead to issued patents or registered trademarks, others may develop or patent similar or superior technologies or solutions, and our patents, trademarks, and other intellectual property may be challenged, invalidated, designed around or circumvented by others. Furthermore, effective copyright, patent, trademark and trade secret protection may not be available in every country in which our solutions are available or where we do business.

The steps we have taken, and will take, may not prevent unauthorized use, reverse engineering, or misappropriation of our technologies and we may not be able to detect any of the foregoing. Others may independently develop technologies that infringe on our intellectual property rights. In addition, we cannot control the use of our open source components, which could allow third parties to create products or solutions that compete with our offerings or that contain errors, defects or other performance problems that could hurt our reputation and reduce

the adoption of our solutions in new and existing accounts. Defending and enforcing our intellectual property rights may result in litigation or other contentious actions, any such litigation may not be successful, and even if successful, such litigation can be costly and divert management attention and resources. Further, if we are unsuccessful in asserting our intellectual property rights, an adverse decision could place limitations on the scope of our rights. If our efforts to protect our technologies and intellectual property are inadequate, the value of these intangible assets may be diminished and competitors may be able to replicate our solutions and methods of operations. Any of these events could harm our business, financial condition, and results of operations.

Although copyright protection is available for works of authorship such as computer code, we primarily rely on trade secrets laws to protect our proprietary software code, and have chosen not to register copyrights for the code. Under the United States Copyright Act, copyrights must be registered before the copyright owner may bring an infringement suit in the United States, and if a copyright is not registered within three months of publication of the underlying work, there are limitations on the damages that the copyright owner may be awarded for infringement. Accordingly, because we have chosen not to register the copyrights in our software, the causes of action, remedies and damages available to us in an enforcement action may be limited.

Consolidation among our accounts and other enterprises in the markets in which we operate may result in loss of business.

It is likely that some of our existing accounts will consolidate, be acquired or experience a change in management, which could lead to a decrease in the size of our account base. We expect consolidation among our accounts as they attempt to strengthen or maintain their market positions. If two or more of our accounts consolidate, they may also wish to consolidate the software solutions and services that we provide to them. If an existing account is acquired by another company that uses the solutions of one of our competitors, we may lose business in that account to our competitor. In addition, if an account experiences a change in management, the new management team may be accustomed to the software of one of our competitors, and we could lose that account. Any such consolidation, acquisition or management change could lead to pricing pressure, erosion of our margins, loss of accounts and loss of market share, all of which could harm our business, financial condition, and results of operations.

We have in the past and expect to continue in the future to seek to grow our business through acquisitions of or investments in new or complementary businesses, software solutions or technologies, and the failure to manage acquisitions or investments, or the failure to integrate them with our existing platform and business, could harm us.

Since our founding, we have strategically acquired and integrated numerous software assets and businesses. We may, however, be unable to identify suitable acquisition candidates in the future or, if suitable candidates are identified, we may be unable to complete the business combination on commercially acceptable terms. The process of exploring and pursuing acquisition opportunities may result in devotion of significant management and financial resources.

Even if we are able to consummate acquisitions that we believe will be successful, these transactions present many risks including, among others:

- failing to achieve anticipated synergies and revenue increases;
- difficulty incorporating and integrating the acquired technologies or software solutions with our offerings, and existing applications;
- difficulties managing an acquired company’s technologies or lines of business or entering new markets where we have limited prior experience or where competitors may have stronger market positions;
- maintaining the quality standards that are consistent with our brand and reputation;
- difficulty in coordinating, establishing or expanding sales, distribution and marketing functions, as necessary;
- disruption of our ongoing business and diversion of management’s attention to transition or integration issues;

- the potential that due diligence of the acquired business or product does not identify significant problems;
- exposure to litigation or other claims in connection with, or inheritance of claims or litigation risk as a result of, an acquisition, including but not limited to, claims from terminated colleagues, accounts, or other third parties;
- unanticipated and unknown liabilities, including for intellectual property infringement;
- increases in our interest expense, leverage and debt service requirements if we incur additional debt to pay for an acquisition;
- if we were to issue a significant amount of equity securities in connection with future acquisitions, dilution to existing stockholders and potential decreases in earnings per share;
- the loss of key colleagues, accounts and channel partners of ours or of the acquired company; and
- difficulties implementing and maintaining sufficient controls, policies and procedures over the systems, software and processes of the acquired company.

We may also incur unanticipated costs, expenses or other liabilities as a result of an acquisition target's violation of applicable laws, such as the Foreign Corrupt Practices Act ("FCPA") or similar worldwide anti-bribery and anti-corruption laws in foreign jurisdictions, as well as data security and privacy laws such as the GDPR. If we do not achieve the anticipated benefits of our acquisitions as rapidly or to the extent anticipated by management and financial or industry analysts, or if we are subject to unanticipated costs, expenses or other liabilities in connection with our acquisitions, there could be an adverse effect on our stock price, business, financial position, results of operations or cash flows.

We may not be successful in overcoming such risks, and such acquisitions may negatively impact our business. In addition, such acquisitions may contribute to potential fluctuations in our quarterly financial results. These fluctuations could arise from transaction-related costs and charges associated with eliminating redundant expenses or write-offs of impaired assets recorded in connection with acquisitions. These costs or charges could negatively impact our financial results for a given period, cause quarter to quarter variability in our financial results or negatively impact our financial results for several future periods.

Increasingly stringent and growing data protection and privacy laws with respect to cloud computing, cross-border data transfer restrictions and other restrictions may apply to our business and non-compliance with such rules may limit the use and adoption of our services and adversely affect our business.

As a global software and service provider, we collect and process personal data and other data from our users and prospective users. We use this information to provide solutions and applications to our accounts, to validate user identity, to fulfill contractual duties and administer billing and support, to expand and improve our business, and to communicate and recommend products and services through our marketing and advertising efforts. We may also share accounts' personal data with certain third parties as described in the privacy policy provided to each account. As a result, we are required to comply with local laws and regulations, including data protection requirements in the countries where we do business.

Globally, new and evolving regulations regarding data protection and privacy and other standards governing the collection, processing, storage and use of personal data impose additional burdens for us due to increasing compliance standards that could restrict the use and adoption of our solutions and applications (in particular cloud services).

We have significant business operations in the European Union ("E.U.") and European Economic Area ("EEA"), where the GDPR went into effect on May 25, 2018. The GDPR harmonized data protection regulations across the E.U. and EEA, implementing stringent requirements for the protection of E.U. and EEA individuals' ("data subjects") personal data. These requirements include expanded requirements for our users as E.U. and EEA data subjects, new obligations on us as data controllers and processors, and mandatory breach notification to affected individuals and data protection supervisory authorities. Non-compliance with GDPR could result in fines and penalties up to the greater of €20 million or 4% of global turnover for the preceding financial year. Moreover, individuals can claim damages resulting from infringement of the GDPR. As a result of the GDPR, as a personal data processor for our business-to-business accounts we must commit to detailed contractual obligations, including to ensure we only process such data on our accounts' instructions, keep it secure, require our sub-processors to commit to similar commitments, delete data when the contract ends and let our accounts audit our compliance.

In addition, E.U. and EEA data protection rules regulate the transfers of E.U. and EEA individuals' personal data to other countries that have been deemed by the European Commission not to provide adequate protection to personal data. The United States is not deemed to have adequate laws to protect personal data. We had relied upon the E.U.-U.S. Privacy Shield program to legitimize certain transfers of personal data from the E.U. and EEA to the United States. However, on July 16, 2020, the European Court of Justice ("ECJ") invalidated the E.U.-U.S. Privacy Shield program that we (along with thousands of other companies) have used to transfer data from the E.U. and EEA to the United States in compliance with GDPR. As a result of this decision, companies like us that previously relied upon Privacy Shield will be required to use another GDPR-approved method to legitimize transfers of personal data to the U.S. and other third countries in compliance with the GDPR. Until the remaining legal uncertainties regarding how to legally continue these transfers are settled, we will continue to face uncertainty as to whether our efforts to comply with our obligations under European privacy laws will be sufficient. Our accounts may view alternative data transfer mechanisms as being too costly, too burdensome, too legally uncertain or otherwise objectionable and therefore decide not to do business with us. For example, some of our accounts or potential accounts in the E.U. may require their vendors to host all personal data within the E.U. and may decide to do business with one of our competitors who hosts personal data within the E.U. instead of doing business with us. This and other future developments regarding the flow of data across borders could increase the cost and complexity of delivering our products and services in some markets and may lead to governmental enforcement actions, litigation, fines and penalties or adverse publicity, which could have an adverse effect on our reputation and business.

Further, laws such as the E.U.'s Privacy and Electronic Communications Directive 2002 ("ePrivacy Directive"), national legislation across the E.U. implementing the ePrivacy Directive and the proposed ePrivacy Regulation are increasingly aimed at the use of personal data for marketing purposes, and the tracking of individuals' online activities. These existing or proposed laws and regulations are subject to differing interpretations and may be inconsistent among jurisdictions and member states. These and other requirements may have a negative effect on businesses, including ours, that collect and use online usage information for consumer acquisition and marketing. As the text of the ePrivacy Regulation is still under development, and as further guidance is issued and interpretation of both the ePrivacy Regulation and GDPR develop, we could incur costs to comply with these regulations.

In addition, despite the enactment of the UK Data Protection Act, which substantially implements the GDPR and became effective in May 2018, it remains unclear exactly how the withdrawal of the United Kingdom from the European Union will affect transborder data flows, regulators' jurisdiction over our business, and other matters related to how we do business and how we comply with applicable data protection laws. Accordingly, we cannot predict the additional expense, impact on revenue, or other business impact that may stem from the United Kingdom's withdrawal from the European Union at this time.

In the Asia-Pacific region, where we have significant business operations, changes in privacy and cybersecurity regulation, some of which is similar to changes effected by the GDPR, have come into effect in 2018 and 2019, and similar significant regulatory changes are expected across the Asia-Pacific region in the future. These changes introduce more stringent requirements, including that we register our data processing activities in certain jurisdictions, appoint local representatives in-country, restrict the cross-border transfer of personal, confidential and commercially sensitive information in some cases, provide expanded disclosures to tell our accounts about how we use their personal information, and obtain detailed consents from accounts to processing of personal information. There are also increased rights for accounts to access, control and delete their personal information. In addition, there are mandatory data breach notification requirements that differ depending on the jurisdiction as well as increases to penalties and expanded enforcement powers for regulators.

We also expect that there will continue to be new proposed laws, regulations and industry standards concerning privacy, data protection and information security in the United States, the E.U., the EEA, and other jurisdictions, and we cannot yet determine the impact such future laws, regulations and standards may have on our business. For example, in June 2018 California enacted the California Consumer Privacy Act (the "CCPA"), which took effect on January 1, 2020. The CCPA broadly defines personal information, gives California residents expanded privacy rights and protections and provides for civil penalties for violations and a private right of action for data breaches. In addition to government activity, privacy advocacy groups and technology and other industries are considering various new, additional or different self-regulatory standards that may place additional burdens on us. Future laws, regulations, standards and other obligations, and changes in the interpretation of existing laws, regulations, standards and other obligations could impair our ability to collect, use or disclose personally identifiable information, increase our costs and impair our ability to maintain and grow our account base and increase our revenue. New laws, amendments to or re-interpretations of existing laws and regulations, industry standards, contractual obligations and other obligations may require us to incur additional costs and restrict our business operations. Such laws and regulations may require companies to implement privacy and security policies, permit users to access, correct and delete personal data stored or maintained by such companies, inform individuals of security breaches that affect their personal data, and, in some cases, obtain individuals' consent to use personal data for certain purposes. If we, or the third parties on which we rely, fail to comply with federal, state and international data privacy laws and regulations, our ability to successfully operate our business and pursue our business goals could be harmed.

Our failure to comply with applicable laws and regulations, or to protect such data, could result in enforcement action against us, including fines and public censure, claims for damages by accounts and other affected individuals, damage to our reputation and loss of goodwill (both in relation to existing accounts and prospective accounts), any of which could harm our business, financial condition, and results of operations.

Around the world, there are numerous lawsuits in process against various technology companies that process personal data. If those lawsuits are successful, it could increase the likelihood that our company may be exposed to liability for our own policies and practices concerning the processing of personal data and could hurt our business.

In addition to government activity, privacy advocacy and other industry groups have established or may establish new self-regulatory standards that may place additional burdens on us. Our accounts expect us to meet voluntary certification or other standards established by third parties or imposed by the accounts themselves. If we are unable to maintain these certifications or meet these standards, it could adversely affect our ability to provide our solutions to certain accounts and could harm our business. Further, if we were to experience a breach of systems compromising our accounts' sensitive data, our brand and reputation could be adversely affected, use of our software solutions and services could decrease, and we could be exposed to a risk of loss, litigation, and regulatory proceedings.

The costs of compliance with and other burdens imposed by laws, regulations and standards may limit the use and adoption of our services and reduce overall demand for it, or lead to significant fines, penalties or liabilities for any noncompliance.

Furthermore, concerns regarding data privacy may cause our accounts' customers to resist providing the data necessary to allow our accounts to use our services effectively. Even the perception that the privacy of personal information is not satisfactorily protected or does not meet regulatory requirements could inhibit sales of our software solutions or services, and could limit adoption of our cloud-based solutions.

We depend on our senior management team and other key personnel, and we could be subject to substantial risk of loss if any of them terminate their relationship with us.

Our success depends upon the continued services of our key personnel, including the Bentleys. The Bentleys and each of our other executive officers, key technical personnel, and colleagues could terminate his or her relationship with us at any time. Failure to effectively implement our succession planning efforts and to ensure effective transfers of knowledge and smooth transitions involving key personnel could disrupt or adversely affect our business and results of operations. Additionally, the Bentleys and most of our senior management team and other key personnel are not subject to employment or other agreements containing non-compete provisions. Accordingly, the adverse effect resulting from the loss of certain key personnel could be compounded by our inability to prevent them from competing with us. Further, we do not maintain key person insurance on any of our senior management team or other key personnel in the event of their death or extended incapacity. The loss of any of our senior executives might significantly delay or prevent the achievement of our business objectives and could harm our business and account relationships.

If we are not successful in attracting, integrating and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

Our ability to establish and maintain a position of technology leadership in the highly competitive software market depends in large part upon our ability to attract, integrate and retain highly skilled engineering and development personnel in the United States and internationally. The market for this talent is highly competitive, and our recruiting efforts are widespread and conducted in varying hiring climates throughout the world. Due to restrictive immigration laws in the United States, we are also sometimes limited in our ability to integrate our international colleagues to locations where their skills may be particularly well-suited. If we are not successful in recruiting and retaining key personnel or integrating our personnel effectively, our business, reputation and results of operations could be adversely affected.

Quality problems, defects, errors, failures, or vulnerabilities in our software solutions or services could harm our reputation and adversely affect our business, financial condition, results of operations, and prospects.

Our solutions are, in some cases, highly complex and incorporate advanced software technologies that we attempt to make interoperable with the products of other software providers. Despite testing prior to release, our software may contain undetected defects or errors. Further, the combined use of our software with those of other software providers may cause errors or failures, or it may expose undetected defects, errors or failures in our software. These defects, errors, or failures could affect software performance and damage the businesses of our accounts as well as delay the development or release of new software or new versions of software. Further, we cannot guarantee that all of our accounts are using the latest versions of our software solutions with enhanced security features, and may be more vulnerable to cyber attacks. Allegations of unsatisfactory performance in any of these situations could damage our reputation in the market and our relationships with our accounts, cause us to lose revenue or market share, increase our service costs, cause us to incur substantial costs in analyzing, correcting or redesigning the software, cause us to lose accounts, subject us to liability for damages and divert our resources from other tasks, any one of which could adversely affect our business, financial condition, results of operations, and prospects. We may also be required to provide full replacements or refunds for such defective software. We cannot assure you that such remediation would not harm our business, financial condition, results of operations, and prospects.

Our business, financial condition, results of operations, and prospects may be harmed if we are unable to cross-sell our solutions.

A significant component of our growth strategy is to increase the cross-selling of our solutions to current and future accounts, however, we may not be successful in doing so if our accounts find our additional solutions to be unnecessary or unattractive. We have invested, and intend to continue to invest, significant resources in developing and acquiring additional solutions, which resources may not be recovered if we are unable to successfully cross-sell these solutions to accounts using our existing solutions. Any failure to sell additional solutions to current and future accounts could harm our business, financial condition, results of operations, and prospects.

We license third-party technologies for the development of certain of our software solutions, and, in some instances, we incorporate third-party technologies, including open source software, into our software solutions. If we fail to maintain these licenses or are unable to secure alternative licenses on reasonable terms, our business could be adversely affected.

We license third-party technologies to develop certain of our products, and, in some cases, we incorporate third-party technologies into our own software solutions, including technologies owned by our competitors. If we were to seek to expand the scope of this activity in the future, we could be required to obtain additional licenses and enter into long-term arrangements with third parties on whose technology we could become substantially dependent.

If we are unable to use or license these third-party technologies on reasonable terms, including commercially justifiable royalty rates, or if these technologies fail to operate properly or be appropriately supported, maintained or enhanced, we may not be able to secure alternatives in a timely manner and our ability to develop and commercialize our own software solutions could be adversely impacted. In addition, licensed technology may be subject to claims that it infringes others' intellectual property rights, and we may lose access to or have restrictions placed on our use of the licensed technology.

Furthermore, we are unable to predict whether future license agreements and arrangements with third parties can be obtained, and, if obtained, whether they can be renewed on acceptable terms, or at all. If we become substantially dependent upon any such third-party technology and we are unable to successfully license it, we may not be able to develop or commercialize our software solutions in a timely manner or at all. Any of the foregoing could adversely impact our business and results of operations.

We also incorporate open source software into our products. While we have attempted not to use open source code in a manner which could adversely impact our proprietary code, the terms of many open source licenses have not been interpreted by U.S. courts, and there is a risk that such licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to market or sell our products or to develop new products. In such event, we could be required to seek licenses from third-parties in order to continue offering our products, to disclose and offer royalty-free licenses to our own source code, to re-engineer our products, or to discontinue the sale of our products in the event re-engineering cannot be accomplished on a timely basis, any of which could adversely impact our business and results of operations.

As a result of our strategy of strategic partnerships with other companies for product development, our product delivery schedules could be adversely affected if we experience difficulties with our product development partners.

We have strategic partnerships with certain independent firms and contractors to perform some of our product development activities. We believe our strategic partnerships allow us to, among other things, achieve efficiencies in developing new products and maintaining and enhancing existing product offerings. Our strategic partnerships create a dependency on such independent developers. Independent developers, including those who currently develop solutions for us in the United States and throughout the world, may not be able or willing to provide development support to us in the future. In addition, use of development resources through consulting relationships, particularly in non-U.S. jurisdictions with developing legal systems, may be adversely impacted by, and expose us to risks relating to, evolving employment, export and intellectual property laws. These risks could, among other things, expose our intellectual property to misappropriation and result in disruptions to product delivery schedules, which in turn could harm our business, financial condition, and results of operations.

The United Kingdom's withdrawal from the European Union may have a negative effect on global economic conditions, financial markets and our business.

The United Kingdom's withdrawal from the European Union ("Brexit") has created political and economic uncertainty, particularly in the United Kingdom and the European Union, and this uncertainty may last for years. Demand for our software solutions or services could be affected by the impact of Brexit. For example, while we have invoiced our U.K.-based accounts and operated our business within the United Kingdom through our U.K.-based subsidiary since the fourth quarter of 2018 to manage risks posed to our business and operations by Brexit, Brexit may cause delays in purchasing decisions by our potential and current accounts affected by this transition and there is considerable uncertainty as to when the long-term nature of the United Kingdom's relationship with the European Union will be agreed and implemented and what the terms of that relationship will be. The final terms of this exit by the United Kingdom from the European Union may result in new regulatory and cost challenges to our U.K. and

global operations. In addition, our business and our channel partners' businesses could be negatively affected by new trade agreements between the United Kingdom and other countries, including the United States and by the possible imposition of trade or other regulatory barriers in the United Kingdom. The unresolved final terms of Brexit have also created uncertainty with regard to the regulation of data protection in the United Kingdom. For example, the UK Data Protection Act, which substantially implements the GDPR, became effective in May 2018. It remains unclear, however, how United Kingdom data protection laws or regulations will develop and be interpreted in the medium to longer term, how data transfers to and from the United Kingdom will be regulated, and how those regulations may differ from those in the European Union. Depending on the terms reached regarding any exit from the European Union, it is possible that there may be adverse practical or operational implications on our business. Further, the United Kingdom's exit from the European Union may create increased compliance costs and an uncertain regulatory landscape for offering equity-based incentives to our employees in the United Kingdom. If we are unable to maintain equity-based incentive programs for our employees in the United Kingdom due to the departure of the United Kingdom from the European Union, our business in the United Kingdom may suffer and we may face legal claims from employees in the United Kingdom to whom we previously offered equity-based incentive programs.

There are significant costs and restrictions associated with the repatriation of cash from our non-U.S. operations.

Our cash and cash equivalents balances are concentrated in a few locations around the world, with approximately 98% of those balances held outside of the United States as of December 31, 2019. Cash repatriation restrictions may limit our ability to repatriate cash held by our foreign subsidiaries. Additionally, the repatriation of cash held by our foreign subsidiaries may result in adverse tax consequences. Any repatriation of cash may be restricted or may result in our incurring substantial costs. As a result, we may be required to seek sources of cash to fund our operations, including through the issuance of equity securities, which may be dilutive to existing stockholders, or by incurring additional indebtedness. There can be no assurance that we will be able to secure sources of financing on terms favorable to us, or at all.

Assertions by third parties of infringement or other violations by us of their intellectual property rights could result in significant costs and harm our business and results of operations.

Vigorous protection and pursuit of intellectual property rights has resulted in protracted and expensive litigation for many companies in our industry. Although claims of this kind have not materially affected our business to date, there can be no assurance such claims will not arise in the future. Any claims or proceedings against us, regardless of whether meritorious, could be time consuming, result in costly litigation, require significant amounts of management time, result in the diversion of significant operational resources, or require us to enter into royalty or licensing agreements, any of which could harm our business, financial condition, and results of operations.

Intellectual property lawsuits are subject to inherent uncertainties due to the complexity of the technical issues involved, and we cannot be certain that we will be successful in defending ourselves against intellectual property claims. In addition, we may not be able to effectively use our intellectual property portfolio to assert defenses or counterclaims in response to copyright, patent and trademark infringement claims or litigation, as well as claims for trade secret misappropriation and unfair competition, brought against us by third parties. Further, litigation may involve patent holding companies or other adverse patent owners who have no relevant products and against whom our patent portfolio may provide little or no deterrence.

Many potential litigants have the capability to dedicate substantially greater resources to enforce their intellectual property rights and to defend claims that may be brought against them. Furthermore, a successful claimant could secure a judgment that requires us to pay substantial damages or prevents us from distributing certain solutions or performing certain services. We might also be required to seek a license and pay royalties for the use of such intellectual property, which may not be available on commercially acceptable terms or at all. Alternatively, we may be required to develop non-infringing technology, which could require significant effort and expense and may ultimately not be successful.

If our solutions infringe on the intellectual property rights of others, we may be required to indemnify our accounts for any damages they suffer.

We generally indemnify our accounts with respect to infringement by our products of the proprietary rights of third parties. Third parties may assert infringement claims against our accounts. These claims may require us to initiate or defend protracted and costly litigation on behalf of our accounts, regardless of the merits of these claims. If any of these claims succeed, we may be forced to pay damages on behalf of our accounts or may be required to obtain licenses for the products they use. If we cannot obtain all necessary licenses on commercially reasonable terms, our accounts may stop using our products.

Pricing pressure from our competitors and our accounts may impact our ability to sell our software solutions at prices necessary to support our current business strategies.

The intense competition we face in the sales of our software solutions and services, and general economic and business conditions, can put pressure on us to lower our prices. If our competitors offer deep discounts on certain software solutions or services, or develop software solutions that the marketplace considers more valuable, we may need to lower prices or offer discounts or other favorable terms to compete successfully. Any such changes may reduce operating margins and could adversely affect results of operations. Any broad-based change to our prices and pricing policies could cause new software subscription and service revenues to decline or be delayed as our sales force implements and our accounts adjust to the new pricing policies.

Our credit agreement contains restrictive covenants that may limit our operating flexibility, and certain changes in ownership of equity interests in us by the Bentleys, their family members, and their family trusts constitutes an event of default.

The agreement governing the Credit Facility (as defined below) contains certain restrictive covenants that limit our ability to, among other things, incur indebtedness other than amounts under the Credit Facility and specified baskets, incur additional liens, merge or consolidate with other companies or consummate certain changes of control, enter into new lines of business, pay dividends to our stockholders, make investments in and acquire other businesses and transfer or dispose of assets. In certain circumstances, the agreement governing the Credit Facility may also limit our ability to transfer cash among our subsidiaries and between us and our subsidiaries, including our foreign subsidiaries. It also contains certain financial covenants, including a covenant requiring us not to permit the net leverage ratio to exceed 3.50 to 1.00 and a covenant requiring the fixed charge coverage ratio for any period of four consecutive fiscal quarters to not be less than 3.0 to 1.00, and financial reporting requirements. Borrowings under the Credit Facility are secured by a first priority security interest in substantially all of our U.S. assets and 65% of the stock our foreign subsidiaries owned by a party to the agreement governing the Credit Facility.

Further, if the Bentleys, their family members and their family trusts cease to collectively own equity interests in us representing at least a majority of the aggregate voting power of the Company, then such change in ownership will be an event of default under the agreement governing the Credit Facility and, among other things, the commitments under the Credit Facility may be terminated immediately and the outstanding loans and accrued interest may become due and payable immediately.

In addition, there is no guarantee that we will be able to generate sufficient cash flow or revenues to meet these financial covenants or pay the principal and interest on any debt. Furthermore, there is no guarantee that future working capital, borrowings or equity financing will be available to repay or refinance any debt. Any inability to make scheduled payments or meet the financial covenants in the agreement governing the Credit Facility would adversely affect our business.

The phase-out of LIBOR could affect interest rates under our Credit Facility.

On July 27, 2017, the United Kingdom's Financial Conduct Authority announced it intends to stop compelling banks to submit rates for the calculation of the London Interbank Offered Rate ("LIBOR") after 2021. It is unclear if LIBOR will cease to exist at that time, if a new method of calculating LIBOR will be established, or if an alternative reference rate will be established. The Federal Reserve Board and the Federal Reserve Bank of New York organized the Alternative Reference Rates Committee, which identified the Secured Overnight Financing Rate ("SOFR") as its preferred alternative to U.S. dollar LIBOR in derivatives and other financial contracts. We are not able to predict when LIBOR will cease to be available or if SOFR, or another alternative reference rate, attains market traction as a LIBOR replacement. LIBOR is used as the reference rate for Euro currency borrowings under our Credit Facility and as one of the alternatives for U.S. Dollar borrowings under our Credit Facility. If LIBOR ceases to exist, the administration agent under our Credit Facility has the authority to select a benchmark replacement index and adjustment margins and, as such, the interest rate on Euro currency borrowings under our Credit Facility may change. The new rate may not be as favorable as those in effect prior to any LIBOR phase-out. Furthermore, the transition process may result in delays in funding, higher interest expense, additional expenses, and increased volatility in markets for instruments that currently rely on LIBOR, all of which could negatively impact our interest expense, results of operations, and cash flow.

We may incur substantial additional debt, which could exacerbate the risks described above.

We may incur additional debt in the future. Although the agreement governing the Credit Facility contains restrictions on our ability to incur indebtedness, those restrictions are subject to a number of exceptions which permit us and our subsidiaries to incur substantial debt. Adding new debt to current debt levels could intensify the related risks that we and our subsidiaries now face. See the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources."

We may need to raise additional capital, which may not be available to us.

We may require substantial funds to operate our business and pursue our strategies. Our future liquidity and capital requirements are difficult to predict as they depend upon many factors, including the success of our solutions and competing technological and market developments. In the future, we may require additional capital to respond to business opportunities, challenges, acquisitions, a decline in the level of account prepayments or unforeseen circumstances and may determine to engage in equity or debt financings or enter into credit facilities for other reasons, and we may not be able to timely secure additional debt or equity financing on favorable terms, or at all. Any additional debt financing obtained by us in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. If we raise funds through issuances of equity, convertible debt securities or other securities convertible into equity, our existing stockholders could suffer significant dilution in their percentage ownership of our company. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to grow or support our business and to respond to business challenges could be significantly limited.

From time to time we realign or introduce new business initiatives, including reorganizing our sales and marketing, research and development and administrative functions; if we fail to successfully execute and manage these initiatives, our results of operations could be negatively impacted.

We rely heavily on our direct sales force. From time to time, we reorganize and make adjustments to our sales leadership and/or our sales force in response to such factors as management changes, performance issues, market opportunities and other considerations. These changes may result in a temporary lack of sales production and may adversely impact revenues in future quarters. Market acceptance of any new business or sales initiative is dependent on our ability to match our accounts' needs at the right time and price. There can be no assurance that we will not restructure our sales force in future periods or that the transition issues associated with such a restructuring will not occur. Similarly, reorganization of our research and development and administrative functions can disrupt our operations and negatively impact our results of operations if the execution is not managed properly. If any of our assumptions about expenses, revenues or revenue recognition principles from these initiatives proves incorrect, or our attempts to improve efficiency are not successful, our actual results may vary materially from those anticipated, and our financial results could be negatively impacted.

We may have to invest more resources in research and development than anticipated, which could increase our operating expenses and negatively affect our results of operations.

We devote substantial resources to research and development. New competitors, technological advances in the software industry or by competitors, our acquisitions, our entry into new markets, or other competitive factors may require us to invest significantly greater resources than we anticipate. If we are required to invest significantly greater resources than anticipated without a corresponding increase in revenue, our results of operations could decline. Additionally, our periodic research and development expenses may be independent of our level of revenue, which could negatively impact our financial results.

Further, technology for which we spend a significant amount of time and resources on in our research and development, such as our digital twin technology, may prove to be less marketable than we expect. There can be no guarantee that our research and development investments will result in products that create additional revenue.

A portion of our revenues are from sales by our channel partners, and we could be subject to loss or liability based on their actions.

Sales through our global network of independent, regional channel partners accounted for 9% and 8% of our revenues for the years ended December 31, 2018 and 2019, respectively. These channel partners sell our software solutions to smaller accounts, in geographic regions where we do not have a meaningful presence, and in niche markets where they have specialized industry and technical knowledge. Where we rely on channel partners, we may have reduced contact with ultimate users that purchase through such channel partners, thereby making it more difficult to establish brand awareness, ensure proper installation, service ongoing requirements, estimate demand and respond to the evolving needs of an account. Any of our channel partners may choose to terminate its relationship with us at any time. As a result, our ability to service the ultimate users who were interfacing with that channel partner may take time to develop as we divert resources to service those users directly or find a suitable alternative channel partner to continue the relationship. Any disruption in service may damage our reputation and business. In addition, our channel partners may be unable to meet their payment obligations to us, which would have a negative impact on our results of operations and revenues. Our channel partners may also not have loyalty to our brand and therefore may not be particularly motivated to sell our software solutions or services.

The use of channel partners could also subject us to lawsuits, potential liability and reputational harm if, for example, any channel partners misrepresent the functionality of our software solutions or services to accounts, fail to comply with their contractual obligations or violate laws or our corporate policies. Such actions may impact our ability to distribute our software solutions into certain regions and markets, and may have an adverse effect on our results of operations and cash flows.

Some of our solutions are complex, and accounts may experience difficulty in implementing, upgrading or otherwise achieving the benefits attributable to them.

Due to the scope and complexity of some of the solutions that we provide, our implementation cycle for them can be lengthy and unpredictable. Some solutions require configuration and integration with existing computer systems and applications of our accounts and their trading partners, which can be time-consuming and expensive for our accounts and can result in implementation delays. As a result, some accounts may have difficulty implementing those solutions successfully or otherwise achieving their expected benefits. Delayed or ineffective implementation or upgrades may limit our future sales opportunities, negatively affect revenue, result in account dissatisfaction and harm our reputation.

Determining our effective income tax rate is complex and subject to uncertainty.

We make significant estimates in determining our worldwide income tax provision. These estimates involve complex tax laws and regulations in a number of jurisdictions across our global operations and are subject to many transactions and calculations in which the ultimate tax outcome is uncertain. The final outcome of tax matters could be different than the estimates reflected in the historical income tax provision and related accruals. These differences could have a material impact on income tax expense and net income in the periods in which such determinations are made.

The amount of income tax we pay is subject to ongoing audits by federal, state and foreign tax authorities. These audits can often result in additional assessments, including interest and penalties. Our estimate for liabilities associated

with uncertain tax positions is highly judgmental and actual future outcomes may result in favorable or unfavorable adjustments to our estimated tax liabilities, including estimates for uncertain tax positions, in the period the assessments are made or resolved, audits are closed or when statutes of limitation on potential assessments expire. As a result, our effective tax rate may fluctuate significantly on a quarterly or annual basis.

The intended efficiency of our corporate structure depends on the application of the tax laws and regulations in the countries where we operate, and we may have exposure to additional tax liabilities or our effective tax rate could change, which could have a material impact on our financial condition and results of operations.

As a company with international operations, we are subject to income taxes, as well as non-income based taxes, in both the United States and various foreign jurisdictions. Currently, the majority of our revenues is generated from accounts located outside the United States, and a large portion of our assets are located outside the United States. We have designed our corporate structure, the manner in which we develop and use our intellectual property, and our intercompany transactions between our subsidiaries in a way that is intended to enhance our operational and financial efficiency and increase our overall profitability. United States income taxes and foreign withholding taxes have not been provided on undistributed earnings of non-U.S. subsidiaries to the extent those earnings are considered to be indefinitely reinvested in the operations of those subsidiaries. The application of the tax laws and regulations of various countries in which we operate and to our global operations is subject to interpretation. We also must operate our business in a manner consistent with our corporate structure to realize such efficiencies. The tax authorities of the countries in which we operate may challenge our methodologies for valuing developed technology or for transfer pricing. If, for one or more of these reasons, tax authorities determine that the manner in which we operate results in our business not achieving the intended tax consequences, our effective tax rate could increase and harm our financial condition and results of operations.

A change in the tax law in the jurisdictions in which we do business, including an increase in tax rates, an adverse change in the treatment of an item of income or expense, a decrease in tax rates in a jurisdiction in which we have significant deferred tax assets, or a new or different interpretation of applicable tax law, could result in a material increase in tax expense. The United States government and other governments are considering and may adopt tax law changes that significantly increase our worldwide tax liabilities. The U.S. Congress and other government legislatures and agencies in countries where we and our subsidiaries operate have focused on issues related to the taxation of multinational corporations. For example, in Ireland, where one of our significant subsidiaries is domiciled, tax authorities recently announced changes to the treatment of non-resident Irish entities. The changes are expected to take effect for existing non-resident Irish entities, such as ours, in 2021. These changes, and other prospective changes in the United States and other countries in which we and our subsidiaries operate, could increase our effective tax rate, and harm our financial condition and results of operations.

We are subject to legal proceedings and regulatory inquiries, and we may be named in additional legal proceedings or become involved in regulatory inquiries in the future, any of which may be costly, distracting to our core business and could result in an unfavorable outcome, or harm on our business, financial condition, results of operations, cash flows, or the trading price for our securities.

We are subject to various investigations, claims and legal proceedings that arise in the ordinary course of business, including commercial disputes, labor and employment matters, tax audits, alleged infringement of intellectual property rights and other matters. As the global economy has changed, our industry has seen an increase in litigation activity and regulatory inquiries. Like many other high technology companies, on a regular and ongoing basis, we receive inquiries from U.S. and foreign regulatory agencies regarding our business and our business practices, and the business practices of others in our industry. In the event that we are involved in significant disputes or are the subject of a formal action by a regulatory agency, we could be exposed to costly and time consuming legal proceedings that could result in any number of outcomes. Any claims or regulatory actions initiated by or against us, whether successful or not, could result in expensive costs of defense, costly damage awards, injunctive relief, increased costs of business, fines or orders to change certain business practices, significant dedication of management time, diversion of significant operational resources, or otherwise harm our business. In any of these cases, our financial results could be negatively impacted.

Failure to comply with the FCPA and similar anti-bribery and anti-corruption laws associated with our activities outside the United States could subject us to penalties and other adverse consequences.

The majority of our revenues are from jurisdictions outside of the United States. We are subject to the FCPA, which generally prohibits U.S. companies and their intermediaries from making payments to foreign officials for the purpose of directing, obtaining or keeping business, and requires companies to maintain reasonable books and records and a system of internal accounting controls. The FCPA applies to companies and individuals alike, including company directors, officers, employees and agents. Under the FCPA, U.S. companies may be held liable for corrupt actions taken by employees, strategic or local partners or other representatives. In addition, the government may seek to rely on a theory of successor liability and hold us responsible for FCPA violations committed by companies or associated with assets that we acquire.

In many foreign jurisdictions where we operate, particularly countries with developing economies, it may be a local custom for businesses to engage in practices that are prohibited by the FCPA or other similar laws and regulations. There can be no assurance that our colleagues, partners and agents, as well as those companies to which we outsource certain of our business operations, will not take actions in violation of the FCPA or our policies for which we may be ultimately held responsible. If we or our intermediaries fail to comply with the requirements of the FCPA or similar anti-bribery and anti-corruption legislation such as the United Kingdom Bribery Act and the China Unfair Competition law, governmental authorities in the United States and elsewhere could seek to impose civil and/or criminal fines and penalties, which could harm our business, financial conditions, and results of operations. We may also face collateral consequences such as debarment and the loss of our export privileges.

We are subject to governmental export and import controls that could impair our ability to compete in international markets or subject us to liability if we violate the controls.

Our offerings may be subject to U.S. export controls and economic sanctions laws and regulations that restrict the delivery of our solutions and services to certain locations, governments, and persons. While we have processes in place to prevent our offerings from being exported in violation of these laws, including obtaining authorizations as appropriate and screening against U.S. government lists of restricted and prohibited persons, we cannot guarantee that these processes will prevent all violations of export control and sanctions laws.

Further, if our channel partners fail to obtain appropriate import, export or re-export licenses or permits, we may also be adversely affected, for example, through reputational harm as well as other negative consequences including government investigations and penalties. Complying with export control and sanctions regulations for a particular sale may be time-consuming and may result in the delay or loss of sales opportunities.

Violations of U.S. sanctions or export control laws can result in fines, penalties, denial of export and trading privileges, and seizure of goods and assets. Other consequences include negative publicity and harm to business reputation, increased government scrutiny (including intrusive audits, and increased difficulty obtaining government licenses and approvals), and/or remedial compliance measures as a condition of settling government charges.

Our business may be significantly disrupted upon the occurrence of a catastrophic event.

Our business is highly automated and relies extensively on the availability of our network and data center infrastructure, our internal technology systems and our websites. We also rely on hosted computer services from third parties for services that we provide to our accounts and computer operations for our internal use. The failure of our systems or hosted computer services due to a catastrophic event, such as an earthquake, fire, flood, tsunami, weather event, pandemic, telecommunications failure, power failure, cyber attack, terrorism, or war, could adversely impact our business, financial condition, or results of operations. We have developed disaster recovery plans and maintain backup systems in order to reduce the potential impact of a catastrophic event, however there can be no assurance that these plans and systems would enable us to return to normal business operations. In addition, any such event could negatively impact a country or region in which we conduct business. This could in turn decrease that country’s or region’s demand for our products and services, thereby negatively impacting our financial results.

We may face exposure to product or professional liability claims that could cause us to be liable for damages.

The use of our software could lead to the filing of product liability claims against us were someone to allege that our software provided inaccurate or incomplete information at any stage of the infrastructure lifecycle or otherwise failed to perform according to specifications. In the event that accounts or third parties sustain property damage,

injury, death or other loss in connection with their use of our software or infrastructure for which our software solutions and services were used to engineer, we, along with others, may be sued, and whether or not we are ultimately determined to be liable, we may incur significant legal expenses, management's attention could be diverted from operations and market acceptance of our software could decrease. Our risk of exposure to litigation in these situations could rise as our software solutions and services are used for increasingly complex and high-profile infrastructure projects. Litigation could also impair our ability to obtain professional liability or product liability insurance or increase the cost of such insurance. These claims may be brought by individuals seeking relief on their own behalf or purporting to represent a class. In addition, product liability claims may be asserted against us in the future based on events we are not aware of at the present time.

The limitations of our liability included in our contracts with accounts may not be enforceable or may not otherwise protect us from liability for damages. Additionally, we may be subject to claims that are not explicitly covered by contract, such as a claim directly by a third party. There is no assurance that our insurance coverage will be adequate to cover incurred liabilities or that we will be able to obtain acceptable product and professional liability coverage in the future.

If the accounting estimates we make, and the assumptions on which we rely, in preparing our financial statements prove inaccurate, our actual results may be adversely affected.

Our financial statements have been prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and judgments about, among other things, taxes, revenue recognition, stock-based compensation costs, investments, contingent obligations, allowance for doubtful accounts and intangible assets. These estimates and judgments affect the reported amounts of our assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances and at the time they are made. If our estimates or the assumptions underlying them are not correct, actual results may differ materially from our estimates and we may need to, among other things, accrue additional charges that could adversely affect our results of operations, which in turn could adversely affect our stock price. In addition, new accounting pronouncements and interpretations of accounting pronouncements have occurred and may occur in the future that could adversely affect our reported financial results.

Changes in existing financial accounting standards or practices may harm our results of operations.

Changes in existing accounting rules or practices, new accounting pronouncements rules, or varying interpretations of current accounting pronouncements practice could have a significant, adverse effect on our results of operations or the manner in which we conduct our business. Further, such changes could potentially affect our reporting of transactions completed before such changes are effective.

U.S. GAAP is subject to interpretation by the Financial Accounting Standards Board ("FASB"), the SEC and various bodies formed to promulgate and interpret appropriate accounting principles. A change in these principles or interpretations could have a significant effect on our reported financial results, and could affect the reporting of transactions completed before the announcement of a change. In particular, in February 2016, the FASB issued ASC 842, *Leases*, which supersedes the lease accounting guidance in ASC 840, Leases. The core principle of ASC 842 requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. As an "emerging growth company," we are allowed under the JOBS Act to delay adoption of new or revised accounting pronouncements applicable to public companies until such pronouncements are made applicable to private companies. We have elected to take advantage of this extended transition period under the JOBS Act with respect to ASC 842, which resulted in ASC 842 becoming effective for us beginning on January 1, 2020. Any difficulties in implementing these pronouncements could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline and harm investors' confidence in us.

We are evaluating the impact of the adoption of ASC 842 and currently believe the most significant impact upon adoption will be the recognition of material right-of-use assets and lease liabilities on our consolidated balance sheets associated with operating leases. We do not believe this standard will have a material impact on our consolidated statements of operations data.

We are an "emerging growth company," and the reduced disclosure requirements applicable to "emerging growth companies" may make our Class B common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies," including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. Additionally, as an "emerging growth company" we are required to have only two years of audited financial statements and only two years of related selected financial data and Management's Discussion and Analysis of Financial Condition and Results of Operations disclosure. We may take advantage of these exemptions until we are no longer an "emerging growth company," which could be as long as five full fiscal years following the listing of our Class B common stock on The Nasdaq Global Select Market. We cannot predict if investors will find our Class B common stock less attractive because we will rely on these exemptions. If some investors find our Class B common stock less attractive as a result, there may be a less active trading market for our Class B common stock and the price of our Class B common stock may be more volatile.

We will remain an "emerging growth company" until the earliest to occur of: (i) the last day of the fiscal year in which we have more than $1.07 billion in annual revenue; (ii) the date we qualify as a "large accelerated filer," with at least $700 million of equity securities held by non-affiliates; (iii) the date on which we have issued, in any three-year period, more than $1.0 billion in non-convertible debt securities; and (iv) the last day of the fiscal year ending after the fifth anniversary of the completion of this offering.

Because we have elected under Section 107 of the JOBS Act to use the extended transition period with respect to complying with new or revised accounting standards, our financial statements may not be comparable to companies that comply with public company effective dates, making it more difficult for an investor to compare our results with other public companies.

Section 107 of the JOBS Act provides that an emerging growth company can use the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended (the "Securities Act") by Section 102(b)(1) of the JOBS Act, for complying with new or revised accounting standards. In other words, as an emerging growth company we can delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards would otherwise apply to private companies, which will result in less available information for our investors. We have elected to take advantage of the benefits of this extended transition period. As a result, our financial statements may not be comparable to those of companies that comply with public company effective dates.

Risks Related to the Ownership of Our Class B Common Stock

The share price of our Class B common stock may be volatile, and you may be unable to sell your shares at or above the offering price, if at all. Market volatility may affect the value of an investment in our Class B common stock and could subject us to litigation.

Technology stocks have historically experienced high levels of volatility. There has been no public market for our Class B common stock prior to this offering. The initial public offering price for the shares of our Class B common stock will be determined through negotiations between us and representatives of the underwriters and may not be indicative of prices that will prevail in the trading market. The market price of our Class B common stock could be subject to wide fluctuations in response to the risk factors listed in this prospectus, and others beyond our control, including:

- the number of shares of our Class B common stock publicly owned and available for trading (our "public float");
- limited "public float" in the hands of a small number of investors following this offering whose trading or lack of trading could result in a volatile market price for our Class B common stock, uncertain trading volume, negative pricing pressure on the price of our Class B common stock and an adverse impact on your ability to sell any Class B common stock that you may purchase;

- the high concentration of the ownership of our Class B common stock by a limited number of affiliated stockholders;
- overall performance of the equity markets and/or publicly-listed technology companies;
- actual or anticipated fluctuations in our financial condition and results of operations and other non-GAAP metrics;
- our actual or anticipated operating performance and the operating performance of our competitors;
- changes in the projected operational and financial results we provide to the public or our failure to meet those projections;
- addition or loss of significant accounts;
- changes in laws or regulations applicable to our software solutions or business;
- actual or anticipated changes in our growth rate relative to our competitors;
- announcements of technological innovations or new offerings by us or our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital-raising activities or commitments;
- any major change in our board of directors, management, or key personnel, including the Bentleys in particular;
- changes in our financial guidance or securities analysts' estimates of our financial performance, or our failure to meet the estimates or the expectations of investors;
- rumors and market speculation involving us or other companies in our industry;
- discussion of us or our stock price by the financial press and in online investor communities;
- changes in accounting principles;
- announcements related to litigation;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- sales or expected sales of our Class B common stock by us, and our officers, directors, and principal stockholders;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- the expiration of any contractual lock-up periods;
- general economic, political, industry and market conditions, including the impending presidential election in the United States in 2020;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business, including those related to data privacy and cyber security in the United States or globally; and
- other events or factors, including those resulting from war, incidents of terrorism, pandemics, or responses to these events.

Furthermore, the stock markets recently have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies, and technology companies in particular. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of our Class B common stock. If the market price of our Class B common stock after this offering does not exceed the initial public offering price, you may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future.

Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could harm our business.

There has been no public market for our Class B common stock prior to this offering, and you may not be able to resell our shares at or above the price you paid, or at all. In addition, the limited public float of our Class B common stock following this offering could adversely impact the trading price of our Class B common stock.

Prior to this offering, there has been no public market for our capital stock. We have applied to list our Class B common stock on The Nasdaq Global Select Market. However, we can give no assurances that The Nasdaq Global Select Market will grant our application for listing. If an active trading market for our Class B common stock does not develop after this offering, the market price and liquidity of our common stock will be materially and adversely affected. The initial public offering price for our Class B common stock will be determined by negotiations between us and the underwriters and may bear no relationship to the market price for our Class B common stock after this offering. The market price of our Class B common stock may decline below the initial public offering price.

In addition, the number of shares of our Class B common stock sold in this offering is relatively small compared to the total number of our outstanding shares of common stock, which will result in a limited number of shares of our Class B common stock publicly owned and available for trading, or a limited "public float." The limited "public float" of our Class B common stock following this offering could result in a limited number of shares that are available to be traded at any given time, thereby adversely impacting the liquidity, trading volume and trading price of our Class B common stock. These factors could have an adverse impact on your ability to sell any Class B common stock that you may purchase.

Following the completion of this offering, we intend to evaluate opportunities to undertake a primary offering of shares of our Class B common stock by the Company, subject to the lock-up agreement entered into with the underwriters in this offering, prevailing market conditions and applicable securities laws. We have not engaged in any formal discussions regarding any such offering and we have not undertaken any steps to pursue such an offering. There is no guarantee that we will undertake such an offering or that such an offering will be consummated within the anticipated timeframe. If we do not, or are otherwise unable to, complete such an offering, the continued limited public float for our Class B common stock could result in negative pricing pressure on, and increase volatility of, the trading price for our Class B common stock. In addition, if we issue shares of capital stock in a public offering following this offering, Siemens has the right to purchase, for the price per share used in such public offering, additional shares as are necessary so that Siemens' percentage ownership on a fully diluted basis at the time of such public offering, is unchanged as a result of such public offering. See "Certain Relationships and Related Party Transactions—Our Relationship with Siemens AG—Common Stock Purchase Agreement—Rights in a Public Offering."

If securities or industry analysts do not publish or cease publishing research or reports about us, our business or our market, or if they change their recommendations regarding our stock adversely, or if our actual results differ significantly from our guidance, our stock price and trading volume could decline.

The trading market for our Class B common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. If few securities analysts commence coverage of us, or if industry analysts cease coverage of us, the trading price for our Class B common stock could be negatively affected. If one or more of the analysts who cover us downgrade our Class B common stock or publish inaccurate or unfavorable research about our business, the price of our Class B common stock would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our Class B common stock could decrease, which might cause our Class B common stock price and trading volume to decline.

Although we have paid dividends in periods preceding this offering, there can be no assurance that we will pay dividends on our Class B common stock in the future. As a result, any return on investment may be limited to the value of our Class B common stock.

In 2019, we paid quarterly dividends of $0.025 per share of common stock, and in the first two quarters of 2020, we paid quarterly dividends of $0.03 per share of common stock. While we intend to continue paying quarterly dividends following the consummation of this offering, there can be no assurance that we will pay such dividends in the amounts described herein or at all in the future. Any determination to pay dividends in the future will be at the discretion of our board of directors. The payment of dividends on our Class B common stock is restricted by Delaware

law and the agreement governing the Credit Facility, and will, in all cases, depend on our earnings, financial condition, and other business and economic factors as our board of directors may consider relevant. If we do not pay dividends in future periods, our Class B common stock may be less valuable to you as an investor and investors must rely on sales of their Class B common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments. See the section titled "Dividend Policy" for more information.

Substantial blocks of our total outstanding shares may be sold into the market when the lock-up period ends. If there are substantial sales of shares of our Class B common stock, the price of our Class B common stock could decline.

The price of our Class B common stock could decline if there are substantial sales of our Class B common stock, particularly sales by our directors, executive officers, the selling stockholders, and other significant stockholders, if there is a perception that sales might occur or if there is a large number of shares of our Class B common stock available for sale. After this offering and after giving effect to 994,912 total shares of restricted Class B common stock and restricted stock units issued in July 2020 that will vest automatically upon the consummation of this offering, reduced by 32,238 of such restricted stock units that will be settled in cash, and shares of Class B common stock to be sold in this offering following the exercise of stock options for such shares, we will have outstanding shares of our Class B common stock and shares of our Class A common stock based on shares outstanding as of June 30, 2020. All of the shares of Class B common stock sold in this offering will be freely tradeable without restrictions or further registration under the Securities Act, except for any shares held by our affiliates as defined in Rule 144 under the Securities Act. A substantial portion of our shares of Class B common stock and Class A common stock, other than shares of Class B common stock issued in this offering, are subject to restrictions on resale because our directors, officers, the selling stockholders, and certain other stockholders have entered into lock-up agreements with the representatives of the underwriters. These shares will become available to be sold 181 days after the date of this prospectus, with earlier sales permitted at the discretion of Goldman Sachs. The lock-up restrictions in the lock-up agreements are more fully described in the sections titled "Shares Eligible for Future Sale" and "Underwriting." Shares held by directors, executive officers, and other affiliates will be subject to volume limitations under Rule 144 under the Securities Act. In addition, as of June 30, 2020, we had options outstanding that, if fully exercised, would result in the issuance of shares of Class B common stock. The shares of Class B common stock subject to outstanding options under our equity incentive plans and the shares reserved for future issuance under our equity incentive plans may become eligible for sale to the public, subject to certain legal and contractual limitations. The market price of the shares of our Class B common stock could decline as a result of the sale of a substantial number of our shares of common stock in the public market or the perception in the market that the holders of a large number of shares intend to sell their shares.

The dual class structure of our common stock has the effect of concentrating voting control with the Bentleys and their affiliates.

Upon the completion of this offering, our Class A common stock will have 29 votes per share, and our Class B common stock, which is the stock we are selling in this offering, will have one vote per share. The beneficial owners of our Class A common stock will together hold approximately % of the voting power of our outstanding capital stock following this offering. Moreover, as a result of the 29 to-one voting ratio between our Class A and Class B common stock, the Bentleys will continue to control a majority of the combined voting power of our common stock and therefore be able to control all matters submitted to our stockholders for approval, subject to the occurrence of certain events that would reduce the voting power of our Class A common stock or cause the conversion thereof. See the section titled "Description of Capital Stock." This concentrated control will limit or preclude your ability to influence corporate matters for the foreseeable future and may have the effect of delaying, deferring or preventing a change in control, impeding a merger, consolidation, takeover or other business combination involving us, or discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of our business, even if such a transaction would benefit other stockholders. The Bentleys may also have interests that differ from yours and may vote in a way with which you disagree and which may be adverse to your interests. Furthermore, upon the consummation of this offering, the Bentleys and their affiliates will be subject to a stockholders agreement, whereby the parties thereto agree to vote all their shares in an agreed upon manner. See the section titled "Certain Relationships and Related Party Transactions—Stockholders Agreement."

In addition, we expect to be a "controlled company" for the purposes of Nasdaq Listing Rules, which will provide us with exemptions from certain of the corporate governance standards imposed by the rules of The Nasdaq Global

Select Market. These provisions will further allow the Bentleys to exercise significant control over our corporate decisions and limit the ability of the public stockholders to influence our decision making. See "—We will be a 'controlled company' within the meaning of the Nasdaq Listing Rules and, as a result, will be exempt from certain corporate governance requirements."

Future transfers by holders of Class A common stock will generally result in those shares converting to Class B common stock, subject to limited exceptions, including certain transfers to family members and transfers effected for estate planning purposes. The conversion of Class A common stock to Class B common stock will have the effect, over time, of increasing the relative voting power of those holders of Class A common stock who retain their shares in the long term. If, for example, the Bentleys retain a significant portion of their holdings of Class A common stock for an extended period of time, and a significant portion of the Class A common stock initially held by others is converted to Class B common stock, the Bentleys could, as a result, acquire a higher proportion of the combined voting power. As directors and executive officers, the Bentleys owe a fiduciary duty to our stockholders and must act in good faith in a manner they reasonably believe to be in the best interests of our stockholders. As stockholders, however, each Bentley is entitled to vote his shares in his own interests, which may not always be in the interests of our stockholders generally. For a description of the dual class structure, see the section titled "Description of Capital Stock."

In addition, while we do not expect to issue any additional shares of Class A common stock following this offering, any future issuances of Class A common stock would be dilutive to holders of Class B common stock.

We cannot predict the effect our dual class structure may have on the market price of our Class B common stock.

We cannot predict whether our dual class structure will result in a lower or more volatile market price of our Class B common stock, in adverse publicity, or other adverse consequences. For example, certain index providers have announced restrictions on including companies with multiple-class share structures in certain of their indices. In July 2017, FTSE Russell (whose indices include the Russell 2000) announced that it plans to require new constituents of its indices to have greater than 5% of the company's voting rights in the hands of public stockholders, and S&P Dow Jones announced that it will no longer admit companies with multiple-class share structures to certain of its indices. Affected indices include the S&P 500, S&P MidCap 400, and S&P SmallCap 600, which together make up the S&P Composite 1500. Also in 2017, MSCI, a leading stock index provider, opened public consultations on their treatment of no-vote and multi-class structures and temporarily barred new multi-class listings from certain of its indices; however, in October 2018, MSCI announced its decision to include equity securities "with unequal voting structures" in its indices and to launch a new index that specifically includes voting rights in its eligibility criteria. Under such announced policies, the dual class structure of our common stock would make us ineligible for inclusion in certain indices and, as a result, mutual funds, exchange-traded funds, and other investment vehicles that attempt to passively track those indices would not invest in our Class B common stock. These policies are relatively new and it is unclear what effect, if any, they will have on the valuations of publicly-traded companies excluded from such indices, but it is possible that they may depress valuations, as compared to similar companies that are included. Because of the dual class structure of our common stock, we will likely be excluded from certain indices and we cannot assure you that other stock indices will not take similar actions. Given the sustained flow of investment funds into passive strategies that seek to track certain indices, exclusion from certain stock indices would likely preclude investment by many of these funds and could make our Class B common stock less attractive to other investors. As a result, the market price of our Class B common stock could be adversely affected.

We will be a "controlled company" within the meaning of the Nasdaq Listing Rules and, as a result, will be exempt from certain corporate governance requirements.

Upon the completion of this offering, the Bentleys will continue to hold capital stock representing a majority of our outstanding voting power. So long as the Bentleys maintain holdings of more than 50% of the voting power of our capital stock for the election of directors, we will be a "controlled company" within the meaning of the Nasdaq Listing Rules and Nasdaq corporate governance standards. Under these standards, a listed company of which more than 50% of the voting power is held by an individual, group or another company is a "controlled company" and may elect not to comply with certain Nasdaq corporate governance requirements, including:

- the requirement that a majority of our board of directors consist of "independent directors" as defined under Nasdaq rules;

- the requirement that we have a compensation committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities; and
- the requirement that we have a nominating and corporate governance committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities, or otherwise have director nominees selected by vote of a majority of the independent directors.

We intend to use these exemptions following this offering. As a result, we will not have a majority of independent directors on our board of directors. Additionally, following this offering, we do not intend to have a compensation committee, nor do we intend to have a nominating and corporate governance committee or an independent nominating function. Instead, our full board of directors will be directly responsible for reviewing and approving compensation and benefit arrangements for our executive officers and directors, as well as for nominating members of our board.

Even as a controlled company, we will remain subject to the rules of Sarbanes-Oxley as well as the rules of the Nasdaq Listing Rules that require us to have an audit committee composed entirely of independent directors, subject to permitted phase-in rules. Under these phase-in rules, we are required to have one independent audit committee member upon the listing date of our Class B common stock, a majority of independent audit committee members within 90 days from the listing date and all independent audit committee members within one year from the listing date. Upon our listing, we expect that our audit committee will be comprised of three members, two of whom will be independent.

If we are no longer eligible to rely on the "controlled company" exceptions, we will need to comply with all applicable Nasdaq corporate governance requirements, but we will be able to rely on phase-in periods for certain of these requirements in accordance with the Nasdaq Listing Rules. Accordingly, our stockholders may not have the same protections afforded to stockholders of companies that are subject to all Nasdaq corporate governance requirements.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us more difficult, limit attempts by our stockholders to replace or remove our current management and may negatively affect the market price of our Class B common stock.

Provisions in our amended and restated certificate of incorporation and amended and restated by-laws may have the effect of delaying or preventing a change of control or changes in our management. Our amended and restated certificate of incorporation and amended and restated by-laws include provisions that:

- provide that vacancies on our board of directors may be filled by a majority of directors then in office, even though less than a quorum;
- require that after such time as the Bentleys no longer possess a majority of our outstanding voting power, any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the chairman of our board of directors or our chief executive officer or president (in the absence of a chief executive officer);
- establish an advance notice procedure for stockholder proposals to be brought before an annual meeting, including proposed nominations of persons for election to our board of directors;
- authorize our board of directors to issue, without further action by the stockholders, shares of undesignated preferred stock; and
- authorize two classes of common stock, as discussed in the section titled "Description of Capital Stock."

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, we intend to opt out of Section 203 of the Delaware General Corporation Law (the "DGCL"), which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with a stockholder owning 15% or more of our outstanding voting stock, unless the stockholder has held the stock for a period of at least three years or, among other things, the board of

directors has approved the transaction that resulted in the stockholder owning 15% or more of our outstanding voting stock. However, our amended and restated certificate of incorporation will provide that, subject to certain exceptions (including with respect to certain transactions with the Bentleys and their affiliates and transferees), we will not be able to engage in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in prescribed manner. See the section titled "Description of Capital Stock—Anti-Takeover Provisions."

The choice of forum provision in our amended and restated certificate of incorporation could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or colleagues.

Our amended and restated certificate of incorporation provides that, to the fullest extent permitted by law, the Court of Chancery of the State of Delaware is the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a claim of a breach of fiduciary duty owed by any of our directors or officers, any action asserting a claim against us arising pursuant to the DGCL, our amended and restated certificate of incorporation or amended and restated by laws, or any action seeking to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or amended and restated by-laws, and any action asserting a claim against us that is governed by the internal affairs doctrine. In addition, the choice of forum provision provides that, to the extent permitted by applicable law, claims brought under the Securities Act or the Exchange Act must be brought exclusively in the federal district court for the District of Delaware. Despite the choice of forum provision, investors cannot waive compliance with federal securities laws and rules and regulations thereunder. The choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other colleagues, which may discourage such lawsuits against us and our directors, officers and other colleagues. Alternatively, if a court were to find the choice of forum provision contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business and financial condition.

Future sales and issuances of our capital stock or rights to purchase capital stock could result in dilution of the percentage ownership of our stockholders and could cause our stock price to decline.

We may issue additional securities following the completion of this offering. Upon the completion of this offering, our amended and restated certificate of incorporation will authorize us to issue up to shares of Class B common stock and up to shares of preferred stock. Future sales and issuances of our capital stock or rights to purchase our capital stock could result in substantial dilution to our existing stockholders. We may sell Class B common stock, preferred stock, convertible securities, and other equity securities in one or more transactions at prices and in a manner as we may determine from time to time. If we sell any such securities in subsequent transactions, investors may be materially diluted and the per share value of our Class B common stock could decline. New investors in subsequent transactions could gain rights, preferences, and privileges senior to those of holders of our Class B common stock.

We will incur significantly increased costs and devote substantial management time as a result of operating as a public company.

As a public company, we will incur significant legal, accounting, and other expenses that we did not incur as a private company. For example, we will be subject to the reporting requirements of the Exchange Act, and will be required to comply with the applicable requirements of the Sarbanes-Oxley Act and the Dodd-Frank Act, as well as rules and regulations subsequently implemented by the SEC and the Nasdaq, including the establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. We expect that compliance with these requirements will increase our legal and financial compliance costs and will make some activities more time consuming and costly. The Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and results of operations. We expect to incur significant expenses and devote substantial management effort toward ensuring compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, which will increase when we are no longer an "emerging growth company," as defined by the JOBS Act. We may need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. We cannot predict or estimate the amount of additional costs we may incur as a result of becoming a public company or the timing of such costs. As a

result, management's attention may be diverted from other business concerns, which could adversely affect our business and results of operations.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. These laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and as a result, their application in practice may evolve over time as regulatory and governing bodies provide new guidance. These factors could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We will continue to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us, and our business could be adversely affected.

As a result of disclosure of information as a public company, our business and financial condition have become more visible, which may result in threatened or actual litigation, including by competitors and other third parties. If the claims are successful, our business operations and financial results could be adversely affected, and even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and adversely affect our business operations and financial results. These factors could also make it more difficult for us to attract and retain qualified colleagues, executive officers and members of our board of directors.

We also expect that operating as a public company will make it more difficult and more expensive for us to obtain director and officer liability insurance on the terms that we would like. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees or as executive officers.

Our internal control over financial reporting does not currently meet the standards required by Section 404 of the Sarbanes-Oxley Act, and failure to achieve and maintain effective internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act could harm our business and stock price.

As a privately held company, we have not been required to maintain internal control over financial reporting in a manner that meets the standards of publicly traded companies as required by Section 404(a) of the Sarbanes-Oxley Act ("Section 404(a)"). As a public company, we will be required to provide an annual management report on the effectiveness of our internal control over financial reporting commencing with our second annual report on Form 10-K. Additionally, once we are no longer an "emerging growth company," our independent registered public accounting firm will be required to attest to the effectiveness of our internal control over financial reporting on an annual basis. The rules governing the standards that must be met for our management to assess our internal control over financial reporting are complex and require significant documentation, testing and possible remediation.

Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP. We are currently in the process of reviewing, documenting and testing our internal control over financial reporting, but we are not currently in compliance with, and we cannot be certain when we will be able to implement the requirements of, Section 404(a). We may encounter problems or delays in implementing any changes necessary to make a favorable assessment of our internal control over financial reporting. In addition, we may encounter problems or delays in completing the implementation of any requested improvements and receiving a favorable attestation in connection with the attestation provided by our independent registered public accounting firm. If we cannot favorably assess the effectiveness of our internal control over financial reporting, or if our independent registered public accounting firm is unable to provide an unqualified attestation report on our internal controls, investors could lose confidence in our financial information and the price of our Class B common stock could decline.

Our independent registered public accounting firm is not required to formally attest to the effectiveness of our internal control over financial reporting until after we are no longer an "emerging growth company" as defined in the JOBS Act. At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could harm our business, financial condition, and results of operations, and could cause a decline in the price of our Class B common stock.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus includes forward-looking statements. All statements contained in this prospectus other than statements of historical facts, including statements regarding our future results of operations and financial position, our business strategy and plans and our objectives for future operations, are forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect" and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements largely on our current expectations, projections and assumptions about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in the section titled "Risk Factors." Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. The forward-looking statements, as well as our prospects as a whole, are subject to risks and uncertainties, including the following:

- general global market, political, economic and business conditions;
- impact of changes in our business model and revenue streams;
- our sensitivity to changes in foreign exchange rates and interest rates and the success of our foreign currency hedging program;
- plans for future software solutions and services and for enhancements of existing software solutions and services;
- our ability to protect our intellectual property;
- the possibility that we may fail to fully comply with data protection and privacy laws;
- the possibility that we may fail to accurately estimate future revenues and profitability;
- the possibility that we may fail to accurately estimate future expenses, including research and development, sales and marketing and general and administrative expenses;
- the ability of governments in jurisdictions where we do business to meet their financial and debt obligations and finance infrastructure projects;
- the impact of the recent global coronavirus outbreak;
- our use of net proceeds from this offering;
- the possibility that we may fail to accurately estimate our capital requirements and our needs for additional financing;
- attracting and retaining accounts and colleagues;
- delayed or ineffective implementation or upgrades;
- rapid technological changes in our industry and relevant markets;
- sources of revenues and anticipated revenues;
- the impact of sanctions and export control laws on our ability to operate in certain geographical locations;
- the impact of changes in existing tax laws;
- the impact of the phase-out of LIBOR;
- the impact of changes in accounting standards;

- our ability to complete future acquisitions and difficulties encountered in integrating acquisitions;
- competition in our market;
- the sufficiency of our cash, cash equivalents, and investments to meet our liquidity needs;
- the impact of a limited “public float” on the liquidity and price of our Class B common stock;
- our ability to successfully defend litigation brought against us; and
- the increased expenses associated with being a public company.

These statements are only current predictions and are subject to known and unknown risks, uncertainties and other factors that may cause our or our industry’s actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. We discuss many of these risks in this prospectus in greater detail in the section titled “Risk Factors” and elsewhere in this prospectus. You should not rely upon forward-looking statements as predictions of future events.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, achievements, events, or circumstances reflected in the forward-looking statements will occur. Except as required by law, we undertake no obligation to update any of these forward-looking statements after the date of this prospectus to conform these statements to actual results or revised expectations.

MARKET AND INDUSTRY DATA

We obtained the industry, market and competitive position data contained throughout this prospectus from our own internal estimates and research as well as from industry publications and studies conducted by third parties. This information involves a number of assumptions and limitations, and you are cautioned not to give undue weight to these estimates. The industry publications and third-party studies generally state that the information that they contain has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that these publications and third-party studies and our internal data are reliable as of their respective dates, the industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section titled “Risk Factors.” These and other factors could cause results to differ materially from those expressed in these publications.

The source of certain statistical data, estimates and forecasts contained in this prospectus are the following independent industry publications or reports:

- a report prepared by Oxford Economics;
- market analyses performed by ARC Advisory Group; and
- an independent market study conducted by Cambashi, which was commissioned by us. Cambashi has consented to the references to its study and the use of its name in this prospectus and publicly-available reports.

USE OF PROCEEDS

The selling stockholders will receive all of the proceeds from the sale of shares of our Class B common stock in this offering. We will not receive any proceeds from the sale of shares by the selling stockholders. The selling stockholders will not be responsible for any offering expenses.

DIVIDEND POLICY

The declaration and payment of dividends is within the discretion of our board of directors. We paid quarterly dividends of $0.02 per share of common stock in 2018, quarterly dividends of $0.025 per share of common stock in 2019, and quarterly dividends of $0.03 per share of common stock in the first two quarters of 2020. While we intend to continue paying quarterly dividends, any future determination will be subject to the discretion of our board of directors and will be dependent on a number of factors, including our results of operations, capital requirements, restrictions under Delaware law, and overall financial condition, as well as any other factors our board of directors considers relevant. In addition, the terms of the agreement governing the Credit Facility limit the amount of dividends we can pay. See the section titled “Management’s Discussion and Analysis of Financial Conditions and Results of Operations—Liquidity and Capital Resources” for a summary of the material terms of the agreement governing the Credit Facility.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of June 30, 2020 on:

- an actual basis; and
- an as adjusted basis to (i) give effect to (A) 994,912 total shares of restricted Class B common stock and restricted stock units issued in July 2020 that will vest automatically upon the consummation of this offering, reduced by 32,238 of such restricted stock units that will be settled in cash, (B) approximately $14.9 million in additional stock-based compensation expense in connection with such July 2020 grant (excluding restricted stock units that will settle in cash) and (C) shares of Class B common stock to be sold in this offering following the exercise of stock options for such shares, at an assumed initial public offering price of the Class B common stock of $ per share, the midpoint of the range set forth on the cover page of this prospectus, as if such exercise had occurred on June 30, 2020 and (ii) reflect the payment of certain expenses in connection with this offering, including those paid on behalf of the selling stockholders and the underwriting discounts and commissions.

The information in this table is illustrative only and our capitalization following the closing of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. You should read this table together with the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes included elsewhere in this prospectus.

Except as otherwise indicated, all information in this prospectus assumes the filing and effectiveness of our Charter Amendments.

	As of June 30, 2020	
(in thousands, except share and per share data)	**Actual**	**As adjusted**
Cash and cash equivalents	$ 125,516	
Long-term debt	$ 207,000	$ 207,000
Stockholders’ equity:		
Class A common stock, $0.01 par value per share; 320,000,000 shares authorized, 11,601,757 shares issued and outstanding, actual; 320,000,000 shares authorized, shares issued and outstanding, as adjusted	116	
Class B common stock, $0.01 par value per share; 600,000,000 shares authorized, 247,607,598 shares issued and outstanding, actual; shares authorized, shares issued and outstanding, as adjusted	2,476	
Additional paid-in capital	415,883	
Accumulated other comprehensive loss	(28,404)	
Accumulated deficit[1]	(10,327)	
Total stockholders’ equity	379,744	
Total capitalization	$ 586,744	

(1) As adjusted amount does not include $ of stock-based compensation expense for 32,238 restricted stock units that will vest automatically upon the consummation of this offering and be settled in cash at the initial public offering price.

Except as otherwise indicated, the number of outstanding shares of Class B common stock on an as adjusted basis excludes, as of June 30, 2020: (i) shares of Class B common stock issuable upon exercise of stock options outstanding as of the date of this prospectus at a weighted average exercise price of $ per share of Class B common stock, (ii) 45,151 shares of Class B common stock issuable upon the settlement of fully-vested restricted stock units outstanding as of June 30, 2020, (iii) shares of unvested restricted Class B common stock and restricted stock units outstanding as of the date of this prospectus that will not vest upon consummation of this offering; (iv) 27,941,520 shares of Class B common stock held by colleagues and directors as phantom shares under our non-qualified deferred compensation plans as of June 30, 2020; and (v) shares to be reserved for issuance under our 2020 Incentive Award Plan.

The as adjusted information discussed above is illustrative only and will adjust based on the actual initial public offering price and other terms of this offering determined at pricing.

Except as otherwise indicated, all information in this prospectus assumes:

- no exercise of the underwriters' option to purchase additional shares; and
- the filing and effectiveness of our Charter Amendments.

SELECTED CONSOLIDATED FINANCIAL DATA

The following tables set forth selected consolidated financial data. The selected consolidated statement of operations data for the years ended December 31, 2018 and 2019 and the consolidated balance sheet data as of December 31, 2018 and 2019 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The selected consolidated statement of operations data for the year ended December 31, 2017 has been derived from our audited consolidated financial statements not included in this prospectus, which were audited in accordance with the auditing standards of the American Institute of Certified Public Accountants rather than the auditing standards of the Public Company Accounting Oversight Board. The consolidated statements of operations data for the six months ended June 30, 2019 and 2020 and the consolidated balance sheet data as of June 30, 2020 have been derived from our unaudited consolidated financial statements included elsewhere in this prospectus. The unaudited consolidated financial statements include all adjustments, consisting of normal recurring accruals, that we consider necessary for a fair presentation of the financial position and the results of operations for these periods. You should read this selected consolidated financial data in conjunction with the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected in the future, and our results of operations for the six months ended June 30, 2020 are not necessarily indicative of the results that may be expected for the entire year ending December 31, 2020 or any other period.

All amounts presented in this selected consolidated financial data, except share and per share amounts, are presented in thousands. Additionally, many of the amounts and percentages have been rounded for convenience of presentation.

Consolidated Statements of Operations Data:

	Year Ended December 31,				Six Months Ended June 30,	
	2017	2018	2019		2019	2020
	Topic 605		Topic 605[1]	Topic 606	Topic 606	Topic 606
Revenues:						
Subscriptions	$ 501,098	$ 557,421	$ 613,925	$ 608,300	$ 290,147	$ 327,837
Perpetual licenses	61,661	61,065	52,519	59,693	24,468	23,193
Subscriptions and licenses	562,759	618,486	666,444	667,993	314,615	351,030
Services	66,164	73,224	68,405	68,661	32,529	27,950
Total revenues	628,923	691,710	734,849	736,654	347,144	378,980
Cost of revenues:						
Cost of subscriptions and licenses	53,662	55,113	71,439	71,578	30,831	43,128
Cost of services	66,928	76,211	72,572	72,572	38,367	30,836
Total cost of revenues	120,590	131,324	144,011	144,150	69,198	73,964
Gross profit	508,333	560,386	590,838	592,504	277,946	305,016
Operating expenses:						
Research and development	151,194	175,032	183,552	183,552	91,861	89,353
Selling and marketing	139,259	160,635	155,274	155,294	75,168	65,727
General and administrative	87,467	89,328	97,580	97,580	46,307	52,269
Amortization of purchased intangibles	9,014	14,000	14,213	14,213	6,852	7,115
Total operating expenses	386,934	438,995	450,619	450,639	220,188	214,464
Income from operations	121,399	121,391	140,219	141,865	57,758	90,552
Interest expense, net	(10,320)	(8,765)	(8,199)	(8,199)	(4,474)	(2,516)
Other income (expense), net	(5,773)	236	(5,557)	(5,557)	(1,747)	(6,985)
Income before income taxes	105,306	112,862	126,463	128,109	51,537	81,051
Provision for income taxes	46,141	(29,250)	21,762	23,738	5,119	11,440
Equity in loss of joint venture, net of tax	—	—	1,275	1,275	—	866
Net income	$ 59,165	142,112	103,426	103,096	46,418	68,745
Less: Net income attributable to participating securities		(4)	(8)	(8)	(12)	—
Net income per share attributable to Class A and Class B common shares		$ 142,108	$ 103,418	$ 103,088	$ 46,406	$ 68,745
Net income per share:						
Basic		$ 0.50	$ 0.36	$ 0.36	$ 0.16	$ 0.24
Diluted		$ 0.49	$ 0.35	$ 0.35	$ 0.16	$ 0.23
Weighted average shares outstanding, basic		285,805,096	284,625,642	284,625,642	285,529,476	286,068,766
Weighted average shares outstanding, diluted		292,624,496	293,796,707	293,796,707	293,633,255	295,595,234

(1) The Topic 605 amounts presented for the year ended December 31, 2019 give effect to revenue adjustments as if the adoption of Topic 606 had not occurred on January 1, 2019. For a reconciliation of the impact of adopting Topic 606 on our audited consolidated financial statements for the year ended December 31, 2019, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

Revenue Comparison—Topic 605 versus Topic 606:

On January 1, 2019, we adopted Topic 606, which supersedes substantially all existing revenue recognition guidance under U.S. GAAP. We adopted Topic 606 using the modified retrospective method, under which the cumulative effect of initially applying Topic 606 was recorded as a reduction to the opening balance of *Accumulated deficit* of $125,464 ($101,489, net of tax) as of January 1, 2019. We applied the standard only to contracts that were not completed as of the date of initial application. The comparative information in our consolidated financial statements included elsewhere in this prospectus has not been adjusted and continues to be reported under Topic 605.

The below table presents a comparison of our revenues as recognized under Topic 605 and Topic 606. We believe that an understanding of the impact of the revenue recognition guidance under Topic 606 on our revenues and revenue trends is useful in evaluating our operating performance.

	Year Ended December 31,		
	2017	2018	2019
Topic 605:[1]			
Subscriptions	$ 501,098	$ 557,421	$ 613,925
Perpetual licenses	61,661	61,065	52,519
Services	66,164	73,224	68,405
Total Revenues	$ 628,923	$ 691,710	$ 734,849
Topic 606:[2]			
Subscriptions	$ 505,720	$ 560,485	$ 608,300
Perpetual licenses	49,983	57,353	59,693
Services	66,164	73,224	68,661
Total Revenues	$ 621,867	$ 691,062	$ 736,654

(1) The Topic 605 amounts presented for the year ended December 31, 2019 give effect to revenue adjustments as if the adoption of Topic 606 had not occurred on January 1, 2019. For a reconciliation of the impact of adopting Topic 606 on our audited consolidated financial statements for the year ended December 31, 2019, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

(2) The Topic 606 unaudited amounts presented for the years ended December 31, 2017 and 2018 give effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2017 rather than January 1, 2019. For a reconciliation of the impact of adopting Topic 606 as if it had occurred as of January 1, 2017 on our audited consolidated statements of operations data for the years ended December 31, 2017 and 2018, see the section titled "—Non-GAAP Financial Measures" below.

Key Business Metrics:

We regularly review the following key metrics to evaluate our business, measure our performance, identify trends in our business, prepare financial projections, and make strategic decisions.

	Year Ended December 31,			Twelve Months Ended June 30,	
	2017	2018	2019	2019	2020
Last twelve-months recurring revenues (Topic 606)	$ 521,923	$ 586,466	$ 631,097	$ 606,411	$ 665,659
Last twelve-months recurring revenues (Topic 605)	$ 523,502	$ 583,402	$ 636,899	$ 604,043	$ 670,825
Constant Currency:					
ARR growth rate	9 %	10 %	12 %	11 %	11 %
Account retention rate	98 %	98 %	98 %	98 %	98 %
Recurring revenues dollar-based net retention rate	105 %	107 %	108 %	106 %	110 %

Last twelve-months recurring revenues. Last twelve-months recurring revenues is calculated as recurring revenues recognized over the preceding twelve-month period. We define recurring revenues as subscriptions revenues that recur monthly, quarterly, or annually with specific or automatic renewal clauses and professional services revenues in which the underlying contract is based on a fixed fee and contains automatic annual renewal provisions.

Last twelve-months recurring revenues is presented using revenues recognized pursuant to Topic 606 as well as Topic 605 for all periods in order to enhance comparability during our transition to Topic 606. The Topic 606 unaudited amounts presented for the years ended December 31, 2017 and 2018 give effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2017 rather than January 1, 2019. For a reconciliation of the impact of adopting Topic 606 as if it had occurred as of January 1, 2017 on our audited consolidated statements of operations data for the years ended December 31, 2017 and 2018, see the section titled "—Non-GAAP Financial Measures."

On an annual and trailing twelve-month basis, we expect our recurring revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605. This expectation is attributable to the annual, recurring nature of our subscription agreements. However, the conversion of our existing subscription users to consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, as well as the term start date of new annual term license subscriptions, will introduce some volatility between annual and trailing twelve-month periods and impact period over period comparability. Specifically, in 2019, the conversion of existing ELS subscriptions to consumption-based E365 subscriptions resulted in a reduction of Topic 606 Enterprise subscriptions revenues of $11,248 when compared to Topic 605. This impact was partly offset by higher annual term license subscriptions revenues under Topic 606 of $5,714 due to the upfront recognition of license revenues of new subscriptions. See the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Impacting Comparability and Performance.”

We believe that last twelve-months recurring revenues is an important indicator of our performance during the immediately preceding twelve-month time period. We believe that we will continue to experience favorable growth in recurring revenues due to our strong account retention and recurring revenues dollar-based net retention rates as well as the addition of new accounts with recurring revenues. The last twelve-months recurring revenues under Topic 606 for the periods ended December 31, 2018, December 31, 2019, and June 30, 2020 compared to the last twelve-months of the preceding twelve-month period increased by $64,543 (or $59,900 under Topic 605), $44,631 (or $53,497 under Topic 605), and $59,248 (or $66,782 under Topic 605), respectively. These increases were primarily due to growth in ARR during the prior and current periods, which is primarily the result of consistent performance in our account retention rate and in our recurring revenues dollar-based net retention rate, as well as additional recurring revenues resulting from new accounts and acquisitions. For the twelve months ended December 31, 2019, 86% of our total revenues under Topic 606 (or 87% under Topic 605) were recurring revenues. For the twelve months ended June 30, 2020, 87% of our revenues were recurring revenues. Prospectively, we expect that this percentage is likely to remain consistent or modestly increase as we continue to target shifting episodic professional services revenues to subscriptions classified as recurring revenues.

Constant currency metrics. In reporting period-over-period results, we calculate the effects of foreign currency fluctuations and constant currency information by translating current period results using prior period average foreign currency exchange rates. Our definition of constant currency may differ from other companies reporting similarly named measures, and these constant currency performance measures should be viewed in addition to, and not as a substitute for, our operating performance measures calculated in accordance with U.S. GAAP.

ARR growth rate. Our ARR growth rate is the growth rate of our ARR, measured on a constant currency basis. Our ARR is defined as the sum of the annualized value of our portfolio of contracts that produce recurring revenue as of the last day of the reporting period, and the annualized value of the last three months of recognized revenues for our contractually recurring consumption-based software subscriptions with consumption measurement durations of less than one year. We believe that the last three months of recognized revenues, on an annualized basis, for our recurring software subscriptions with consumption measurement period durations of less than one year is a reasonable estimate of the annual revenues, given our consistently high retention rate and stability of usage under such subscriptions. ARR resulting from the annualization of recurring contracts with consumption measurement durations of less than one year, as a percentage of total ARR was 9%, 15%, and 25% for the years ended December 31, 2017, 2018, and 2019, respectively, and 18% and 29% for the twelve months ended June 30, 2019 and 2020, respectively.

ARR is inclusive of the ARR of acquired companies as of the date they are acquired. We believe that ARR and ARR growth are important metrics indicating the scale and growth of our business. Furthermore, we believe ARR, considered in connection with our account retention rate and our recurring revenues dollar-based net retention rate, is a leading indicator of revenue growth. Our ARR as of June 30, 2020 was $697,682, calculated using the spot foreign exchange rates as of June 30, 2020.

There was no impact to our ARR growth rate from acquisitions for the year ended December 31, 2017. Our ARR growth rate was favorably impacted from acquisitions by 3% and 1% for the years ended December 31, 2018 and 2019, respectively, and by 1% and 2% for the twelve months ended June 30, 2019 and 2020, respectively.

Account retention rate. Our account retention rate for any given twelve-month period is calculated using the average currency exchange rates for the prior period, as follows: the prior period recurring revenues from all accounts with recurring revenues in the current and prior period, divided by total recurring revenues from all accounts during the prior period. The account retention rate is calculated using revenues recognized pursuant to Topic 605 for all periods in order to enhance comparability during our transition to Topic 606 as we do not have all information available to us necessary to present account retention rate pursuant to Topic 606 for any period prior to January 1, 2019. Our account retention rate is an important indicator that provides insight into the long-term value of our account relationships and our ability to retain our account base. We believe that our consistent and high account retention rates illustrate our ability to retain and cultivate long-term relationships with our accounts.

Recurring revenues dollar-based net retention rate. Our recurring revenues dollar-based net retention rate is calculated using the average exchange rates for the prior period, as follows: the recurring revenues for the current period, including any growth or reductions from existing accounts, but excluding recurring revenues from any new accounts added during the current period, divided by the total recurring revenues from all accounts during the prior period. A period is defined as any trailing twelve months. The recurring revenues dollar-based net retention rate is calculated using revenues recognized pursuant to Topic 605 for all periods in order to enhance comparability during our transition to Topic 606 as we do not have all information available to us necessary to present recurring revenues dollar-based net retention rate pursuant to Topic 606 for any period prior to January 1, 2019. We believe our recurring revenues dollar-based net retention rate is a key indicator of our success in growing our revenues within our existing accounts. Given that for the twelve months ended December 31, 2019 recurring revenues represented 86% of our total revenues under Topic 606, this metric helps explain our revenue performance as primarily growth into existing accounts. We believe that our consistent and high recurring revenues dollar-based net retention rate illustrates our ability to consistently retain accounts and grow them.

As discussed above, we expect annual and trailing twelve-month recurring revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605 due to the annual, recurring nature of our subscription agreements. We, therefore, also expect that our account retention rate and our recurring revenue dollar-based net retention rate under Topic 606 will be comparable to such metrics under Topic 605. However, under Topic 606, the conversion of our existing subscription users to consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, as well as the term start date of new subscriptions, will introduce some volatility between annual, and trailing twelve-month periods and impact period over period comparability. See the section titled “Key Factors Impacting Comparability and Performance.”

Our calculation of these metrics may not be comparable to other companies with similarly-titled metrics.

For additional information about our key metrics, see the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Business Metrics.”

Non-GAAP Financial Measures:

In addition to our results determined in accordance with U.S. GAAP, we believe the below non-GAAP measures are useful in evaluating our operating performance. We use the below non-GAAP financial information, collectively, to evaluate our ongoing operations and for internal planning and forecasting purposes.

	Year Ended December 31,		
	2017	2018	2019
Topic 605:[1]			
Adjusted EBITDA	$ 160,886	$ 171,768	$ 186,598
Adjusted Net Income	$ 115,389	$ 132,246	$ 135,471
Topic 606:[2]			
Adjusted EBITDA	$ 153,830	$ 171,120	$ 188,129
Adjusted Net Income	$ 109,398	$ 131,697	$ 135,049

(1) The Topic 605 amounts presented for the year ended December 31, 2019 give effect to revenue adjustments as if the adoption of Topic 606 had not occurred on January 1, 2019. For a reconciliation of the impact of adopting Topic 606 on our audited consolidated financial statements for the year ended December 31, 2019, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

(2) The Topic 606 unaudited amounts presented for the years ended December 31, 2017 and 2018 give effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2017 rather than January 1, 2019.

	Six Months Ended June 30,	
	2019	2020
Topic 606:		
Adjusted EBITDA	$ 79,384	$ 115,506
Adjusted Net Income	$ 59,978	$ 89,203

Adjusted EBITDA. We define Adjusted EBITDA as net income adjusted for interest expense, net, provision for income taxes, depreciation and amortization, equity-based compensation, acquisition expenses, realignment expenses, other non-operating income and expense, net, and equity in loss of joint venture, net of tax.

Adjusted Net Income. We define Adjusted Net Income as net income adjusted for the following: amortization of purchased intangibles and developed technologies, equity-based compensation, acquisition expenses, realignment expenses, other non-operating income and expense, net, the tax effect of the above adjustments to net income, non-recurring income tax expense and benefit, and equity in loss of joint venture, net of tax. The tax effect of adjustments to net income is based on the estimated marginal effective tax rates in the jurisdictions impacted by such adjustments.

Adjusted EBITDA and Adjusted Net Income are not presentations made in accordance with U.S. GAAP, and our use of the terms Adjusted EBITDA and Adjusted Net Income may vary from the use of similarly titled measures by others in our industry due to the potential inconsistencies in the method of calculation and differences due to items subject to interpretation. We believe the presentation of Adjusted EBITDA and Adjusted Net Income provides useful information to management and investors regarding financial and business trends related to our results of operations and that when non-GAAP financial information is viewed with U.S. GAAP financial information, investors are provided with a more meaningful understanding of our ongoing operating performance. We also use Adjusted EBITDA and Adjusted Net Income to compare our results to those of our competitors and to consistently measure our performance from period to period.

Adjusted EBITDA and Adjusted Net Income should not be considered as alternatives to net income, operating income, or any other performance measures derived in accordance with U.S. GAAP as measures of operating performance. Adjusted EBITDA and Adjusted Net Income have important limitations as analytical tools and should not be considered in isolation or as a substitute for analysis of our results as reported under U.S. GAAP.

Reconciliation of net income to Adjusted EBITDA (Topic 605):

	Year Ended December 31,		
	2017	2018	2019
Net income[1]	$ 59,165	$ 142,112	$ 103,426
Interest expense, net	10,320	8,765	8,199
Provision (benefit) for income taxes	46,141	(29,250)	21,762
Depreciation and amortization[3][a]	26,544	29,200	32,160
Equity-based compensation[3][c]	4,985	7,989	8,091
Acquisition expenses[3][d]	3,020	6,410	6,712
Realignment expenses[3][e]	4,938	6,778	(584)
Other (income) expense, net[3][f]	5,773	(236)	5,557
Equity in loss of joint venture, net of tax	—	—	1,275
Adjusted EBITDA	$ 160,886	$ 171,768	$ 186,598

Reconciliation of net income to Adjusted Net Income (Topic 605):

	Year Ended December 31,		
	2017	2018	2019
Net income[1]	$ 59,165	$ 142,112	$ 103,426
Non-GAAP adjustments, prior to income taxes:			
Amortization of purchased intangibles and developed technologies[3][b]	13,879	17,215	18,731
Equity-based compensation[3][c]	4,985	7,989	8,091
Acquisition expenses[3][d]	3,020	6,410	6,712
Realignment expenses[3][e]	4,938	6,778	(584)
Other (income) expense, net[3][f]	5,773	(236)	5,557
Total non-GAAP adjustments, prior to income taxes	32,595	38,156	38,507
Income tax effect of non-GAAP adjustments	(6,644)	(5,971)	(7,737)
Non-recurring income tax expense related to Tax Cuts and Jobs Act[3][g]	30,273	4,318	—
Non-recurring income tax benefit related to intercompany transactions[3][h]	—	(46,369)	—
Equity in loss of joint venture, net of tax	—	—	1,275
Adjusted Net Income	$ 115,389	$ 132,246	$ 135,471

Reconciliation of net income to Adjusted EBITDA (Topic 606):

	Year Ended December 31,			Six Months Ended June 30,	
	2017	2018	2019	2019	2020
Net income[2]	$ 53,174	$ 141,563	$ 103,096	$ 46,418	$ 68,745
Interest expense, net	10,320	8,765	8,199	4,474	2,516
Provision (benefit) for income taxes	45,076	(29,349)	23,738	5,119	11,440
Depreciation and amortization[3][a]	26,544	29,200	32,160	15,366	16,664
Equity-based compensation[3][c]	4,985	7,989	8,091	4,025	3,212
Acquisition expenses[3][d]	3,020	6,410	6,597	2,678	5,009
Realignment expenses[3][e]	4,938	6,778	(584)	(443)	69
Other (income) expense, net[3][f]	5,773	(236)	5,557	1,747	6,985
Equity in loss of joint venture, net of tax	—	—	1,275	—	866
Adjusted EBITDA	$ 153,830	$ 171,120	$ 188,129	$ 79,384	$ 115,506

Reconciliation of net income to Adjusted Net Income (Topic 606):

	Year Ended December 31,			Six Months Ended June 30,	
	2017	2018	2019	2019	2020
Net income[2]	$ 53,174	$ 141,563	$ 103,096	$ 46,418	$ 68,745
Non-GAAP adjustments, prior to income taxes:					
Amortization of purchased intangibles and developed technologies[3][b]	13,879	17,215	18,731	9,061	9,458
Equity-based compensation[3][c]	4,985	7,989	8,091	4,025	3,212
Acquisition expenses[3][d]	3,020	6,410	6,597	2,678	5,009
Realignment expenses[3][e]	4,938	6,778	(584)	(443)	69
Other (income) expense, net[3][f]	5,773	(236)	5,557	1,747	6,985
Total non-GAAP adjustments, prior to income taxes	32,595	38,156	38,392	17,068	24,733
Income tax effect of non-GAAP adjustments	(6,644)	(5,971)	(7,714)	(3,508)	(5,141)
Non-recurring income tax expense related to Tax Cuts and Jobs Act[3][g]	30,273	4,318	—	—	—
Non-recurring income tax benefit related to intercompany transactions[3][h]	—	(46,369)	—	—	—
Equity in loss of joint venture, net of tax	—	—	1,275	—	866
Adjusted Net Income	$ 109,398	$ 131,697	$ 135,049	$ 59,978	$ 89,203

(1) The Topic 605 amounts presented for the year ended December 31, 2019 give effect to revenue adjustments as if the adoption of Topic 606 had not occurred on January 1, 2019. For a reconciliation of the impact of adopting Topic 606 on our audited consolidated financial statements for the year ended December 31, 2019, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

(2) The Topic 606 unaudited amounts presented for the years ended December 31, 2017 and 2018 give effect to revenue and income tax adjustments as if the adoption of Topic 606 had occurred as of January 1, 2017 rather than January 1, 2019. The most significant impact from the adoption of Topic 606 relates to timing of revenue recognition for perpetual licenses and the accounting for certain of our subscription arrangements that include term-based software licenses bundled with support. Under prior guidance, revenue for perpetual licenses was recognized over a three-year period, while revenue attributable to the term-based software licenses was recognized ratably over the term. Under Topic 606, both perpetual license and prepaid term-based software license revenue will be recognized upfront upon delivery of the software license. Our revenue recognition for services, as well as our accounting for costs to obtain a contract with a customer, remained substantially unchanged and were not adjusted. See Note 2 to our consolidated financial statements included elsewhere in this prospectus for additional information regarding the adoption of Topic 606.

Reconciliation of Topic 605 to Topic 606:

	Year Ended December 31, 2017		
	As reported Topic 605	Adjustments	Topic 606
Subscriptions	$ 501,098	$ 4,622	$ 505,720
Perpetual licenses	61,661	(11,678)	49,983
Provision for income taxes	46,141	(1,065)	45,076
Net income	59,165	$ (5,991)	53,174

	Year Ended December 31, 2018		
	As reported Topic 605	Adjustments	Topic 606
Subscriptions	$ 557,421	$ 3,064	$ 560,485
Perpetual licenses	61,065	(3,712)	57,353
Provision for income taxes	(29,250)	(99)	(29,349)
Net income	142,112	$ (549)	141,563

(3) Further explanation of certain of our adjustments in arriving at Adjusted EBITDA and Adjusted Net Income are as follows:

(a) *Depreciation and amortization.* Depreciation and amortization includes amortization of $1,617, $2,052, and $3,516 for the years ended December 31, 2017, 2018, and 2019, respectively, and $1,448 and $2,022 for the six months ended June 30, 2019 and 2020, respectively, related to certain projects under our Accelerated Commercial Development Program (“ACDP”).

(b) *Amortization of purchased intangibles and developed technologies.* Amortization of purchased intangibles varies in amount and frequency and is significantly impacted by the timing and size of our acquisitions. For the years ended December 31, 2017, 2018, and 2019 and the six months ended June 30, 2019 and 2020, amortization of acquisition related developed technologies under our ACDP was $359, $375, $723, $363, and $182, respectively. Management finds it useful to exclude these variable charges from our operating expenses to assist in budgeting, planning and forecasting future periods. The use of intangible assets and developed technologies contributed to our revenues earned during the periods presented and will also contribute to our revenues in future periods. Amortization of purchased intangible assets and developed technologies will recur in future periods.

(c) *Equity-based compensation*. We exclude equity-based compensation expenses from our non-GAAP measures primarily because they are non-cash expenses and management finds it useful to exclude certain non-cash charges to assess the appropriate level of various operating expenses to assist in budgeting, planning and forecasting future periods. Moreover, because of varying available valuation methodologies, subjective assumptions and the variety of award types that companies can use under ASC 718, *Compensation—Stock Compensation*, we believe excluding equity-based compensation expenses allows investors to make meaningful comparisons between our recurring core business results of operations and those of other companies.

(d) *Acquisition expenses.* We incur expenses for professional services rendered in connection with business combinations, which are included in our U.S. GAAP presentation of general and administrative expense. Also included in our acquisition expenses are retention incentives paid to executives of the acquired companies as well as adjustments related to deferred revenue from acquired companies. We exclude these acquisition expenses when we evaluate our continuing operational performance as we would not have otherwise incurred these expenses in the periods presented as part of our continuing operations. Acquired deferred revenue is recorded on the opening balance sheet at an amount that typically is lower than historical carrying value. The adjustment to acquired deferred revenue has no impact on our business or cash flow, but it does reduce reported U.S. GAAP revenue in the periods following an acquisition.

(e) *Realignment expenses.* These expenses are associated with realigning our business strategies to better serve our accounts and to better align resources with the evolving needs of the business. In connection with these actions, we recognize costs related to termination benefits for former colleagues whose positions were eliminated. We exclude these charges because they are not reflective of our ongoing business and results of operation. We believe it is useful for investors to understand the effects of these items on our total operating expenses. In the ordinary course of operating our business, we incur severance expenses that are not included in this adjustment.

(f) *Other (income) expense, net*. Primarily consists of foreign currency translation losses of $6,294, $418, and $5,591 for the years ended December 31, 2017, 2018, and 2019, respectively, and $1,588 and $4,263 for the six months ended June 30, 2019 and 2020, respectively. The foreign currency translation losses derive primarily from U.S. Dollar denominated intercompany balances, cash and cash equivalents, and accounts receivable held by foreign subsidiaries with non-U.S. Dollar functional currencies. In October 2018, we had intercompany sales of certain intangible operating assets between our foreign subsidiaries, which resulted in significant U.S. Dollar denominated intercompany liabilities at foreign subsidiaries with a non-U.S. Dollar functional currency (mainly Euro). These U.S. Dollar denominated balances are being translated into their functional currencies at the rates in effect at the balance sheet date and are fully eliminated in consolidation. The gains and losses from such translations are included in Other income (expense), net. For the year ended December 31, 2019 and the six months ended June 30, 2019 and 2020, intercompany loan balances resulted in unrealized foreign currency translation losses of $5,270, $1,680, and $1,765, respectively. Foreign currency translation gain and losses are driven by the volume of foreign currency transactions and the foreign currency exchange rates for the year. A significant amount of such gains and losses is derived from the translation of intercompany balances which eliminate in consolidation and are unrealized. Other (income) expense, net also includes the loss from the change in fair value of our interest rate swap of $4,174 for the six months ended June 30, 2020. We exclude these charges because they are not reflective of ongoing business and results of operation. We believe it is useful for investors to understand the effects of these items on our total operating expenses.

(g) *Non-recurring income tax expense related to Tax Cuts and Jobs Act*. The U.S. Tax Cuts and Jobs Act was enacted on December 22, 2017 and resulted in a provisional tax expense of $30,273 in 2017 primarily due to the one-time transition tax on accumulated foreign subsidiary earnings and deferred tax impacts. For the year ended December 31, 2018, we recorded a $4,318 increase to tax expense related to provisional amounts recorded in 2017.

(h) *Non-recurring income tax benefit related to intercompany transactions*. For the year ended December 31, 2018, we had intercompany sales of certain intangible operating assets between our foreign subsidiaries, which resulted in a non-recurring net tax benefit of $46,369.

Consolidated Balance Sheet Data:

The following table presents summary consolidated balance sheet data as of December 31, 2018 and 2019 and June 30, 2020:

	December 31, 2018	December 31, 2019	June 30, 2020
Cash and cash equivalents	$ 81,183	$ 121,101	$ 125,516
Working capital, excluding deferred revenues	135,163	166,136	104,275
Total assets	923,596	994,599	1,059,169
Deferred revenues, current and long-term	337,451	213,145	186,456
Total debt	258,750	233,750	207,000
Total stockholders' equity	147,431	334,619	379,744

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in conjunction with the section titled "Selected Consolidated Financial Data" and our consolidated financial statements and related notes thereto included elsewhere in this prospectus. In addition to historical information, this discussion contains forward-looking statements that involve risks, uncertainties and assumptions that could cause actual results to differ materially from management's expectations. Factors that could cause such differences are discussed in the sections titled "Cautionary Note Regarding Forward-Looking Statements" and "Risk Factors."

All amounts presented in this Management's Discussion and Analysis of Financial Condition and Results of Operations, except share and per share amounts, are presented in thousands. Additionally, many of the amounts and percentages have been rounded for convenience of presentation.

Overview:

We are a leading global provider of software for infrastructure engineering, enabling the work of civil, structural, geotechnical, and plant engineering practitioners, their project delivery enterprises, and owner-operators of infrastructure assets. We were founded in 1984 by the Bentley brothers. Our enduring commitment is to develop and support the most comprehensive portfolio of integrated software offerings across professional disciplines, project and asset lifecycles, infrastructure sectors, and geographies. Our software enables digital workflows across engineering disciplines, distributed project teams, from offices to the field, and across computing form factors, including desktops, on-premises servers, cloud-native services, mobile devices, and web browsers. We deliver our solutions via on-premise, cloud, and hybrid environments. Our users engineer, construct, and operate projects and assets across the following infrastructure sectors:

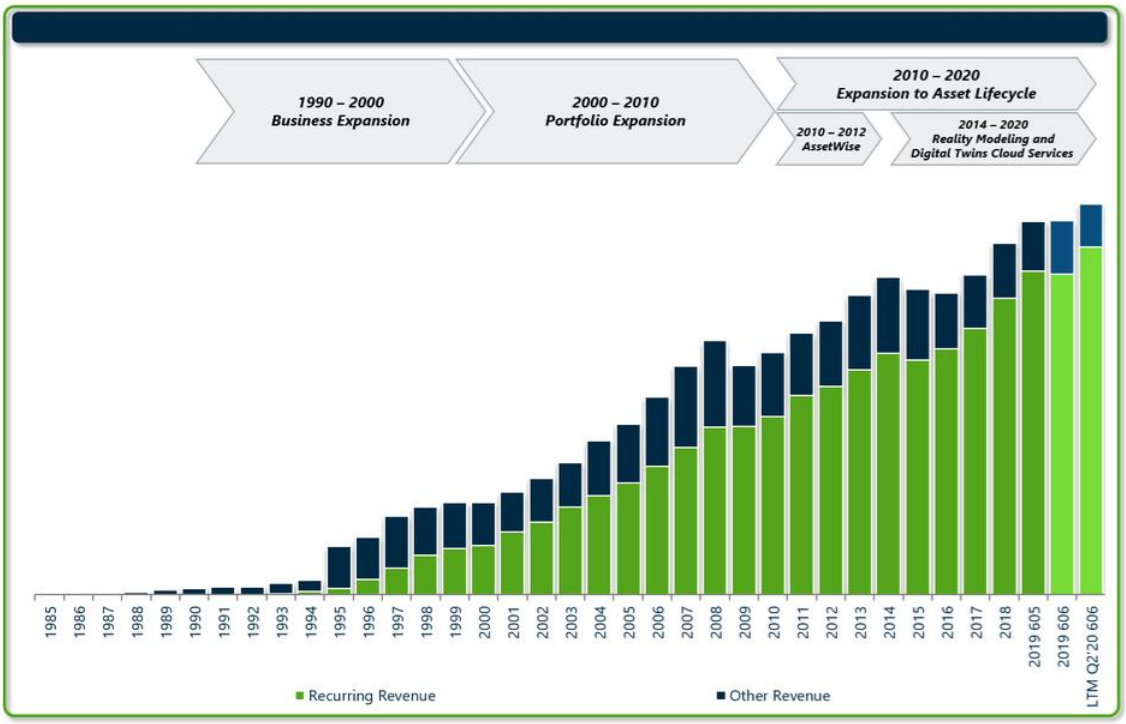
- *public works* (including roads, rail, airports, ports, and water and wastewater networks) / *utilities* (including electric, gas, water, and communications). We estimate that this sector represents 52% of the net infrastructure asset value of the global top 500 infrastructure owners (the "global top 500 infrastructure owners") based on the 2019 edition of the *Bentley Infrastructure 500 Top Owners*, our annual compilation of the world's largest infrastructure owners ranked by net depreciated value of their tangible fixed assets;
- *industrial* (including discrete and process manufacturing, power generation, and water treatment plants) / *resources* (including oil and gas, mining, and offshore). We estimate that this sector represents 38% of the global top 500 infrastructure owners' net infrastructure asset value; and
- *commercial/facilities* (including office buildings, hospitals, and campuses). We estimate that this sector represents 10% of the global top 500 infrastructure owners' net infrastructure asset value.

We offer solutions for enterprises and professionals across the infrastructure lifecycle. Our Project Delivery and Asset and Network Performance solutions are systems provided via cloud and hybrid environments, developed respectively to extend enterprise collaboration during project delivery, and to manage and leverage engineering information during operations and maintenance. Our Design Integration and Digital Cities solutions are primarily desktop applications and cloud-provisioned solutions for professional practitioners and workgroups.

We continue to make substantial investments in research and development because we believe the infrastructure engineering software market presents compelling opportunities for the application of new technologies that advance our current solutions. Our research and development roadmap balances technology advances and new offerings with continuous enhancements to existing offerings. Our allocation of research and development resources is guided by management-established priorities, input from product managers, and user and sales force feedback.

We bring our offerings to market primarily through direct sales channels that generated approximately 92% of our 2019 revenues.

Since its founding, Bentley Systems has remained focused on our mission to provide software in support of the professional needs of those responsible for creating and managing the world's infrastructure. We have methodically grown through periods of global expansion, periods of expansion in our portfolio of solutions, and periods of rapid technological change. The following provides key corporate milestones over our 35-year history:



Our sources of revenue growth, in order of magnitude, come from the recurrence of existing subscription revenues, additional revenue and growth from existing accounts using the same products, additional revenue and growth from existing accounts using new products, and growth from new accounts. For the year ended December 31, 2019, under Topic 606, subscriptions represented 83% of our revenues, and together with certain professional services revenues that are recurring in nature and represented 3% of our revenues, bring the proportion of our recurring revenues to 86% of total revenues. The remaining 14% of our revenues were generated from the sale of perpetual licenses and the delivery of non-recurring professional services. We have a highly-diversified account base, with our largest account representing no more than 2.5% of total revenues in 2019. Our 2019 revenues were also diversified by account type, size, and geography. Additionally, we believe that we have a loyal account base, with 80% of our 2019 revenues from organizations that have been our accounts for over ten years. Between 2000 and 2019, our revenues had an approximately 8% compound annual growth rate.

Our Commercial Offerings:

Our solutions are made available to our accounts in a broad range of commercial offerings designed to accommodate the diverse preferences of our accounts, which range from owned versus subscribed, short-term subscriptions versus longer term annual subscriptions, and fee-certain arrangements versus variable or consumption-based arrangements with consumption measurement durations of less than one year. We contract our commercial offerings under a single form of standard contract, which includes liability and other risk protections in our favor, and appropriate standard addendums to the primary contract, which specifically address the commercial offerings provided. Our standard commercial offerings are summarized in the below table, with further descriptions following the table:

	Subscription Offerings				Perpetual Licenses	Professional Services
	SELECT Subscriptions	Enterprise Subscriptions		Term License Subscriptions		
		E365	ELS			
Overview	• Prepaid annual recurring subscription based on owned perpetual licenses	• Complete and unlimited global access to our comprehensive portfolio of solutions • Includes benefits of SELECT subscriptions		• Consumption-based growth and expansion	• Available for accounts that prefer to own software licenses	• Offered alongside all subscription and license offerings
Topic 606 Revenue Recognition	• Substantially ratable	• Quarterly	• Substantially upfront	• Usage based, or substantially upfront if prepaid	• Upfront	• As delivered
Key Features	• Software upgrades • Technical support • License pooling • CONNECTservices • Open Access • Portfolio Balancing	• Unlimited portfolio access and users • Global pricing • Success Plan services included	• Unlimited portfolio access; unlimited users • License pooling	• For *Applications*: unlimited portfolio access; unlimited users • For *ProjectWise* and *AssetWise*: term access via Passports and Visas or Annual Subscriptions	• License ownership for select accounts	• Training • Implementation • Configuration • Customization • Strategic consulting

SELECT Subscriptions. Our SELECT subscription is a prepaid annual recurring subscription that accompanies a new or previously purchased perpetual license. We believe that the SELECT benefits summarized below support our favorable rates of account retention and growth:

- Software upgrades;
- Comprehensive technical support;
- License pooling providing accounts with efficiency advantages;
- Portfolio balancing providing accounts the opportunity to exchange unused or under used licenses with other of our license offerings;
- Learning benefits, Azure-based cloud collaboration services, and mobility advantages; and
- Access to our entire application portfolio with usage of licenses not previously purchased monetized quarterly in arrears based on consumption. See the section titled "—Term License Subscriptions" below.

Enterprise Subscriptions. Our Enterprise subscription offerings provide our largest accounts with complete and unlimited global access to our comprehensive portfolio of solutions.

- *Enterprise License Subscriptions ("ELS").* Our ELS offering provides access to our comprehensive portfolio of solutions for a fixed annual fee. Subsequent annual renewals are based on the account's usage of software in the preceding year, effectively an annual consumption-based arrangement. The majority of our ELS subscribers were historically SELECT subscribers that have grown into a position to take full advantage of our ELS offering.

- *Enterprise 365 ("E365 Subscriptions").* Under our E365 subscription, participating accounts have unrestricted access to our comprehensive software portfolio, similar to ELS, however they are charged based upon daily usage, effectively a daily consumption-based arrangement. The daily usage fee also includes maintenance and Success Plan services, which are designed to achieve business outcomes through more efficient and effective use of our software. The E365 subscription offering was introduced in 2018. Prospectively, we plan to prioritize efforts to transition ELS subscribers to E365 subscriptions, primarily to simplify pricing, more closely align consumption to monetization, and to establish Success Plan services as recurring to ensure better business outcomes for our users. To the extent we succeed in transitioning subscribers to E365, under Topic 606 we would recognize a greater proportion of our revenues on a quarterly basis rather than substantially upfront. See the section titled "—Key Factors Impacting Comparability and Performance."

Term License Subscriptions

Annual Term Licenses ("ATL") Subscription. Annual term licenses are generally prepaid annually for named user access to specific products and include our newly introduced Practitioner Licenses. Annual term licenses are also used to monetize site or enterprise wide access for certain of our AssetWise solutions within given usage bands.

Quarterly Term License ("QTL") Subscription. Through quarterly term licenses, accounts pay quarterly in arrears for licenses they have used representing usage beyond their contracted quantities. Much like our Enterprise subscription programs, a QTL allows smaller and medium-sized accounts to match usage to ongoing project requirements.

Monthly Term License ("MTL") Subscription. Monthly term licenses are identical to QTL subscriptions, except for the term of the license, and the manner in which they are monetized. MTL subscriptions require a Cloud Services Subscription, which is discussed below.

Visas and Passports. Visas and Passports are quarterly or annual term licenses enabling users to access specific project or enterprise information and entitle certain functionality of our ProjectWise and AssetWise systems. Generally, a Passport provides desktop, web, and mobile application access to project information and certain functions, and a Visa provides similar access, plus added functionality depending upon the product to which the Visa is aligned.

While certain legacy arrangements are supported, our standard offering requires Visas and Passports to be fulfilled and contracted via a CSS, which is discussed below.

Cloud Services Subscription ("CSS"). CSS is designed to streamline the procurement, administration, and payment process for us and our accounts. A CSS requires an upfront annual estimation of MTL, Visa and Passport consumption, and any Success Plan services expected for the upcoming year. A deposit for the annual estimated consumption is submitted in advance. Actual consumption is monitored and invoiced against the deposit on a calendar quarter basis. Accounts are charged only for what gets used and deposited amounts never expire.

Perpetual Licenses

We historically have sold perpetual licenses and continue to offer them to our accounts as an available option for most of our applications. Perpetual licenses are available for accounts that prefer to own their software licenses and may be sold with or without attaching a SELECT subscription. Historically, attachment and retention of the SELECT subscription has been high given the benefits of the SELECT subscription.

Professional Services

We offer professional services, including training, implementation, configuration, customization, and strategic consulting services for all types of projects as requested by our accounts. We perform projects on both a time and materials and a fixed fee basis. We also offer our services using contractual structures based on (i) delivery of the services in the form of subscription-like, packaged offerings that are annually recurring in nature; and (ii) delivery of our growing portfolio of Success Plans in standard offerings that offer a level of subscription service over and above the standard technical support offered to all accounts as part of their SELECT or Enterprise agreement. Over time, we expect professional revenues using subscription and subscription-like contractual structures to make up a greater proportion of our professional services revenues.

Examples of Typical Commercial Offering Combinations

For the year ended December 31, 2019, under Topic 606, 25% of our revenues derive from ELS or E365 offerings, and 36% of our revenues derive from SELECT subscriptions. Our users often add further sources of revenue upon each of these foundational subscription offerings. Typical examples are as follows:

- An account contracts for its application solutions under its ELS or E365 as described above. In addition, if the account also utilizes our ProjectWise enterprise solution, it will estimate its prospective annual usage and make an incremental deposit into its CSS account. The CSS account will be drawn down quarterly based on actual usage and consumption of Passports and Visas. We deliver professional services for E365 accounts via the embedded Success Plan. An ELS account may contract for professional services under fixed fee or "days and rates" episodic arrangements billed separately, or it may contract for professional services in the form of Success Plans, which it pays for via its CSS.
- A SELECT subscription account pays a fixed annual subscription fee based on the number of perpetual licenses for applications which it owns. The account may purchase additional perpetual licenses to which an additional annual SELECT subscription fee will apply for each. Alternatively, the account may grow its application use via term licenses, which will be billed quarterly in arrears based on actual term license consumption. Alternatively, the account may estimate its annual term license requirements and make a deposit into its CSS account, with quarterly draw down based on actual usage and consumption. Contracting for term license usage via the CSS provides the account a slight economic advantage. Similar to the ELS or E365 subscriber, if the SELECT subscriber also utilizes our ProjectWise enterprise system, prospective annual usage will be estimated and a deposit made into a CSS account. The CSS account will be drawn down quarterly based on actual usage and consumption of Passports and Visas. For any professional services, the account may contract for professional services under fixed fee or "days and rates" episodic arrangements billed separately, or it may contract for professional services in the form of Success Plans, which it will pay for via its CSS.

Key Business Metrics:

We regularly review the following key metrics to evaluate our business, measure our performance, identify trends in our business, prepare financial projections, and make strategic decisions.

	Year Ended December 31,			Twelve Months Ended June 30,	
	2017	2018	2019	2019	2020
Last twelve-months recurring revenues (Topic 606)	$ 521,923	$ 586,466	$ 631,097	$ 606,411	$ 665,659
Last twelve-months recurring revenues (Topic 605)	$ 523,502	$ 583,402	$ 636,899	$ 604,043	$ 670,825
Constant Currency:					
ARR growth rate	9 %	10 %	12 %	11 %	11 %
Account retention rate	98 %	98 %	98 %	98 %	98 %
Recurring revenues dollar-based net retention rate	105 %	107 %	108 %	106 %	110 %

Last twelve-months recurring revenues. Last twelve-months recurring revenues is calculated as recurring revenues recognized over the preceding twelve-month period. We define recurring revenues as subscriptions revenues that recur monthly, quarterly, or annually with specific or automatic renewal clauses and professional services revenues in which the underlying contract is based on a fixed fee and contains automatic annual renewal provisions.

Last twelve-months recurring revenues is presented using revenues recognized pursuant to Topic 606 as well as Topic 605 for all periods in order to enhance comparability during our transition to Topic 606. The Topic 606 unaudited amounts presented for the years ended December 31, 2017 and 2018 give effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2017 rather than January 1, 2019. For a reconciliation of the impact of adopting Topic 606 as if it had occurred as of January 1, 2017 on our audited consolidated statements of operations data for the years ended December 31, 2017 and 2018, see the section titled "Selected Consolidated Financial Data—Non-GAAP Financial Measures."

On an annual and trailing twelve-month basis, we expect our recurring revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605. This expectation is attributable to the annual, recurring nature of our subscription agreements. However, the conversion of our existing subscription users to

consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, as well as the term start date of new annual term license subscriptions, will introduce some volatility between annual and trailing twelve-month periods and impact period over period comparability. Specifically, in 2019, the conversion of existing ELS subscriptions to consumption-based E365 subscriptions resulted in a reduction of Topic 606 Enterprise subscriptions revenues of $11,248 when compared to Topic 605. This impact was partly offset by higher annual term license subscriptions revenues under Topic 606 of $5,714 due to the upfront recognition of license revenues of new subscriptions. See the section titled “Key Factors Impacting Comparability and Performance.”

We believe that last twelve-months recurring revenues is an important indicator of our performance during the immediately preceding twelve-month time period. We believe that we will continue to experience favorable growth in recurring revenues due to our strong account retention and recurring revenues dollar-based net retention rates as well as the addition of new accounts with recurring revenues. The last twelve-months recurring revenues under Topic 606 for the periods ended December 31, 2018, December 31, 2019, and June 30, 2020 compared to the last twelve-months of the preceding twelve-month period increased by $64,543 (or $59,900 under Topic 605), $44,631 (or $53,497 under Topic 605), and $59,248 (or $66,782 under Topic 605), respectively. These increases were primarily due to growth in ARR during the prior and current periods, which is primarily the result of consistent performance in our account retention rate and in our recurring revenues dollar-based net retention rate, as well as additional recurring revenues resulting from new accounts and acquisitions. For the twelve months ended December 31, 2019, 86% of our total revenues under Topic 606 (or 87% under Topic 605) were recurring revenues. For the twelve months ended June 30, 2020, 87% of our revenues were recurring revenues. Prospectively, we expect that this percentage is likely to remain consistent or modestly increase as we continue to target shifting episodic professional services revenues to subscriptions classified as recurring revenues.

Constant currency metrics. In reporting period-over-period results, we calculate the effects of foreign currency fluctuations and constant currency information by translating current period results using prior period average foreign currency exchange rates. Our definition of constant currency may differ from other companies reporting similarly named measures, and these constant currency performance measures should be viewed in addition to, and not as a substitute for, our operating performance measures calculated in accordance with U.S. GAAP.

ARR growth rate. Our ARR growth rate is the growth rate of our ARR, measured on a constant currency basis. Our ARR is defined as the sum of the annualized value of our portfolio of contracts that produce recurring revenue as of the last day of the reporting period, and the annualized value of the last three months of recognized revenues for our contractually recurring consumption-based software subscriptions with consumption measurement durations of less than one year. We believe that the last three months of recognized revenues, on an annualized basis, for our recurring software subscriptions with consumption measurement period durations of less than one year is a reasonable estimate of the annual revenues, given our consistently high retention rate and stability of usage under such subscriptions. ARR resulting from the annualization of recurring contracts with consumption measurement durations of less than one year, as a percentage of total ARR was 9%, 15%, and 25% for the years ended December 31, 2017, 2018, and 2019, respectively, and 18% and 29% for the twelve months ended June 30, 2019 and 2020, respectively. ARR is inclusive of the ARR of acquired companies as of the date they are acquired. We believe that ARR and ARR growth are important metrics indicating the scale and growth of our business. Furthermore, we believe ARR, considered in connection with our account retention rate and our recurring revenues dollar-based net retention rate, is a leading indicator of revenue growth. Our ARR as of June 30, 2020 was $697,682, calculated using the spot foreign exchange rates as of June 30, 2020.

There was no impact to our ARR growth rate from acquisitions for the year ended December 31, 2017. Our ARR growth rate was favorably impacted from acquisitions by 3% and 1% for the years ended December 31, 2018 and 2019, respectively, and by 1% and 2% for the twelve months ended June 30, 2019 and 2020, respectively.

Account retention rate. Our account retention rate for any given twelve-month period is calculated using the average currency exchange rates for the prior period, as follows: the prior period recurring revenues from all accounts with recurring revenues in the current and prior period, divided by total recurring revenues from all accounts during the prior period. The account retention rate is calculated using revenues recognized pursuant to Topic 605 for all periods in order to enhance comparability during our transition to Topic 606 as we do not have all information available to us necessary to present account retention rate pursuant to Topic 606 for any period prior to January 1, 2019. Our account retention rate is an important indicator that provides insight into the long-term value of our account

relationships and our ability to retain our account base. We believe that our consistent and high account retention rates illustrate our ability to retain and cultivate long-term relationships with our accounts.

Recurring revenues dollar-based net retention rate. Our recurring revenues dollar-based net retention rate is calculated using the average exchange rates for the prior period, as follows: the recurring revenues for the current period, including any growth or reductions from existing accounts, but excluding recurring revenues from any new accounts added during the current period, divided by the total recurring revenues from all accounts during the prior period. A period is defined as any trailing twelve months. The recurring revenues dollar-based net retention rate is calculated using revenues recognized pursuant to Topic 605 for all periods in order to enhance comparability during our transition to Topic 606 as we do not have all information available to us necessary to present recurring revenues dollar-based net retention rate pursuant to Topic 606 for any period prior to January 1, 2019. We believe our recurring revenues dollar-based net retention rate is a key indicator of our success in growing our revenues within our existing accounts. Given that for the twelve months ended December 31, 2019 recurring revenues represented 86% of our total revenues under Topic 606, this metric helps explain our revenue performance as primarily growth into existing accounts. We believe that our consistent and high recurring revenues dollar-based net retention rate illustrates our ability to consistently retain accounts and grow them.

As discussed above, we expect annual and trailing twelve-month recurring revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605 due to the annual, recurring nature of our subscription agreements. We, therefore, also expect, that our account retention rate and our recurring revenue dollar-based net retention rate under Topic 606 will be comparable to such metrics under Topic 605. However, under Topic 606, the conversion of our existing subscription users to consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, as well as the term start date of new subscriptions, will introduce some volatility between annual, and trailing twelve-month periods and impact period over period comparability. See the section titled “Key Factors Impacting Comparability and Performance.”

Our calculation of these metrics may not be comparable to other companies with similarly-titled metrics.

Non-GAAP Financial Measures:

In addition to our results determined in accordance with U.S. GAAP, we believe the below non-GAAP measures are useful in evaluating our operating performance. We use the below non-GAAP financial information, collectively, to evaluate our ongoing operations and for internal planning and forecasting purposes.

	Year Ended December 31,			Six Months Ended June 30,	
	2018	2019		2019	2020
	Topic 605	Topic 605	Topic 606	Topic 606	Topic 606
Adjusted EBITDA	$ 171,768	$ 186,598	$ 188,129	$ 79,384	$ 115,506
Adjusted Net Income	$ 132,246	$ 135,471	$ 135,049	$ 59,978	$ 89,203

For additional information, including the limitations of using non-GAAP financial measures, and reconciliations of the non-GAAP financial measures to the most directly comparable financial measures stated in accordance with U.S. GAAP, see the section titled “Selected Consolidated Financial Data—Non-GAAP Financial Measures.”

Key Factors Impacting Comparability and Performance:

Impact of Topics 606 and 340-40. On January 1, 2019, we adopted Topic 606, which supersedes substantially all existing revenue recognition guidance under U.S. GAAP. We adopted Topic 606 using the modified retrospective method, under which the cumulative effect of initially applying Topic 606 was recorded as a reduction to the opening balance of *Accumulated deficit* of $125,464 ($101,489, net of tax) as of January 1, 2019. We applied the standard only to contracts that were not completed as of the date of initial application. The comparative information has not been adjusted and continues to be reported under Topic 605.

The most significant impact from the adoption of Topic 606 relates to timing of revenue recognition for perpetual licenses and the accounting for certain of our subscription arrangements that include term-based software licenses bundled with support. Under Topic 605, revenue for perpetual licenses was recognized over a three-year period, while revenue attributable to the term-based software licenses was recognized ratably over the term. Under Topic 606, both perpetual license and prepaid term-based software license revenue will be recognized upfront upon delivery of the software license. Revenue recognition related to support, hosting, usage-based offerings, and services is substantially

unchanged, with support and hosting revenue recorded ratably over the contract term, usage-based revenue recognized upon usage or delivery, and services revenue as delivered.

On an annual and trailing twelve-month basis, we expect our subscriptions revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605. This expectation is attributable to the annual, recurring nature of our subscription agreements. However, quarterly subscription revenue and profitability trends will be impacted by the subscription term as well as the term start date of new and renewals subscriptions, due to the upfront revenue recognition of the associated term-license component. See the sections titled "—Quarterly Results of Operations" and "—Quarterly Trends" below.

Under Topic 605, our perpetual licenses revenues were recognized over a three-year period due to the portfolio balancing feature users obtain through their SELECT subscriptions. Under Topic 606, our perpetual licenses revenues are recognized upon delivery and will closely align with the respective license sales of the period.

Further, under Topic 606, the conversion of our existing subscription users to consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, will introduce some volatility between annual, quarterly, and trailing twelve-month periods and impact period over period comparability. This effect is because the term-based software license is recognized upfront upon delivery for prepaid subscription-based offerings, but upon usage for consumption-based offerings. For example, if an account renews an annual ELS at the beginning of July 2019, then we will recognize in 2019 the term-based software license of the annual subscription upon renewal for the twelve-month period from July 1, 2019 to June 30, 2020. However, if such account instead switches from our ELS offering to our consumption based E365 offering, then we will only recognize the distinct license component for the consumption period from July 1, 2019 to December 31, 2019 in 2019.

See Note 2 to our audited consolidated financial statements for the year ended December 31, 2019 included elsewhere in this prospectus for further information on the impact upon adoption of Topics 606 and 340-40 as of January 1, 2019.

Impact of foreign currency. A portion of our revenues and operating expenses were derived from outside the United States and as such, were denominated in various foreign currencies, including most significantly: Euros, British Pounds, Australian Dollars, Canadian Dollars, and Chinese Yuan Renminbi. Our financial results are therefore affected by changes in foreign currency rates. In 2019, 47% of our revenues were denominated in various foreign currencies. Correspondingly, in 2019, 46% of our operating expenses were denominated in various foreign currencies. Other than the natural hedge attributable to matching revenues and expenses in the same currencies, we do not currently hedge foreign currency exposure. Accordingly, our results of operations have been, and in the future will be, affected by changes in foreign exchange rates.

We identify the effects of foreign currency on our operations and present constant currency growth rates and fluctuations because we believe exchange rates are an important factor in understanding period to period comparisons and enhance the understanding of our results and evaluation of our performance. In reporting period to period results, we calculate the effects of foreign currency fluctuations and constant currency information by translating current period results using prior period average foreign currency exchange rates. Our definition of constant currency may differ from other companies reporting similarly named measures, and these constant currency performance measures should be viewed in addition to, and not as a substitute for, our operating performance measures calculated in accordance with U.S. GAAP.

Acquisitions. Historically, we have enhanced our business with acquisitions of businesses, software solutions, and technologies. Going forward, we plan to selectively acquire adjacent software solutions that can be sold broadly across our account base, as well as to acquire new technologies that we can leverage across our existing software solution portfolio. We completed seven, four, two, and three acquisitions during the years ended December 31, 2018 and December 31, 2019 and the six months ended June 30, 2019 and 2020, respectively.

In accordance with Rule 3-05 of Regulation S-X, separate financial statements are not required for any of our acquisitions individually or in the aggregate.

Income taxes. The U.S. Tax Cuts and Jobs Act was enacted on December 22, 2017 and resulted in a provisional tax expense primarily due to the one-time transition tax on accumulated foreign subsidiary earnings and deferred tax impacts. We completed the accounting for the effects of the U.S. Tax Cuts and Jobs Act in the year ended December 31, 2018 and recorded a $4,318 increase to tax expense related to provisional amounts recorded in 2017. In

October 2018, we had intercompany sales of certain intangible operating assets between our foreign subsidiaries, which resulted in a non-recurring net tax benefit of $46,369.

Impact of COVID-19. In March 2020, the World Health Organization declared a global pandemic related to the rapidly growing outbreak of the disease COVID-19, caused by a novel strain of coronavirus, SARS-CoV-2. The COVID-19 outbreak and certain preventative or protective actions that governments, businesses and individuals have taken in respect of COVID-19 have resulted in global business disruptions.

In response to the COVID-19 pandemic, we implemented a number of initiatives to ensure the safety of our colleagues and enable them to move to a work from home environment seamlessly and continue working effectively. These initiatives included providing our colleagues with necessary equipment, making certain that all colleagues had means of video and audio communications online, and guaranteeing that our network bandwidth was sufficient. Our business model is such that we had minimal disruption to our ability to deliver our solutions to accounts, and we did not have any loss of productivity during this transition. Almost all of our colleagues have been working from home since March 16, 2020, with a minority of our colleagues working in our office environments on a voluntary basis and abiding by appropriate distancing and sanitary regulations for their region. We communicated regularly and provided on-demand learning and support to our colleagues throughout the transition period. Based on a May 2020 internal survey, a majority of our colleagues are confident in the decisions that Bentley leadership is making regarding employee well-being and safety during this pandemic, and a majority of our colleagues believe that Bentley's response to and communication regarding COVID-19 has been timely and helpful.

The impact of the pandemic on our financial performance has been modest; our revenues have continued to grow given the mission critical nature of our solutions. For the months of March and April, our accounts' usage of our applications was down approximately 3-5% when compared to levels from the same periods in 2019; however, these metrics returned to pre-COVID-19 levels in June 2020. The modest and temporary dip in usage had limited impact on our recurring revenues, which are comprised primarily of longer term contracts. The growth of our revenues from perpetual licenses and professional services has been impacted as selected accounts have shifted spend to subscription solutions or delayed new projects.

Moreover, we were quick to find ways to support our accounts and users, including the launch of a "Bentley Has Your Back" campaign to help our accounts take full advantage of their Bentley software. This campaign included producing over 50 self-help documents, 20 webinars, and several messages guiding users on various topics including how Bentley's solutions should be configured when working with limited bandwidth, how to use a SmartTV as a monitor, and how to leverage specific offerings such as ProjectWise to facilitate collaboration in their own businesses in remote working environments. This guidance and assistance was well received by accounts and we believe helped maximize usage during the observed trough in March and April.

We have also taken measures to reduce selected operating expenses, including various costs associated with travel and facilities. Much of those resulting savings have been or will be re-invested in a portfolio of businesses outside of our core software business, with the objective of cultivating an ecosystem of digital integrator businesses.

Our business benefits from a resilient business model backed by industry tailwinds and a strong financial profile. We believe that significant public and private investment will continue to drive spend for infrastructure globally, which will continue to drive demand for our solutions. Additionally, we do not have any material account concentration; no single account or group of affiliated accounts represented more than 2.5% of our revenues for the year ended December 31, 2019. As of June 30, 2020, we had $126 million of cash and cash equivalents, and $293 million was available under the Credit Facility.

Components of Results of Operations:

We manage our business globally within one operating segment, the development and marketing of computer software and related services, which is consistent with how our chief operating decision maker reviews and manages our business.

Revenues:

We generate revenues from subscriptions, perpetual licenses, and professional services.

Subscriptions

SELECT subscriptions: We provide annual recurring subscriptions that accounts can elect to add to a new or previously purchased perpetual license. SELECT provides accounts with benefits, including upgrades, comprehensive technical support, pooled licensing benefits, annual portfolio balancing exchange rights, learning benefits, certain Azure-based cloud collaboration services, mobility advantages, and access to other available benefits. Under Topic 606, SELECT subscriptions revenues are recognized as distinct performance obligations are satisfied. Under Topic 605, SELECT subscriptions revenue was recognized on a ratable basis, over the subscription term.

Enterprise subscriptions: We provide Enterprise subscription offerings that provides our largest accounts with complete and unlimited global access to our comprehensive portfolio of solutions. ELS provides access for a prepaid annual fee. E365, which was introduced during the fourth quarter of 2018, provides unrestricted access to our comprehensive software portfolio, similar to ELS, however is charged based upon daily usage. The daily usage fee also includes maintenance and Success Plan services, which are designed to achieve business outcomes through more efficient and effective use of our software. The ELS and E365 programs both contain a distinct term license component. Under Topic 606, ELS revenue is recognized as the distinct performance obligations are satisfied. Under Topic 605, ELS revenue was recognized on a ratable basis, over the subscription term. E365 revenue is recognized based upon usage incurred by the account under both Topic 606 and 605.

Term license subscriptions: We provide annual, quarterly, and monthly term licenses for our software products. ATL subscriptions are generally prepaid annually for named user access to specific products. QTL subscriptions allow accounts to pay quarterly in arrears for licenses usage that is beyond their SELECT contracted quantities. MTL subscriptions are identical to QTL subscriptions, except for the term of the license, and the manner in which they are monetized. MTL subscriptions require a CSS, which is described below.

Visas and Passports are quarterly or annual term licenses enabling accounts to access specific project or enterprise information and entitle certain functionality of our ProjectWise and AssetWise systems. Our standard offerings are usage based with monetization through our CSS program. Under Topic 606, annual, quarterly, and monthly term licenses revenues are recognized as the distinct performance obligations for each are satisfied. Billings in advance are recorded as *Deferred revenues* in the consolidated balance sheets. Under Topic 605, the subscriptions revenues were recognized on a ratable basis, over the subscription term. QTL, MTL, Visas and Passports subscriptions are recognized based upon usage incurred by the account under both Topic 606 and 605.

CSS is a program designed to streamline the procurement, administration, and payment process. The program requires an estimation of annual usage for CSS eligible offerings and a deposit of funds in advance. Actual consumption is monitored and invoiced against the deposit on a calendar quarter basis. CSS balances not utilized for eligible products or services may roll over to future periods or are refundable. Paid and unconsumed CSS balances are recorded in *Accruals and other current liabilities* in the consolidated balance sheets. Software and services consumed under CSS are recognized pursuant to the applicable revenue recognition guidance for the respective software or service and classified as subscriptions or services based on their respective nature.

Perpetual licenses

Perpetual licenses may be sold with or without attaching a SELECT subscription. Historically, attachment and retention of the SELECT subscription has been high given the benefits of the SELECT subscription discussed above. Perpetual licenses revenues are recognized upon delivery of the license to the user under Topic 606. Under Topic 605, we recognized perpetual licenses revenues ratably over a three-year term due to the portfolio balancing feature users obtain through their SELECT subscriptions.

Services

We provide professional services including training, implementation, configuration, customization, and strategic consulting services. We perform projects on both a time and materials and a fixed fee basis. Our recent and preferred contractual structures for delivering professional services include (i) delivery of services in the form of subscription-like, packaged offerings that are annually recurring in nature, and (ii) delivery of our growing portfolio of Success Plans. Success Plans are standard offerings that offer a level of subscription service above the standard technical support offered to all accounts as part of their SELECT or Enterprise agreement. Revenues are recognized as services are performed under both Topic 606 and 605.

Headcount-related costs

For the year ended December 31, 2019, 80% of our aggregate cost of revenues, research and development, selling and marketing, and general and administrative costs were represented by what we refer to herein as "headcount-related" costs. These costs include the salary costs of our colleagues (our employees) and the corresponding incentives, benefits, employment taxes, and travel-related costs. Our headcount-related costs are variable in nature. We actively manage these costs to align to our trending run rate of revenue performance, with the objective of enhancing visibility and predictability of resulting operating profit margins.

Cost of subscriptions, licenses, and services

Cost of subscriptions and licenses. Cost of subscriptions and licenses includes salaries and other related costs, including the depreciation of property and equipment and the amortization of capitalized software costs associated with servicing software subscriptions, the amortization of intangible assets associated with acquired software and technology, channel partner compensation for providing sales coverage to subscribers, as well as cloud-related costs incurred for servicing our accounts using cloud deployed hosted solutions and our license administration platform.

Cost of services. Cost of services includes salaries for internal and third-party personnel and related overhead costs, including depreciation of property and equipment, for providing training, implementation, configuration, and customization services to accounts, amortization of capitalized software costs, and related out-of-pocket expenses incurred.

Operating expenses

Research and development. Research and development expenses, which are generally expensed as incurred, primarily consist of personnel and related costs of our research and development staff, including salaries, benefits, bonuses, stock-based compensation, and costs of certain third-party contractors, as well as allocated overhead costs. We expense software development costs, including costs to develop software products or the software component of products to be sold, leased, or marketed to external accounts, before technological feasibility is reached. Technological feasibility is typically reached shortly before the release of such products and as a result, development costs that meet the criteria for capitalization were not material for the periods presented.

We capitalize certain development costs related to certain projects under our ACDP (our structured approach to an in-house business incubator function) once technological feasibility is established. Technological feasibility is established when a detailed program design has been completed and documented; we have established that the necessary skills, hardware, and software technology are available to produce the product; and there are no unresolved high-risk development issues. Once the software is ready for its intended use, amortization is recorded over the software's estimated useful life (generally three years). During the years ended December 31, 2018 and December 31, 2019 and the six months ended June 30, 2019 and June 30, 2020, total costs capitalized under the ACDP were $5,735, $6,060, $2,181 and $4,260, respectively. Additionally, during the years ended December 31, 2018 and December 31, 2019 and the six months ended June 30, 2019 and June 30, 2020, total ACDP related amortization recorded in *Costs of subscriptions and licenses* was $2,052, $3,516, $1,448 and $2,022, respectively.

Selling and marketing. Selling and marketing expenses include salaries, benefits, bonuses, and stock-based compensation expense for our selling and marketing colleagues, the expense of travel, entertainment and training for such personnel, online marketing, product marketing and other brand-building activities, such as advertising, trade shows, and expositions, various sales and promotional programs, and costs of computer equipment and facilities used in selling and marketing activities. We anticipate that we will continue to make strategic investments in our global business systems and methods to enhance major account sales activities and to support our worldwide sales and marketing strategies, and the business in general. Topic 340-40 requires the capitalization of certain incremental costs of obtaining a contract, which impacts the period in which we record sales commission expense. Historically, under Topic 605, we recognized commissions expense as incurred. Under Topic 340-40, we are required to recognize these expenses over the period of benefit associated with these costs, resulting in a deferral of certain contract costs each period. The contract costs are amortized based on the economic life of the goods and services to which the contract costs relate. We have determined that certain sales incentive programs meet the requirements to be capitalized. We apply a practical expedient to expense costs as incurred for costs to obtain a contract with a customer when the amortization period would have been one year or less. These costs include our internal sales force compensation

program and certain channel partner sales incentive programs for which the annual compensation is commensurate with annual sales activities.

General and administrative. General and administrative expenses include salaries, bonuses, benefits, and stock-based compensation expense for our finance, human resources, and legal colleagues, the expense of travel, entertainment, and training for such personnel, professional fees for legal and accounting services, and costs of computer equipment and facilities used in general and administrative activities.

We expect to recognize certain non-recurring costs as part of our transition to a publicly-traded company, consisting of professional fees and other expenses. These fees are being expensed in the period incurred. We expect to incur $ in audit fees, $ in legal fees and expenses and $ in underwriting discounts and commissions applicable to the sale of shares by the selling stockholders in connection with this offering. Following the completion of this offering, we expect to continue to incur additional expenses as a result of operating as a public company, including costs to comply with the rules and regulations applicable to companies listed on a U.S. securities exchange and costs related to compliance and reporting obligations pursuant to the rules and regulations of the SEC. In addition, as a public company, we expect to incur increased expenses in the areas of insurance, investor relations, and professional services. As a result, we expect the dollar amount of our general and administrative expenses to increase for the foreseeable future. We expect, however, that our general and administrative expenses will decrease as a percentage of our revenues over time, although the percentage may fluctuate from period to period depending on fluctuations in our revenue and the timing and extent of our general and administrative expenses.

Amortization of purchased intangibles. Amortization of purchased intangibles includes the amortization of acquired non-product related intangible assets, primarily customer relationships, trademarks, and non-compete agreements recorded in connection with completed acquisitions.

Interest expense, net. Interest expense, net primarily represents interest associated with the Credit Facility, amortization of deferred financing costs, and interest income from our investments in money market funds.

Other income (expense), net. Other income (expense), net primarily consists of foreign currency translation results derived primarily from U.S. Dollar denominated intercompany balances, cash and cash equivalents, and accounts receivable held by foreign subsidiaries with non-U.S. Dollar functional currencies.

Provision for income taxes. Provision for income taxes includes the aggregate consolidated income tax expense for U.S. domestic and foreign income taxes.

Equity in loss of joint venture, net of tax. Equity in loss of joint venture includes our proportional share of loss in a joint venture accounted for under the equity method.

Results of operations:

The following table sets forth selected consolidated statements of operations data for each of the periods indicated:

	Year Ended December 31,		Six Months Ended June 30,	
	2018	2019	2019	2020
Revenues:				
Subscriptions	$ 557,421	$ 608,300	$ 290,147	$ 327,837
Perpetual licenses	61,065	59,693	24,468	23,193
Subscriptions and licenses	618,486	667,993	314,615	351,030
Services	73,224	68,661	32,529	27,950
Total revenues	691,710	736,654	347,144	378,980
Cost of revenues:				
Cost of subscriptions and licenses	55,113	71,578	30,831	43,128
Cost of services	76,211	72,572	38,367	30,836
Total cost of revenues	131,324	144,150	69,198	73,964
Gross profit	560,386	592,504	277,946	305,016
Operating expenses:				
Research and development	175,032	183,552	91,861	89,353
Selling and marketing	160,635	155,294	75,168	65,727
General and administrative	89,328	97,580	46,307	52,269
Amortization of purchased intangibles	14,000	14,213	6,852	7,115
Total operating expenses	438,995	450,639	220,188	214,464
Income from operations	121,391	141,865	57,758	90,552
Interest expense, net	(8,765)	(8,199)	(4,474)	(2,516)
Other income (expense), net	236	(5,557)	(1,747)	(6,985)
Income before income taxes	112,862	128,109	51,537	81,051
Provision for income taxes	(29,250)	23,738	5,119	11,440
Equity in loss of joint venture, net of tax	—	1,275	—	866
Net income	142,112	103,096	46,418	68,745
Less: Net income attributable to participating securities	(4)	(8)	(12)	—
Net income per share attributable to Class A and Class B common shares	$ 142,108	$ 103,088	$ 46,406	$ 68,745
Net income per share:				
Basic	$ 0.50	$ 0.36	$ 0.16	$ 0.24
Diluted	$ 0.49	$ 0.35	$ 0.16	$ 0.23
Weighted average shares outstanding, basic	285,805,096	284,625,642	285,529,476	286,068,766
Weighted average shares outstanding, diluted	292,624,496	293,796,707	293,633,255	295,595,234

Comparison of the Six Months Ended June 30, 2019 and June 30, 2020

In reporting period-over-period results, we calculate the effects of foreign currency fluctuations and constant currency information by translating current period results using prior period average foreign currency exchange rates. Our definition of constant currency may differ from other companies reporting similarly named measures, and these constant currency performance measures should be viewed in addition to, and not as a substitute for, our operating performance measures calculated in accordance with U.S. GAAP.

Revenues

	Six Months Ended June 30,		Comparison		
	2019	2020	Amount	%	Constant Currency %
Revenues:					
Subscriptions	$ 290,147	$ 327,837	$ 37,690	13.0 %	14.3 %
Perpetual licenses	24,468	23,193	(1,275)	(5.2)%	(2.9)%
Subscriptions and licenses	314,615	351,030	36,415	11.6 %	13.0 %
Services	32,529	27,950	(4,579)	(14.1)%	(13.0)%
Total revenues	$ 347,144	$ 378,980	$ 31,836	9.2 %	10.5 %

Total revenues increased by $31,836, or 9.2%, to $378,980 for the six months ended June 30, 2020. This increase was driven primarily by improvements in our organic performance of $25,182, and to a lesser extent, the impact from acquisitions of $11,384, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $4,730. On a constant currency basis, our revenues increased by 10.5% for the six months ended June 30, 2020 as compared to the prior period.

- *Subscriptions*. Subscriptions revenues increased by $37,690, or 13.0%, for the six months ended June 30, 2020 as compared to the six months ended June 30, 2019. This increase was driven primarily by improvements in our organic performance of $35,510, and to a lesser extent, the impact from acquisitions of $5,980, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $3,800. On a constant currency basis, our subscriptions revenues increased by 14.3% for the six months ended June 30, 2020 as compared to the prior period.

  The increase in organic performance was primarily due to expansion within our existing accounts, as reflected by our recurring revenues dollar-based net retention rate of 110%. Approximately 3% of the increase was attributed to new accounts. Approximately 50% of our organic performance expansion was driven by ProjectWise and civil design products.

- *Perpetual licenses*. Perpetual licenses revenues decreased by $1,275, or 5.2%, for the six months ended June 30, 2020 as compared to the six months ended June 30, 2019. This decrease was driven by a reduction in our organic performance of $1,893, as well as by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $570, partially offset by the impact from acquisitions of $1,188. On a constant currency basis, our perpetual licenses revenues decreased by 2.9% for the six months ended June 30, 2020 as compared to the prior period.

  We observed a decrease in organic performance during the three months ended June 30, 2020 as certain accounts delayed purchase decisions or shifted spend to subscription solutions due to COVID-19.

- *Services*. Services revenues decreased by $4,579, or 14.1%, for the six months ended June 30, 2020 as compared to the six months ended June 30, 2019. This decrease was driven primarily by a reduction in our organic performance of $8,435, as well as by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $360, partially offset by the impact from acquisitions of $4,216. On a constant currency basis, our services revenues decreased by 13.0% for the six months ended June 30, 2020 as compared to the prior period.

  The decrease in organic performance was primarily due to the winding down or completion of several larger services projects during 2019 and early 2020, COVID-19 related delays of new projects while social distancing measures are in place, the inclusion of learning benefits in our subscription offerings, and the partial redeployment of our services colleagues to support Success Plan services of our E365 subscription offering.

Revenues by Geographic Area

Revenues are allocated to individual countries based upon the location of the users. Revenues by geographic area are as follows:

	Six Months Ended June 30,		Comparison		
	2019	2020	Amount	%	Constant Currency %
Revenues by Geographic Area					
Americas	$ 167,440	$ 185,838	$ 18,398	11.0 %	11.4 %
EMEA	115,811	121,578	5,767	5.0 %	7.3 %
APAC	63,893	71,564	7,671	12.0 %	14.1 %
Total revenues by geographic area	$ 347,144	$ 378,980	$ 31,836	9.2 %	10.5 %

- *Americas*. Revenues from the Americas increased by $18,398, or 11.0%, for the six months ended June 30, 2020 as compared to the six months ended June 30, 2019. This increase was driven primarily by improvements in our organic performance of $12,274 and, to a lesser extent, the impact from acquisitions of $6,789, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $665. On a constant currency basis, our revenues from the Americas increased by 11.4% for the six months ended June 30, 2020 as compared to the prior period.

  The increase in organic performance was primarily due to expansion of our recurring revenues from our existing accounts in the United States and Canada. Approximately 50% of our organic performance expansion was driven by ProjectWise.

- *EMEA*. Revenues from EMEA increased by $5,767, or 5.0%, for the six months ended June 30, 2020 as compared to the six months ended June 30, 2019. This increase was driven primarily by improvements in our organic performance of $4,350 and, to a lesser extent, the impact from acquisitions of $4,113, partly offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $2,696. On a constant currency basis, our revenues from EMEA increased by 7.3% for the six months ended June 30, 2020 as compared to the prior period.

  The increase in organic performance was primarily due to expansion of our recurring revenues throughout the region. Approximately 60% of our organic performance expansion was driven by ProjectWise.

- *APAC*. Revenues from APAC increased by $7,671, or 12.0%, for the six months ended June 30, 2020 as compared to the six months ended June 30, 2019. This increase was driven primarily by improvements in our organic performance of $8,558 and, to a lesser extent, the impact from acquisitions of $482, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $1,369. On a constant currency basis, our revenues from APAC increased by 14.1% for the six months ended June 30, 2020 as compared to the prior period.

  The increase in organic performance was primarily due to expansion of our recurring revenues from our existing accounts in Australia and China. Approximately 50% of our organic performance expansion was driven by ProjectWise and Offshore Structural Analysis products.

Cost of Revenues

	Six Months Ended June 30,		Comparison		
	2019	2020	Amount	%	Constant Currency %
Cost of subscriptions and licenses	$ 30,831	$ 43,128	$ 12,297	39.9 %	41.9 %
Cost of services	38,367	30,836	(7,531)	(19.6)%	(17.9)%
Total cost of revenues	$ 69,198	$ 73,964	$ 4,766	6.9 %	8.7 %

Cost of revenues increased by $4,766, or 6.9%, to $73,964 for the six months ended June 30, 2020. This increase was driven primarily by an increase in cost of subscriptions and licenses, partially offset by lower cost of services relative to the prior period. On a constant currency basis, total cost of revenues increased by 8.7% for the six months ended June 30, 2020 as compared to the prior period.

Cost of subscriptions and licenses increased 39.9%, or 41.9% in constant currency, as compared to the six months ended June 30, 2019. On a constant currency basis, this increase was primarily due to an increase in hosting costs of approximately $5,600, an increase in salaries, incentive compensation, and other headcount-related costs of approximately $5,000, and an increase in amortization expense of approximately $1,100 for software and technology.

Cost of services decreased by 19.6%, or 17.9% in constant currency, as compared to the six months ended June 30, 2019. On a constant currency basis, the decrease was primarily due to a decrease in salaries, incentive compensation, and other headcount-related costs of approximately $2,600 as well as a decrease in the recognition of previously capitalized costs related to certain professional services projects of approximately $3,700.

Operating Expenses

	Six Months Ended June 30,		Comparison		
	2019	2020	Amount	%	Constant Currency %
Research and development	$ 91,861	$ 89,353	$ (2,508)	(2.7)%	(1.3)%
Selling and marketing	75,168	65,727	(9,441)	(12.6)%	(10.6)%
General and administrative	46,307	52,269	5,962	12.9 %	13.7 %
Amortization of purchased intangibles	6,852	7,115	263	3.8 %	5.3 %
Total operating expenses	$ 220,188	$ 214,464	$ (5,724)	(2.6)%	(1.1)%

Research and development. Research and development expenses decreased 2.7%, or 1.3% in constant currency, as compared to the six months ended June 30, 2019. On a constant currency basis, the decrease was primarily due to COVID-19 related modification to employee travel and variable compensation plans resulting in a net decrease in salaries, incentive compensation, and other headcount-related costs of approximately $700, as well as a decrease in facility-related costs of approximately $600.

Selling and marketing. Selling and marketing expenses decreased 12.6%, or 10.6% in constant currency, as compared to the six months ended June 30, 2019. The decrease is primarily caused by COVID-19 related modification to employee travel and variable compensation plans resulting in a net decrease in salaries, incentive compensation, and other headcount-related costs of approximately $6,000, as well as a reduction in promotional costs of $1,100, substantially from rationalizing our marketing spend and shifting to virtual events given the evolving business environment as a result of COVID-19.

General and administrative. General and administrative expenses increased 12.9%, or 13.7% in constant currency, as compared to the six months ended June 30, 2019. On a constant currency basis, the increase was primarily caused by an increase in salaries, incentive compensation, and other headcount-related costs of approximately $4,300, as well as approximately $1,600 related to acquisition and integration costs and other corporate initiatives.

Amortization of purchased intangibles. Amortization of purchased intangibles increased by 3.8%, or 5.3% in constant currency, as compared to the six months ended June 30, 2019. The increase was primarily attributable to acquisitions that closed in the last six months of 2019 and the first six months of 2020.

Interest Expense, Net

	Six Months Ended June 30,	
	2019	2020
Interest expense	$ (5,021)	$ (2,846)
Interest income	547	330
Total interest expense, net	$ (4,474)	$ (2,516)

	Six Months Ended June 30,	
	2019	2020
Bank credit facility	$ (4,600)	$ (2,544)
Amortization of deferred financing costs	(277)	(277)
Other, net	403	305
Total interest expense, net	$ (4,474)	$ (2,516)

Our net interest expense for the six months ended June 30, 2020 decreased from the prior year period primarily due to a lower outstanding balance on the Credit Facility combined with a lower average interest rate.

Other Income (Expense), Net

	Six Months Ended June 30,	
	2019	2020
Foreign exchange loss	$ (1,588)	$ (4,263)
Other income, net	(159)	(2,722)
Total other income (expense), net	$ (1,747)	$ (6,985)

Other income (expense), net for the six months ended June 30, 2019 and 2020 primarily consists of foreign currency translation losses of $1,588 and $4,263, respectively. The foreign currency translation losses derive primarily from U.S. Dollar denominated intercompany balances, cash and cash equivalents, and accounts receivable held by foreign subsidiaries with non-U.S. Dollar functional currencies. These U.S. Dollar denominated balances are being translated into their functional currencies at the rates in effect at the balance sheet date and fully eliminate in consolidation. The gains and losses from such translations are included in *Other income (expense), net*. For the six months ended June 30, 2019 and 2020, intercompany loan balances resulted in unrealized foreign currency translation losses of $1,680 and $1,765, respectively.

Other income (expense), net also includes a loss from the change in fair value of the Company's interest rate swap of $4,174, partly offset by a gain from the change in fair value of an acquisition contingent consideration of $1,390 for the six months ended June 30, 2020.

Provision for Income Taxes

The income tax provisions for the six months ended June 30, 2019 and 2020 were based on the estimated annual effective income tax rates adjusted for discrete items occurring during the periods presented. During the six months ended June 30, 2019 and 2020, we recognized an aggregate consolidated income tax expense of $5,119 and $11,440, respectively, for U.S. domestic and foreign income taxes. During the six months ended June 30, 2019 and 2020, we recorded a discrete tax benefit of $3,653 and $6,423, respectively, associated with stock-based compensation. The effective income tax rate of 9.9% for the six months ended June 30, 2019 was lower than the effective income tax rate of 14.1% for the same period in the current year primarily as a result of a change in the timing and mix of U.S. and foreign income.

Equity in Loss of Joint Venture, Net of Tax

In September 2019, we and Topcon Positioning Systems, Inc. formed DCW. DCW's focus is to transform the construction industry from its legacy document-centric paradigm by simplifying and enabling digital automated workflows and processes, technology integration, and digital twinning services for infrastructure.

We have a 50% ownership in DCW and apply the equity method of accounting for our investment in DCW. Under the equity method, we recorded our initial investment in the joint venture at cost and subsequently adjust that investment by our proportional share of income or losses in DCW. For the six months ended June 30, 2020, the equity in loss, net of tax, related to the investment was $866.

Net Income

	Six Months Ended June 30,	
	2019	2020
Net income	$ 46,418	$ 68,745

For the six months ended June 30, 2020, net income increased by $22,327, or 48%, compared to the six months ended June 30, 2019. The change is due to the factors stated above.

Adjusted EBITDA and Adjusted Net Income

	Six Months Ended June 30,	
	2019	2020
Adjusted EBITDA	$ 79,384	$ 115,506
Adjusted Net Income	$ 59,978	$ 89,203

For the six months ended June 30, 2020, Adjusted EBITDA increased by $36,122 compared to the six months ended June 30, 2019. These increases were primarily due to an increase in income from operations, net of adjustments discussed in the section titled “Selected Consolidated Financial Data.”

Adjusted EBITDA as a percentage of revenue was 23% and 30% for the six months ended June 30, 2019 and 2020, respectively.

For the six months ended June 30, 2020, Adjusted Net Income increased by $29,225 compared to the six months ended June 30, 2019. These increases were primarily due to an increase in income from operations net of adjustments discussed in the section titled “Selected Consolidated Financial Data.”

Adjusted Net Income as a percentage of revenue was 17% and 24% for the six months ended June 30, 2019 and 2020, respectively.

For additional information, including the limitations of using non-GAAP financial measures, and reconciliations of the non-GAAP financial measures to the most directly comparable financial measures stated in accordance with U.S. GAAP, see the section titled “Selected Consolidated Financial Data—Non-GAAP Financial Measures.”

Comparison of the Years Ended December 31, 2018 and 2019

In reporting period-over-period results, we calculate the effects of foreign currency fluctuations and constant currency information by translating current period results using prior period average foreign currency exchange rates. Our definition of constant currency may differ from other companies reporting similarly named measures, and these constant currency performance measures should be viewed in addition to, and not as a substitute for, our operating performance measures calculated in accordance with U.S. GAAP.

Revenues

	Year Ended December 31,		Comparison					
	2018	2019						
	As reported Topic 605	As reported Topic 606	Amount	%	Impact from Adoption of Topic 606	Remaining Difference	%	Constant Currency %
Revenues:								
Subscriptions	$ 557,421	$ 608,300	$ 50,879	9.1 %	$ (5,625)	$ 56,504	10.1 %	12.9 %
Perpetual licenses	61,065	59,693	(1,372)	(2.2)%	7,174	(8,546)	(14.0)%	(11.1)%
Subscriptions and licenses	618,486	667,993	49,507	8.0 %	1,549	47,958	7.8 %	10.5 %
Services	73,224	68,661	(4,563)	(6.2)%	256	(4,819)	(6.6)%	(4.8)%
Total revenues	$ 691,710	$ 736,654	$ 44,944	6.5 %	$ 1,805	$ 43,139	6.2 %	8.9 %

For the year ended December 31, 2019, revenues as reported under Topic 606 increased by $44,944, or 6.5%, to $736,654 as compared to $691,710 under Topic 605 for the year ended December 31, 2018, with subscriptions revenues increasing by 9.1%, perpetual licenses revenues decreasing by 2.2%, and services revenues decreasing by 6.2%.

The change in revenues was significantly impacted by the adoption of Topic 606, which impacted the timing, allocation, and presentation of subscriptions, perpetual licenses, and services revenues. The most significant impact from the adoption of Topic 606 relates to timing of revenue recognition for perpetual licenses and the accounting for certain of our subscription arrangements that include term-based software licenses bundled with support. Under Topic 606, both perpetual license and prepaid term-based software license revenues are recognized upfront upon delivery of the software license. Under Topic 605, revenue for perpetual licenses was recognized over a three-year period, while revenue attributable to the term-based software licenses was recognized ratably over the term. Revenue recognition related to support, hosting, usage-based offerings, and services is substantially unchanged, with support and hosting revenue recorded ratably over the contract term, usage-based revenue recognized upon usage or delivery, and services revenue recognized as delivered. The adoption of Topic 606 resulted in a net reduction in subscriptions revenues of $5,625, and a net increase in perpetual licenses revenues of $7,174 for the year ended December 31, 2019. The Company's services revenues have not been significantly impacted by the adoption of Topic 606. On an annual basis, we expect our subscriptions revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605. This expectation is attributable to the annual, recurring nature of our subscription agreements. However, under Topic 606, the conversion of our existing subscription users to consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, as well as the term start date of new annual term license subscriptions, introduces some volatility between periods and impacts period-over-period comparability. For additional information, see the section titled "Key Factors Impacting Comparability and Performance." For additional information on the impact of adoption of Topic 606 on our results, see Note 2 to the audited consolidated financial statements included elsewhere in the prospectus.

Net of the impact from adopting Topic 606 of $1,805, total revenues increased by $43,139, or 6.2%, for the year ended December 31, 2019. This increase was driven primarily by improvements in our organic performance of $53,827, and to a lesser extent, the impact from acquisitions of $7,597, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $18,285. On a constant currency basis and net of the impact from adopting Topic 606, our revenues increased by 8.9% for the year ended December 31, 2019 as compared to the prior period.

- *Subscriptions*. Net of the decrease from adopting Topic 606 of $5,625, subscriptions revenues increased by $56,504, or 10.1%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. This increase was driven primarily by improvements in our organic performance of $61,325, and to a lesser extent, the impact from acquisitions of $10,448, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $15,269. On a constant currency basis and net of the impact from adopting Topic 606, our subscriptions revenues increased by 12.9% for the year ended December 31, 2019 as compared to the prior period.

  The increase in organic performance was primarily due to expansion within our existing accounts, as reflected by our recurring revenues dollar-based net retention rate of 108%. Approximately 2% of the increase was attributed to new accounts. Approximately 50% of our organic performance expansion was driven by ProjectWise and civil design products.

- *Perpetual licenses*. Net of the increase from adopting Topic 606 of $7,174, perpetual licenses revenues decreased by $8,546, or 14.0%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. This decrease was driven by a reduction in our organic performance of $2,735, the net negative impact from acquisitions and acquisition integration of $4,069, as well as by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $1,742. On a constant currency basis and net of the impact from adopting Topic 606, our perpetual licenses revenues decreased by 11.1% for the year ended December 31, 2019 as compared to the prior period.

  The negative impact from acquisition integration of $4,498 relates to a 2018 acquisition. In 2018 we recognized perpetual license revenues from this acquisition of $4,061. License revenues were recognized upon delivery. Upon completing acquisition integration and beginning in 2019, such license sales were subject to our SELECT subscription program, including the portfolio balancing performance obligation. As a result, beginning in 2019 we would have recognized such license revenues ratably over a three-year period under Topic 605. In connection with this acquisition, we sold $6,317 of licenses in 2019, of

which $823 was ratably recognized in 2019 and the balance of $5,494 was deferred under Topic 605. For comparison purposes, under Topic 606, revenue of $6,317 was recognized upon delivery in 2019.

- *Services*. Net of the increase from adopting Topic 606 of $256, services revenues decreased by $4,819, or 6.6%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. This decrease was driven primarily by a reduction in our organic performance of $4,763, as well as by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $1,274, partially offset by the impact from acquisitions of $1,218. On a constant currency basis and net of the impact from adopting Topic 606, our services revenues decreased by 4.8% for the year ended December 31, 2019 as compared to the prior period.

  The decrease in organic performance was primarily due to the completion of several larger services projects during 2018 and the partial redeployment of our services colleagues to support Success Plan services of our E365 subscription offering.

Revenues by Geographic Area

Revenues are allocated to individual countries based upon the location of the users. Revenues by geographic area are as follows:

	Year Ended December 31,		Comparison					
	2018	2019						
	As reported Topic 605	As reported Topic 606	Amount	%	Impact from Adoption of Topic 606	Remaining Difference	%	Constant Currency %
Revenues by Geographic Area								
Americas	$ 328,749	$ 356,331	$ 27,582	8.4 %	$ (4,603)	$ 32,185	9.8 %	10.8 %
EMEA	231,486	236,602	5,116	2.2 %	1,348	3,768	1.6 %	6.0 %
APAC	131,475	143,721	12,246	9.3 %	5,060	7,186	5.5 %	9.1 %
Total revenues by geographic area	$ 691,710	$ 736,654	$ 44,944	6.5 %	$ 1,805	$ 43,139	6.2 %	8.9 %

For the year ended December 31, 2019, revenues reported under Topic 606 for our Americas, EMEA and APAC geographic areas, as compared to the revenues reported under Topic 605 for the year ended December 31, 2018, increased by $27,582, or 8.4%, $5,116, or 2.2%, and $12,246, or 9.3%, respectively.

- *Americas*. Net of the decrease from adopting Topic 606 of $4,603, revenues from the Americas increased by $32,185, or 9.8%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. This increase was driven primarily by improvements in our organic performance of $30,993 and, to a lesser extent, the impact from acquisitions of $4,527, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $3,335. On a constant currency basis and net of the impact from adopting Topic 606, our revenues from the Americas increased by 10.8% for the year ended December 31, 2019 as compared to the prior period.

  The increase in organic performance was primarily due to expansion of our recurring revenues from our existing accounts in the United States and Canada. Approximately 50% of our organic performance expansion was driven by ProjectWise and civil design products.

- *EMEA*. Net of the increase from adopting Topic 606 of $1,348, revenues from EMEA increased by $3,768, or 1.6%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. This increase was driven primarily by improvements in our organic performance of $11,665 and, to a lesser extent, the impact from acquisitions of $6,818, partly offset by the negative impact from acquisition integration of $4,498 and by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $10,217. On a constant currency basis and net of the impact from adopting Topic 606, our revenues from EMEA increased by 6.0% for the year ended December 31, 2019 as compared to the prior period.

The increase in organic performance was primarily due to expansion of our recurring revenues throughout the region. Approximately 50% of our organic performance expansion was driven by ProjectWise and Offshore Structural Analysis products.

The negative impact from acquisition integration relates to a 2018 acquisition. In 2018 we recognized perpetual license revenues from this acquisition of $4,061. License revenues were recognized upon delivery. Upon completing acquisition integration and beginning in 2019, such license sales were subject to our SELECT subscription program, including the portfolio balancing performance obligation. As a result, beginning in 2019 we would have recognized such license revenues ratably over a three-year period under Topic 605. In connection with this acquisition, we sold $6,317 of licenses in 2019, of which $823 was ratably recognized in 2019 and the balance of $5,494 was deferred under Topic 605. For comparison purposes, under Topic 606, revenue of $6,317 was recognized upon delivery in 2019.

- *APAC*. Net of the increase from adopting Topic 606 of $5,060, revenues from APAC increased by $7,186, or 5.5%, for the year ended December 31, 2019 as compared to the year ended December 31, 2018. This increase was driven primarily by improvements in our organic performance of $11,169 and, to a lesser extent, the impact from acquisitions of $750, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of $4,733. On a constant currency basis and net of the impact from adopting Topic 606, our revenues from APAC increased by 9.1% for the year ended December 31, 2019 as compared to the prior period.

  The increase in organic performance was primarily due to expansion of our recurring revenues from our existing accounts in Australia and China. Approximately 50% of our organic performance expansion was driven by ProjectWise and civil design products.

Cost of Revenues

	Year Ended December 31,		Comparison					
	2018	2019			Impact from Adoption of Topic 606	Remaining Difference	%	Constant Currency %
	As reported Topic 605	As reported Topic 606	Amount	%				
Cost of subscriptions and licenses	$ 55,113	$ 71,578	$ 16,465	29.9 %	$ 139	$ 16,326	29.6 %	32.8 %
Cost of services	76,211	72,572	(3,639)	(4.8)%	—	(3,639)	(4.8)%	(2.2)%
Total cost of revenues	$ 131,324	$ 144,150	$ 12,826	9.8 %	$ 139	$ 12,687	9.7 %	12.5 %

For the year ended December 31, 2019, cost of revenues reported under Topic 606 increased by $12,826, or 9.8%, to $144,150 as compared to cost of revenues reported under Topic 605 for the year ended December 31, 2018. This increase was driven primarily by an increase in cost of subscriptions and licenses, partially offset by lower cost of services relative to the prior period. Cost of revenues has not been significantly impacted by the adoption of Topic 606.

Net of the increase from adopting Topic 606 of $139, cost of subscriptions and licenses increased 29.6%, or 32.8% in constant currency, as compared to the year ended December 31, 2018. On a constant currency basis, this increase was primarily due to an increase in hosting costs of approximately $6,600, an increase in salaries, incentive compensation, and other headcount-related costs of approximately $6,000, an increase in amortization expense of approximately $1,500 related to certain projects under our Accelerated Commercial Development Program, an increase in reseller costs of approximately $1,900 and an increase in amortization expense of approximately $1,000 for software and technology.

Cost of services decreased by 4.8%, or 2.2% in constant currency, as compared to the year ended December 31, 2018. On a constant currency basis, the decrease was primarily due to a decrease in salaries, incentive compensation, and other headcount-related costs of approximately $1,100 as well as a decrease in the recognition of previously capitalized costs related to certain professional services projects of approximately $500.

Operating Expenses

	Year Ended December 31,		Comparison					
	2018	2019						
	As reported Topic 605	As reported Topic 606	Amount	%	Impact from Adoption of Topic 606	Remaining Difference	%	Constant Currency %
Research and development	$ 175,032	$ 183,552	$ 8,520	4.9 %	$ —	$ 8,520	4.9 %	7.2 %
Selling and marketing	160,635	155,294	(5,341)	(3.3)%	20	(5,361)	(3.3)%	(1.0)%
General and administrative	89,328	97,580	8,252	9.2 %	—	8,252	9.2 %	10.6 %
Amortization of purchased intangibles	14,000	14,213	213	1.5 %	—	213	1.5 %	4.4 %
Total operating expenses	$ 438,995	$ 450,639	$11,644	2.7 %	$ 20	$ 11,624	2.6 %	4.8 %

Research and development. Research and development expenses increased 4.9%, or 7.2% in constant currency, as compared to the year ended December 31, 2018. On a constant currency basis, the increase was primarily due to an increase in salaries, incentive compensation, and other headcount-related costs of approximately $8,800, as well as an increase in facility-related costs of approximately $3,300.

Selling and marketing. Selling and marketing expenses decreased 3.3%, or 1.0% in constant currency, as compared to the year ended December 31, 2018. The decrease is primarily caused by a reduction in sales incentives, which were at an elevated level for the year ended December 31, 2018.

General and administrative. General and administrative expenses increased 9.2%, or 10.6% in constant currency, as compared to the year ended December 31, 2018. On a constant currency basis, the increase was primarily caused by an increase in salaries, incentive compensation, and other headcount-related costs of approximately $8,600, as well as approximately $900 related to incremental accounting costs associated with this offering.

Amortization of purchased intangibles. Amortization of purchased intangibles increased by 1.5%, or 4.4% in constant currency, as compared to the year ended December 31, 2018. The increase was primarily attributable to acquisitions that closed in 2018.

Interest Expense, Net

	Year Ended December 31,	
	2018	2019
Interest expense	$ (9,607)	$ (9,731)
Interest income	842	1,532
Total interest expense, net	$ (8,765)	$ (8,199)

	Year Ended December 31,	
	2018	2019
Bank credit facility	$ (8,800)	$ (8,971)
Amortization of deferred financing costs	(552)	(553)
Other, net	587	1,325
Total interest expense, net	$ (8,765)	$ (8,199)

Our net interest expense for the year ended December 31, 2019 decreased from the prior year period primarily due to an offsetting increase in interest income from our investments in money market funds.

Other Income (Expense), Net

	Year Ended December 31,	
	2018	2019
Foreign exchange loss	$ (418)	$ (5,591)
Other income, net	654	34
Total other income (expense), net	$ 236	$ (5,557)

Other income (expense), net for the years ended December 31, 2018 and 2019 primarily consists of foreign currency translation losses of $418 and $5,591, respectively. The foreign currency translation losses derive primarily from U.S. Dollar denominated intercompany balances, cash and cash equivalents, and accounts receivable held by foreign subsidiaries with non-U.S. Dollar functional currencies. In October 2018, we had intercompany sales of certain intangible operating assets between our foreign subsidiaries, which resulted in significant U.S. Dollar denominated intercompany liabilities at foreign subsidiaries with a non-U.S. Dollar functional currency (mainly Euro). These U.S. Dollar denominated balances are being translated into their functional currencies at the rates in effect at the balance sheet date and fully eliminate in consolidation. The gains and losses from such translations are included in *Other income (expense), net*. For the year ended December 31, 2019, such intercompany balances resulted in unrealized foreign currency translation losses of $5,270.

Provision for Income Taxes

The income tax provisions for the years ended December 31, 2018 and 2019 were based on the effective income tax rates applicable for those periods. During the years ended December 31, 2018 and 2019, we recognized an aggregate consolidated income tax (benefit) expense of $(29,250) and $23,738, respectively, for U.S. domestic and foreign income taxes. The effective income tax rate of (25.9)% for the year ended December 31, 2018 was primarily impacted by a non-recurring tax benefit of $46,369 resulting from an intercompany sale of certain intangible operating assets. The effective income tax rate of 18.5% for the year ended December 31, 2019 was primarily a result of the timing and mix of U.S. and foreign income. The provision for income tax under Topic 605 would have been $21,762 for the year ended December 31, 2019.

Equity in Loss of Joint Venture, Net of Tax

In September 2019, we and Topcon Positioning Systems, Inc. formed Digital Construction Works, Inc. (“DCW”), a joint venture that operates as a digital integrator of software and cloud services for the construction industry. DCW’s focus is to transform the construction industry from its legacy document-centric paradigm by simplifying and enabling digital automated workflows and processes, technology integration, and digital twinning services for infrastructure.

We have a 50% ownership in DCW and apply the equity method of accounting for our investment in DCW. Under the equity method, we recorded our initial investment in the joint venture at cost and subsequently adjust that investment by our proportional share of income or losses in DCW. For the year ended December 31, 2019, the equity in loss, net of tax, related to the investment was $1,275.

Net Income

	Year Ended December 31,		
	2018	2019	
	Topic 605	Topic 605	Topic 606
Net income	$ 142,112	$ 103,426	$ 103,096

For the year ended December 31, 2019, net income under Topic 606 decreased by $39,016, or 27.5% ($38,686, or 27.2%, under Topic 605), compared to the year ended December 31, 2018 under Topic 605. The change is due to the factors stated above.

Adjusted EBITDA and Adjusted Net Income

	Year Ended December 31,		
	2018	2019	
	Topic 605	Topic 605	Topic 606
Adjusted EBITDA	$ 171,768	$ 186,598	$ 188,129
Adjusted Net Income	$ 132,246	$ 135,471	$ 135,049

For the year ended December 31, 2019, Adjusted EBITDA under Topic 606 increased by $16,361 (or $14,830 under Topic 605) compared to the year ended December 31, 2018 under Topic 605. These increases were primarily due to an increase in income from operations, net of adjustments discussed in the section titled “Selected Consolidated Financial Data.” The larger increase under Topic 606 is primarily driven by the upfront recognition of perpetual license revenue under Topic 606 as compared to ratable recognition over a three-year period under Topic 605, partially offset by lower subscription revenue due to ELS to E365 conversions. For additional information, see the section titled “—Key Factors Impacting Comparability and Performance.”

Under Topic 605, Adjusted EBITDA as a percentage of revenue was 24.8% and 25.4% for the years ended December 31, 2018 and 2019, respectively. Under Topic 606, Adjusted EBITDA as a percentage of revenue was 25.5% for the year ended December 31, 2019.

For the year ended December 31, 2019, Adjusted Net Income under Topic 606 increased by $2,803 (or $3,225 under Topic 605) compared to the year ended December 31, 2018 under Topic 605. These increases were primarily due to an increase in income from operations net of adjustments discussed in the section titled “Selected Consolidated Financial Data.” The increase in Adjusted Net Income under Topic 606, when compared to Topic 605, was positively impacted by the upfront recognition of perpetual license revenue as compared to ratable recognition over a three-year period under Topic 605. This increase was offset by lower subscription revenue due to ELS to E365 conversions and a slightly higher provision for income taxes under Topic 606 when compared to Topic 605.

Under Topic 605, Adjusted Net Income as a percentage of revenue was 19.1% and 18.4% for the years ended December 31, 2018 and 2019, respectively. Under Topic 606, Adjusted Net Income as a percentage of revenue was 18.3% for the year ended December 31, 2019.

For additional information, including the limitations of using non-GAAP financial measures, and reconciliations of the non-GAAP financial measures to the most directly comparable financial measures stated in accordance with U.S. GAAP, see the section titled “Selected Consolidated Financial Data—Non-GAAP Financial Measures.”

Quarterly Results of Operations:

The following table sets forth our quarterly unaudited consolidated statements of operations for each of the quarters in the ten-quarter period ended June 30, 2020. Our quarterly results of operations have been prepared on the same basis as our audited consolidated financial statements, and we believe they reflect all normal recurring adjustments necessary for the fair presentation of our results of operations for these periods. This information should be read in conjunction with our consolidated financial statements and related notes included elsewhere in the prospectus. These quarterly results of operations are not necessarily indicative of our results of operations for a full year or any future period. Results of operations for the four quarters in the year ended December 31, 2018 are presented under Topic 605 while the four quarters in the year ended December 31, 2019 and the two quarters in the period ended June 30, 2020 are presented under Topic 606.

	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020
Revenues:										
Subscriptions	$ 137,807	$ 139,013	$ 137,881	$ 142,720	$ 152,309	$ 137,838	$ 155,191	$ 162,962	$ 170,182	$ 157,655
Perpetual licenses	14,860	15,846	15,443	14,916	9,409	15,059	13,787	21,438	10,814	12,379
Subscriptions and licenses	152,667	154,859	153,324	157,636	161,718	152,897	168,978	184,400	180,996	170,034
Services	16,750	19,200	18,160	19,114	15,821	16,708	17,610	18,522	13,694	14,256
Total revenues	169,417	174,059	171,484	176,750	177,539	169,605	186,588	202,922	194,690	184,290
Cost of revenues:										
Cost of subscriptions and licenses	12,892	12,454	15,450	14,317	14,342	16,489	17,370	23,377	21,327	21,801
Cost of services	17,267	22,432	17,768	18,744	18,225	20,142	17,681	16,524	15,932	14,904
Total cost of revenues	30,159	34,886	33,218	33,061	32,567	36,631	35,051	39,901	37,259	36,705
Gross profit	139,258	139,173	138,266	143,689	144,972	132,974	151,537	163,021	157,431	147,585
Operating expenses:										
Research and development	40,983	43,822	42,793	47,434	44,477	47,384	44,756	46,935	45,135	44,218
Selling and marketing	35,886	39,047	38,235	47,467	35,982	39,186	36,721	43,405	36,095	29,632
General and administrative	20,906	23,414	22,171	22,837	22,804	23,503	25,108	26,165	26,804	25,465
Amortization of purchased intangibles	2,341	3,662	3,958	4,039	3,420	3,432	3,550	3,811	3,436	3,679
Total operating expenses	100,116	109,945	107,157	121,777	106,682	113,506	110,135	120,316	111,470	102,994
Income from operations	39,142	29,228	31,109	21,912	38,290	19,468	41,402	42,705	45,961	44,591
Interest expense, net	(1,839)	(2,248)	(2,276)	(2,402)	(2,282)	(2,192)	(2,029)	(1,696)	(1,388)	(1,128)
Other income (expense), net	(1,244)	(245)	(477)	2,202	(5,253)	3,506	(12,306)	8,496	(7,390)	405
Income before income taxes	36,059	26,735	28,356	21,712	30,755	20,782	27,067	49,505	37,183	43,868
Provision for income taxes	4,780	1,543	5,052	(40,625)	4,318	801	6,640	11,979	7,176	4,264
Equity in loss of joint venture, net of tax	—	—	—	—	—	—	—	1,275	338	528
Net income	$ 31,279	$ 25,192	$ 23,304	$ 62,337	$ 26,437	$ 19,981	$ 20,427	$ 36,251	$ 29,669	$ 39,076

On January 1, 2019, we adopted Topic 606, which supersedes substantially all existing revenue recognition guidance under U.S. GAAP. We adopted Topic 606 using the modified retrospective method, under which the cumulative effect of initially applying Topic 606 was recorded as a reduction to the opening balance of *Accumulated deficit* as of January 1, 2019. We applied the standard only to contracts that were not completed as of the date of initial application. The comparative information for each of the four quarters in the year ended December 31, 2018 has not been adjusted and continues to be reported under Topic 605.

	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Revenues (Topic 605):[1]								
Subscriptions	$ 137,807	$ 139,013	$ 137,881	$ 142,720	$ 146,372	$ 149,360	$ 154,225	$ 163,968
Perpetual licenses	14,860	15,846	15,443	14,916	12,954	12,857	13,088	13,620
Subscriptions and licenses	152,667	154,859	153,324	157,636	159,326	162,217	167,313	177,588
Services	16,750	19,200	18,160	19,114	15,851	16,963	16,430	19,161
Total revenues	$ 169,417	$ 174,059	$ 171,484	$ 176,750	$ 175,177	$ 179,180	$ 183,743	$ 196,749
Revenues (Topic 606):[2]								
Subscriptions	$ 141,902	$ 133,141	$ 138,194	$ 147,248	$ 152,309	$ 137,838	$ 155,191	$ 162,962
Perpetual licenses	12,639	14,116	11,682	18,916	9,409	15,059	13,787	21,438
Subscriptions and licenses	154,541	147,257	149,876	166,164	161,718	152,897	168,978	184,400
Services	16,750	19,200	18,160	19,114	15,821	16,708	17,610	18,522
Total revenues	$ 171,291	$ 166,457	$ 168,036	$ 185,278	$ 177,539	$ 169,605	$ 186,588	$ 202,922

(1) The amounts presented for the four quarters ended December 31, 2019 give effect to revenue adjustment as if the adoption of Topic 606 had not occurred on January 1, 2019. For a reconciliation of the impact of adopting Topic 606 on our audited consolidated financial statements for the year ended December 31, 2019, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

(2) The amounts presented for the four quarters in the year ended December 31, 2018 are unaudited and give effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2018 rather than January 1, 2019. The most significant impact from the adoption of Topic 606 relates to timing of revenue recognition for perpetual licenses and the accounting for certain of our subscription arrangements that include term-based software licenses bundled with support. Under the prior guidance, revenue for perpetual licenses was recognized over a three-year period, while revenue attributable to the term-based software licenses was recognized ratably over the term. Under Topic 606, both perpetual license and prepaid term-based software license revenue will be recognized upfront upon delivery of the software license. Our revenue recognition for services remained substantially unchanged and was not adjusted. See Note 2 to our consolidated financial statements included elsewhere in this prospectus for additional information regarding the adoption of Topic 606.

Reconciliation of Topic 605 to Topic 606:

	Three Months Ended March 31, 2018		
	As reported Topic 605	Adjustments	Topic 606
Subscriptions	$ 137,807	$ 4,095	$ 141,902
Perpetual licenses	14,860	(2,221)	12,639

	Three Months Ended June 30, 2018		
	As reported Topic 605	Adjustments	Topic 606
Subscriptions	$ 139,013	$ (5,872)	$ 133,141
Perpetual licenses	15,846	(1,730)	14,116

	Three Months Ended September 30, 2018		
	As reported Topic 605	Adjustments	Topic 606
Subscriptions	$ 137,881	$ 313	$ 138,194
Perpetual licenses	15,443	(3,761)	11,682

	Three Months Ended December 31, 2018		
	As reported Topic 605	Adjustments	Topic 606
Subscriptions	$ 142,720	$ 4,528	$ 147,248
Perpetual licenses	14,916	4,000	18,916

Quarterly Trends:

A portion of our revenues and operating expenses were derived from outside the United States and as such, were denominated in various foreign currencies, including most significantly: Euros, British Pounds, Australian Dollars, Canadian Dollars, and Chinese Yuan Renminbi. Our quarterly results are therefore impacted by changes in foreign currency rates. Starting in the quarter ended March 31, 2018, and continuing into the quarter ended June 30, 2020, the U.S. Dollar strengthened relative to other foreign currencies in which we generate revenues and incur expenses. However, towards the end of the quarter ended June 30, 2020, the U.S. Dollar began to weaken relative to other foreign currencies in which we generate revenues and incur expenses Accordingly, our results of operations have been, and in the future will be, affected by changes in foreign exchange rates. See the section titled “Key Factors Impacting Comparability and Performance—Impact of foreign currency.”

Revenues:

Our revenues are primarily comprised of recurring subscription revenues. Historically, we have experienced growth in subscription revenues within existing accounts when their contracts renew, and typically, we have a higher level of renewals occur in the first and fourth quarter of each year. This renewal cycle is primarily based on the timing of when accounts first entered into their subscription contracts. Under Topic 605, subscription revenues were recognized on a ratable basis over the subscription term and generally showed an increase in each period presented. Under Topic 606, our quarterly subscriptions revenues and profitability are impacted by the subscription term as well as the term start date of new and renewals subscriptions, due to the upfront revenue recognition of the associated term license component. Topic 606 therefore introduces volatility between quarters with our first and fourth quarter generally showing higher subscription revenues. However, on an annual and trailing twelve-month basis, we generally expect our subscription revenues recognized under Topic 606 to be comparable to such revenues recognized under Topic 605. This is attributable to the annual, recurring nature of our subscription agreements.

The conversion of our existing subscription users to consumption-based offerings with consumption measurement durations of less than one year, such as our E365 program, will further introduce some volatility between annual, quarterly, and trailing twelve-month periods and impact period over period comparability under Topic 606. This is because the term-based software license is recognized upfront upon delivery for subscription-based offerings, but upon usage for prepaid consumption-based offerings. See the section titled "—Key Factors Impacting Comparability and Performance."

Under Topic 605, revenue for perpetual licenses was recognized over a three-year period, due to the portfolio balancing feature users obtain through their SELECT subscriptions. Under Topic 606, our perpetual licenses revenues are recognized upon delivery and will closely align with the respective license sales of the period. Typically, we have a higher level of perpetual license sales in the fourth quarter of each year.

Our quarterly revenue for professional services may also fluctuate depending on the timing of our accounts requests for additional services and the related implementation cycles.

Increases in organic revenues over the ten quarters presented were offset by negative foreign currency impacts due to a stronger U.S. Dollar relative to our other functional currencies.

Headcount-related costs:

For the year ended December 31, 2019, 80% of our aggregate cost of revenues, research and development, selling and marketing, and general and administrative costs were represented by what we refer to herein as "headcount-related" costs. These costs include the salary costs of our colleagues (our employees) and the corresponding incentives, benefits, employment taxes, and travel-related costs. Our headcount-related costs are variable in nature. We actively manage these costs to align to our trending run rate of revenue performance, with the objective of enhancing visibility to better predict the resulting operating profit margins.

Our quarterly operating expenses are impacted by the timing of headcount adjustments including additions from acquisitions and realignment programs, the timing of annual raises and variable compensation, product development cycles, and sales and marketing programs. We experience some seasonality in spending related to sales and marketing based on the timing of our participation in certain trade shows and conferences. Typically, we incur higher sales and marketing expenses during the fourth quarter of each year. We cannot assure you, however, that these trends will continue.

Our aggregate cost of revenues, research and development, selling and marketing, and general and administrative costs increased over the ten quarters presented and were partly offset by foreign currency impacts due to a stronger U.S. Dollar relative to our other functional currencies.

***Liquidity and Capital Resources*:**

Our primary source of cash is generated from the delivery of subscriptions, perpetual licenses, and services. Our primary use of cash is payment of our operating costs, which consist primarily of colleague-related expenses, such as compensation and benefits, as well as general operating expenses for marketing, facilities, and overhead costs. In addition to operating expenses, we also use cash to fund growth initiatives, which include acquisitions of software assets and businesses.

Our cash and cash equivalent balances are concentrated in a few locations around the world, with substantial amounts held outside of the United States. As of December 31, 2018 and 2019, 95% and 98%, respectively, of our total cash and cash equivalents were located outside of the United States. As of June 30, 2020, 72% of our total cash and cash equivalents were located outside of the United States. Under the Tax Cuts and Jobs Act, we are subject to U.S. taxes for the deemed repatriation of certain cash balances held by foreign corporations. We intend to continue to permanently reinvest these funds outside of the United States, and current plans do not demonstrate a need to repatriate them to fund our U.S. operations. We expect to meet our U.S. liquidity needs through ongoing cash flows or external borrowings including available liquidity under the Credit Facility described below. We regularly review our capital structure and consider a variety of potential financing alternatives and planning strategies to ensure that we have the proper liquidity available in the locations in which it is needed and to fund our operations and growth investments with cash that has not been permanently reinvested outside the United States.

We believe that existing cash and cash equivalent balances, together with cash generated from operations and liquidity under the Credit Facility, will be sufficient to meet our domestic and international working capital and capital expenditure requirements through the next twelve months. However, our future capital requirements may be materially different than those currently planned in our budgeting and forecasting activities and depend on many factors, including our rate of revenue growth, the timing and extent of spending on research and development, the expansion of our sales and marketing activities, the timing of new product introductions, currency fluctuations, market acceptance of our products, competitive factors, and overall economic conditions, globally. To the extent that current and anticipated future sources of liquidity are insufficient to fund our future business activities and requirements, we may be required to seek additional equity or debt financing. The sale of additional equity would result in additional dilution to our shareholders, while the incurrence of debt financing, including convertible debt, would result in debt service obligations. Such debt instruments also could introduce covenants that might restrict our operations. We cannot assure you that we could obtain additional financing on favorable terms or at all. See the section titled “Risk Factors—Risks Related to Our Business—We may need to raise additional capital, which may not be available to us.”

Cash and cash equivalents. We consider all highly liquid investments with an original maturity of three months or less at the date of purchase to be cash equivalents. Our cash and cash equivalents consisted of cash held in checking accounts and money market funds maintained at various financial institutions. The following table presents our foreign and domestic holdings of cash and cash equivalents:

	December 31,		June 30,
	2018	2019	2020
Cash and cash equivalents:			
Held domestically	$ 3,788	$ 2,291	$ 34,653
Held by foreign subsidiaries	77,395	118,810	90,863
Total cash and cash equivalents	$ 81,183	$ 121,101	$ 125,516

The amount of cash and cash equivalents held by foreign subsidiaries is subject to translation adjustments caused by changes in foreign currency exchange rates as of the end of each respective reporting period, the offset to which is recorded in accumulated other comprehensive loss on our consolidated balance sheet.

Bank Credit Facility. On December 19, 2017, we entered into the Credit Facility, which matures on December 18, 2022. Upon entry into this agreement, we obtained a $500,000 senior secured revolving facility and refinanced all indebtedness outstanding under our prior facility.

In addition to the revolving line of credit, the Credit Facility also provides up to $50,000 of letters of credit and other incremental borrowings subject to availability, including a $50,000 multi-currency swing-line sub-facility and a $100,000 incremental “accordion” sub-facility. We had $631, $546, and $150 of letters of credit and surety bonds outstanding as of December 31, 2018, December 31, 2019, and June 30, 2020, respectively. We had $240,619, $265,704, and $292,850 available under the Credit Facility as of December 31, 2018, December 31, 2019, and June 30, 2020, respectively.

Under the Credit Facility, we may make either Euro currency or non-Euro currency interest rate elections. Interest on the Euro currency borrowings is at the one-month LIBOR plus a spread ranging from 100 basis points (“bps”) to 225 bps as determined by our net leverage ratio. Under the non-Euro currency elections, Credit Facility borrowings bear a base interest rate of the greater of (i) the prime rate, (ii) the overnight bank funding effective rate plus 50 bps, or (iii) LIBOR plus 100 bps, plus a spread ranging from 0 bps to 125 bps as determined by our leverage ratio. In

addition, a commitment fee for the unused Credit Facility ranges from 15 bps to 30 bps as determined by our net leverage ratio.

Borrowings under the Credit Facility are guaranteed by all of our first-tier domestic subsidiaries and are secured by a first priority security interest in substantially all of our and the guarantors' U.S. assets and 65% of the stock of their directly owned foreign subsidiaries. The agreement governing the Credit Facility contains both affirmative and negative covenants, including maximum leverage ratios. At December 31, 2018, December 31, 2019, and June 30, 2020, we were in compliance with all covenants in our Credit Facility.

Interest rate risk associated with the Credit Facility is managed through an interest rate swap that we executed on March 31, 2020. The swap has an effective date of April 2, 2020 and a termination date of April 2, 2030. Under the terms of the swap, we fixed our LIBOR borrowing rate at 0.73% on a notional amount of $200,000. The interest rate swap is not designated as a hedging instrument for accounting purposes. We account for the swap as either an asset or a liability on the balance sheet and carry the derivative at fair value. Gains and losses from the change in fair value are recognized in Other income (expense), net, in the consolidated statements of operations. At June 30, 2020, the fair value of the swap was $4,174.

For the years ended December 31, 2018 and 2019, the weighted average interest rate under the Credit Facility was 3.28% and 3.47%, respectively. As of December 31, 2018, accrued interest and fees were $31. Interest expense was $8,800 and $8,971 for the years ended December 31, 2018 and 2019, respectively.

For the six months ended June 30, 2019 and 2020, the weighted average interest rate under the Credit Facility was 3.73% and 2.18%, respectively. As of June 30, 2020, accrued interest and fees were $33. Interest expense was $4,600 and $2,544 for the six months ended June 30, 2019 and 2020, respectively.

In addition, interest expense includes amortization of deferred financing costs of $552 and $553 for the years ended December 31, 2018 and 2019, respectively and $277 for each of the six months ended June 30, 2019 and 2020.

The agreement governing the Credit Facility contains customary events of default, including, without limitation, payment defaults, breaches of representations and warranties, covenants defaults, cross-defaults to certain other indebtedness in excess of $10,000, certain events of bankruptcy and insolvency, judgment defaults in excess of $10,000, failure of any security document supporting the Credit Facility to be in full force and effect, and a change of control.

Voluntary prepayments of amounts outstanding under the Credit Facility, in whole or in part, are permitted at any time, so long as we give notice as required by the Credit Facility. However, if prepayment is made with respect to a LIBOR-based loan and the prepayment is made on a date other than an interest payment date, we must pay customary breakage costs.

This summary of the terms of the Credit Facility is qualified in its entirety by reference to the agreement, which is filed as an exhibit to the registration statement of which this prospectus forms a part.

Comparison of the Six Months Ended June 30, 2019 and 2020

The following table summarizes our cash flow activities for the six months ended June 30, 2019 and 2020:

	Six Months Ended June 30,	
	2019	**2020**
Net Cash Provided By (Used In):		
Operating activities	$ 82,758	$ 136,182
Investing activities	$ (18,157)	$ (78,979)
Financing activities	$ (42,004)	$ (52,556)

Operating activities:

For the six months ended June 30, 2019, net cash provided by operating activities were $82,758 primarily due to net income of $46,418 increased by $22,024 of non-cash adjustments and $14,316 from changes in operating assets and liabilities.

Net cash provided by operating activities was $136,182 during the six months ended June 30, 2020. Compared to the prior year comparative period, net cash from operating activities was higher by $53,424 due to an increase in net income of $22,327, a net increase in non-cash adjustments of $12,527, and an increase in net cash flows from the change in operating assets and liabilities of $18,570. The net increase in non-cash adjustments primarily related to a $1,298 increase in depreciation and amortization, an increase of $7,638 in deferred income taxes, an increase of $4,015 related to the change in the fair value of the interest rate swap, and an increase of $2,308 related to foreign currency remeasurement losses. The net increase in cash flows from changes in operating assets and liabilities of $18,570 was due to increased cash flows related to the collection of accounts receivable, net of $4,407, an increase from the change in prepaid and other assets of $16,586, and an increase from the change in income taxes payable of $9,990, offset by a decrease from the change in accounts payable, accruals and other liabilities of $8,239 and a decrease from the change in deferred revenues of $4,174.

Investing activities:

For the six months ended June 30, 2019, net cash used in investing activities was $18,157, primarily due to $8,123 related to purchases of property and equipment and investment in capitalized software and $9,662 in acquisition related payments, net of cash acquired.

Net cash used in investing activities was $78,979 during the six months ended June 30, 2020, primarily due to $9,419 related to purchases of property and equipment and investment in capitalized software and $67,595 in acquisition related payments, net of cash acquired.

Financing activities:

For the six months ended June 30, 2019, net cash used in financing activities was $42,004, primarily due to net payments under the Credit Facility of $11,750, payment of a contingent acquisition liability of $8,273, payments of dividends of $12,641, and net payments for shares acquired of $11,517.

Net cash used in financing activities was $52,556 during the six months ended June 30, 2020. Compared to the prior year comparative period, net cash used in financing activities increased by $10,552, primarily due to an increase in net repayments of $15,000 under the Credit Facility and an increase in payments for dividends of $3,260, partly offset by a decrease in the payment of acquisition debt and other consideration of $7,182, and a decrease in net payments for share repurchases of $559.

Comparison of the Years Ended December 31, 2018 and 2019

The following table summarizes our cash flow activities for the periods indicated:

	Year Ended December 31,	
	2018	2019
Net Cash Provided By (Used In):		
Operating activities	$ 161,465	$ 170,773
Investing activities	(154,757)	(53,693)
Financing activities	(58,799)	(77,048)

Operating activities:

For the year ended December 31, 2018, net cash provided by operating activities was $161,465, due to net income of $142,112 increased by $43,464 of non-cash adjustments and $35,949 from changes in operating assets and liabilities, offset by $60,060 of non-cash tax benefits.

Net cash provided by operating activities was $170,773 during the year ended December 31, 2019. Compared to the prior year comparative period, net cash from operating activities was higher by $9,308 due to a net increase in non-cash adjustments of $69,795, offset by a decrease in net income of $39,016 and a decrease from changes in operating assets and liabilities of $21,471. The net increase in non-cash adjustments primarily related to a $60,792 increase in deferred income taxes as well as an increase of $6,956 related to foreign currency remeasurement losses. The net decrease in cash flows from changes in operating assets and liabilities of $21,471 was primarily due to decrease in deferred revenues of $21,515, a decrease from the changes in income taxes payable of $21,723, partially

offset by the decreased collection of accounts receivable, net of $20,635 and an increase from the change in accounts payable, accruals and other liabilities of $4,631.

Investing activities:

For the year ended December 31, 2018, net cash used in investing activities was $154,757, primarily due to $18,616 related to purchases of property and equipment and investment in capitalized software and $135,264 in acquisition related payments, net of cash acquired.

Net cash used in investing activities was $53,693 during the year ended December 31, 2019, primarily due to $15,804 related to purchases of property and equipment and investment in capitalized software and $34,054 in acquisition related payments, net of cash acquired.

Financing activities:

For the year ended December 31, 2018, net cash used in financing activities was $58,799, primarily due to net repayments under the Credit Facility of $11,250, payments of dividends of $20,059, and net payments for shares acquired of $30,231.

Net cash used in financing activities was $77,048 during the year ended December 31, 2019. Compared to the prior year comparative period, net cash used in financing activities increased by $18,249, primarily due to an increase in net repayments of $13,750 under the Credit Facility, an increase in the payment of acquisition debt and other consideration of $11,038, and an increase in payments for dividends of $4,930, partially offset by a decrease in net payments for share repurchases of $10,575.

Contractual Obligations and Other Commitments:

The following table represents our contractual commitments as of December 31, 2019. The information presented in the table below reflects management's estimates of the contractual maturities of our obligations. These maturities may differ from the actual maturities of these obligations.

	Payments Due By Period				
	Total	Within 1 Year	1-3 Years	3-5 Years	After 5 Years
Long-term debt[1]	$ 233,750	$ —	$ 233,750	$ —	$ —
Interest on long-term debt[1]	24,066	8,111	15,955	—	—
Operating lease obligations[2]	52,016	15,886	23,571	9,788	2,771
Deferred compensation obligations[3]	2,544	153	358	438	1,595
Contingent obligations[4]	6,599	5,100	1,499	—	—
Non-contingent obligations[5]	900	900	—	—	—
Total contractual obligations	$ 319,875	$ 30,150	$ 275,133	$ 10,226	$ 4,366

(1) Long-term debt represents the outstanding balance of $233,750 related to the Credit Facility with an effective interest rate of 3.47%.

(2) Operating lease obligations include non-cancellable operating lease commitments for our domestic and international facilities, cars, and equipment.

(3) Deferred compensation obligations relate to the deferred portion of bonus compensation of certain former colleagues.

(4) Contingent consideration from acquisitions.

(5) Non-contingent consideration from acquisitions.

Critical Accounting Policies and Use of Estimates:

Our consolidated financial statements are prepared in conformity with U.S. GAAP. In preparing our consolidated financial statements, we make assumptions, judgments, and estimates that can have a significant impact on amounts reported in the consolidated financial statements. We base our assumptions, judgments, and estimates on historical experience and various other factors that we believe to be reasonable under the circumstances. Actual results could

differ materially from these estimates under different assumptions or conditions. We regularly reevaluate our assumptions, judgments, and estimates. Our significant accounting policies are described in Note 1 to our consolidated financial statements included elsewhere in this prospectus. We believe that the following critical accounting policies affect the more significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue recognition

On January 1, 2019, we adopted Topic 606, using the modified retrospective method, under which the cumulative effect of initially applying Topic 606 of $125,464 ($101,489 net of tax) was recorded as a reduction to the opening balance of *Accumulated deficit*. The impact from adoption was primarily derived from the timing of revenue recognition of perpetual licenses and the accounting for certain of our subscription arrangements that include term-based software licenses bundled with support. Under the prior guidance, revenue for perpetual licenses was recognized over a three-year period, while revenue attributable to the term-based software licenses was recognized ratably over the term. Under Topic 606, both perpetual license and prepaid term-based software license revenue will be recognized upfront upon delivery of the software license. The comparative information has not been adjusted and continues to be reported under Topic 605. Refer to Note 2, Recent Accounting Pronouncements, in our consolidated financial statements for a qualitative and quantitative discussion of the adoption impact.

Topic 606 establishes a principle for recognizing revenue upon the transfer of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services.

We generate revenues from subscriptions, perpetual licenses, and professional services.

Subscriptions

SELECT subscriptions. We provide prepaid annual recurring subscriptions that accounts can elect to add to a new or previously purchased perpetual license. SELECT provides accounts with benefits, including upgrades, comprehensive technical support, pooled licensing benefits, annual portfolio balancing exchange rights, learning benefits, certain Azure-based cloud collaboration services, mobility advantages, and access to other available benefits. Under Topic 606, SELECT subscription revenues are recognized as distinct performance obligations are satisfied. The performance obligations within the SELECT offering, outside of the portfolio balancing exchange right, are concurrently delivered and have the same pattern of recognition. These performance obligations are accounted for ratably over the term as a single performance obligation. Under Topic 605, SELECT subscriptions revenue was recognized on a ratable basis, over the subscription term.

Enterprise subscriptions: We provide Enterprise subscription offerings which provide our largest accounts with complete and unlimited global access to our comprehensive portfolio of solutions. ELS provides access for a prepaid annual fee. ELS contains a term license component, SELECT maintenance and support, and performance consulting days. The SELECT maintenance and support benefits under ELS do not include a portfolio balancing feature. Revenue is allocated to the various performance obligations based on their respective standalone selling prices. Revenue allocated to the term license component is recognized upon delivery at the start of the subscription term while revenues for the SELECT maintenance and support and the performance consulting days are recognized as delivered over the subscription term. Billings in advance are recorded as *Deferred revenues* in the consolidated balance sheets. Under Topic 605, ELS revenue was recognized on a ratable basis, over the subscription term.

E365 subscriptions, which were introduced during the fourth quarter of 2018, provide unrestricted access to our comprehensive software portfolio, similar to ELS, however are charged based upon daily usage. The daily usage fee includes a term license component, SELECT maintenance and support, and Success Plan services, which are designed to achieve business outcomes through more efficient and effective use of our software. E365 revenues are recognized based upon usage incurred by the account under both Topic 606 and 605. Usage is defined as distinct user access on a daily basis. The term of E365 subscriptions aligns with calendar quarters and revenue is recognized based on actual usage.

Term license subscriptions: We provide annual, quarterly, and monthly term licenses for our software products. Term license subscriptions contain a term license component and SELECT maintenance and support. Revenue is allocated to the various performance obligations based on their standalone selling price (“SSP”). ATL are generally prepaid annually for named user access to specific products. QTL subscriptions allow accounts to pay quarterly in arrears for license usage that is beyond their prepaid subscriptions. MTL subscriptions are identical to QTL subscriptions, except for the term of the license, and the manner in which they are monetized. MTL subscriptions

require a CSS, which is described below. For ATL, revenue allocated to the term license component is recognized upon delivery at the start of the subscription term while revenue for the SELECT maintenance and support is recognized as delivered over the subscription term. Billings in advance are recorded as *Deferred revenues* in the consolidated balance sheets. Under Topic 605, ATL revenues were recognized on a ratable basis, over the subscription term. For usage-based QTL and MTL subscriptions, revenues are recognized based upon usage incurred by the account under both Topics 606 and 605. Usage is defined as peak usage over the respective terms. The terms of QTL and MTL subscriptions align with calendar quarters and calendar months, respectively, and revenue is recognized based on actual usage.

Visas and Passports are quarterly or annual term licenses enabling users to access specific project or enterprise information and entitle certain functionality of our ProjectWise and AssetWise systems. Our standard offerings are usage based with monetization through our CSS program.

CSS is a program designed to streamline the procurement, administration, and payment process. The program requires an estimation of annual usage for CSS eligible offerings and a deposit of funds in advance. Actual consumption is monitored and invoiced against the deposit on a calendar quarter basis. CSS balances not utilized for eligible products or services may roll over to future periods or are refundable. Paid and unconsumed CSS balances are recorded in *Accruals and other current liabilities* in the consolidated balance sheets. Software and services consumed under CSS are recognized pursuant to the applicable revenue recognition guidance for the respective software or service and classified as subscriptions or services based on their respective nature.

Perpetual licenses

Perpetual licenses may be sold with or without attaching a SELECT subscription. Historically, attachment and retention of the SELECT subscription has been high given the benefits of the SELECT subscription. Perpetual license revenue is recognized upon delivery of the license to the user under Topic 606. Under Topic 605, the Company recognized perpetual licenses revenue ratably over a three-year term due to the portfolio balancing feature users obtain through their SELECT subscriptions.

Services

We provide professional services including training, implementation, configuration, customization, and strategic consulting services. We perform projects on both a time and materials and a fixed fee basis. Our recent and preferred contractual structures for delivering professional services include (i) delivery of the services in the form of subscription-like, packaged offerings which are annually recurring in nature, and (ii) delivery of our growing portfolio of Success Plans. Success Plans are standard offerings which offer a level of subscription service above the standard technical support offered to all accounts as part of their SELECT or Enterprise agreement. Revenues are recognized as services are performed under both Topic 606 and 605.

Significant Judgments and Estimates:

Revenue recognition. Our contracts with customers may include promises to transfer licenses (perpetual or term-based), maintenance, and services to a user. Judgment is required to determine if the promises are separate performance obligations, and if so, the allocation of the transaction price to each performance obligation. When an arrangement includes multiple performance obligations which are concurrently delivered and have the same pattern of transfer to the customer, we account for those performance obligations as a single performance obligation. For contracts with more than one performance obligation, the transaction price is allocated among the performance obligations in an amount that depicts the relative SSP of each obligation. Judgment is required to determine the SSP for each distinct performance obligation. In instances where SSP is not directly observable, such as when we do not sell the product or service separately, we determine the SSP using information that may include market conditions and other observable inputs. We use a range of amounts to estimate SSP when we sell each of the products and services separately and need to determine whether there is a discount that should be allocated based on the relative SSP of the various products and services.

Our SELECT agreement provides users with perpetual licenses a right to exchange software for other eligible perpetual licenses on an annual basis upon renewal. We refer to this option as portfolio balancing and concluded that the portfolio balancing feature represents a material right resulting in the deferral of the associated revenue. Judgment is required to estimate the percentage of users who may elect to portfolio balance and considers inputs such as

historical user elections. This feature is available once per term and must be exercised prior to the respective renewal term. We recognize the associated revenue upon election or when the portfolio balancing right expires. This right is included in the initial and subsequent renewal terms and we reestablish the revenue deferral for the material right upon the beginning of the renewal term. As of December 31, 2019, we had deferred $18,060 related to portfolio balancing exchange rights which is included in *Deferred revenues* in the consolidated balance sheet. As of June 30, 2020, we have deferred $17,522 related to portfolio balancing exchange rights which is included in *Deferred revenues* in the consolidated balance sheet.

Business combinations. We allocate the fair value of the consideration transferred to the assets acquired and liabilities assumed, including trademarks, customer relationships, in-process research and development, and acquired software and technology, based on their estimated fair values at the acquisition date. Any residual purchase price is recorded as goodwill. The purchase price allocation requires us to make significant estimates and assumptions, especially at the acquisition date, with respect to intangible assets and deferred revenue obligations.

Although we believe the assumptions and estimates we have made are reasonable, they are based in part on historical experience and information obtained from the management of the acquired companies and are inherently uncertain. Examples of critical estimates used in valuing certain of the intangible assets we have acquired or may acquire in the future include but are not limited to:

- future expected cash flows from sales, maintenance agreements, and acquired developed technologies;
- the acquired company's trade name and customer relationships as well as assumptions about the period of time the acquired trade name and customer relationships will continue to be used in our product portfolio;
- expected costs to develop the in-process research and development into commercially viable software and estimated cash flows from the projects when completed; and
- discount rates used to determine the present value of estimated future cash flows.

These estimates are inherently uncertain and unpredictable, and if different estimates were used the purchase price for the acquisition could be allocated to the acquired assets and liabilities differently from the allocation that we have made. In addition, unanticipated events and circumstances may occur, which may affect the accuracy or validity of such estimates, and, if such events occur, we may be required to record a charge against the value ascribed to an acquired asset or an increase in the amounts recorded for assumed liabilities.

Goodwill and other intangible assets. Intangible assets arise from acquisitions and principally consist of goodwill, trademarks, customer relationships, and acquired software and technology. Intangibles, other than goodwill, are amortized on a straight-line basis over their estimated useful lives, which range from three to ten years (see Note 6 to our consolidated financial statements included elsewhere in this prospectus).

Goodwill consists of the excess of cost over the fair value of net assets acquired in business combinations. Goodwill is not amortized. Instead, it is tested annually for impairment, or more frequently if events occur or circumstances change that would more likely than not reduce its fair value below its carrying amount. We operate as a single reporting unit.

The initial step in evaluating goodwill for impairment requires us to determine the reporting unit's fair value and compare it to the carrying value, including goodwill, of such reporting unit. As part of the assessment, an entity may first qualitatively assess whether it is more likely than not (a likelihood of more than 50 percent) that a goodwill impairment exists. In evaluating whether it is more likely than not that a goodwill impairment exists, we consider the factors identified in ASC 350, *Intangibles—Goodwill and Other*. We also consider whether there are significant differences between the carrying amount and the estimated fair value of its assets and liabilities, and the existence of significant unrecognized intangible assets. Based upon our most recent annual impairment assessment completed as of October 1, 2019, it is not more likely than not that a goodwill impairment exists. There was no impairment of goodwill as a result of our annual impairment assessments conducted during the years ended December 31, 2018 or 2019.

Property and equipment. Property and equipment are recorded at cost less accumulated depreciation. Depreciation is calculated using the straight-line method over the estimated useful lives of the assets, which range from three to twenty-five years. Leasehold improvements are depreciated over the shorter of the estimated useful life of the leasehold improvements or the lease term. Land is not depreciated. Depreciation for equipment commences

once it is placed in service and depreciation for buildings and leasehold improvements commences once they are ready for their intended use.

Cost of maintenance and repairs is charged to expense as incurred. Upon retirement or other disposition, the cost of the asset and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is reflected in the consolidated statements of operations.

Leases. We determine if an arrangement is a lease at inception. Operating leases are included in *Operating lease right-of-use assets*, *Operating lease liabilities*, and *Long-term operating lease liabilities* in our consolidated balance sheets. Operating lease right-of-use assets represent our right to use an underlying asset for the lease term and operating lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease right-of-use assets and operating lease liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. We use our incremental borrowing rate, if our leases do not provide an implicit rate, based on the information available at the commencement date in determining the present value of lease payments. The incremental borrowing rate is determined based on our estimated credit rating, the term of the lease, economic environment where the asset resides, and full collateralization. The operating lease right-of-use assets also include any lease payments made and are reduced by any lease incentives. Options to extend or terminate the lease are considered in determining the lease term when it is reasonably certain that the option will be exercised. Lease expense for lease payments is recognized on a straight-line basis over the lease term. Our operating leases are primarily for office space, cars, and office equipment. Finance leases are included in *Property and equipment, net*, *Accruals and other current liabilities*, and *Other liabilities* in our consolidated balance sheet.

Allowance for doubtful accounts. We establish an allowance for doubtful accounts for estimated losses expected during the accounts receivable collection process. The allowance for doubtful accounts is presented separately in the consolidated balance sheet and reduces the accounts receivable balance to the net realizable value of the outstanding accounts and installment receivables. The development of the allowance for doubtful accounts is based on an expected loss model that considers reasonable and supportable forecasts of future conditions and a review of past due amounts, historical write-off and recovery experience, as well as aging trends affecting specific accounts and general operational factors affecting all accounts. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote.

We consider current economic trends when evaluating the adequacy of the allowance for doubtful accounts. If circumstances relating to specific customers change or unanticipated changes occur in the general business environment, our estimate of the recoverability of receivables could be further adjusted.

Derivatives not designated as hedging instruments. On March 31, 2020, we entered into an interest rate swap with a notional amount of $200,000 and a ten-year term to reduce the interest rate risk associated with our Credit Facility. The interest rate swap is not designated as a hedging instrument for accounting purposes. We account for the swap as either an asset or a liability on the consolidated balance sheet and carry the derivative at fair value. Gains and losses from the change in fair value are recognized in *Other income (expense), net* and payments related to the swap are recognized in *Interest expense, net* in the consolidated statements of operations. The bank counterparty to the derivative potentially exposes us to credit-related losses in the event of nonperformance. To mitigate that risk, we only contract with counterparties who meet our minimum requirements under our counterparty risk assessment process. We monitor counterparty risk on at least a quarterly basis and adjusts our exposure as necessary. We do not enter into derivative instrument transactions for trading or speculative purposes.

Income taxes. We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined based on net operating loss carryforwards, credit carryforwards, and temporary differences between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the items are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period of the enactment date.

We record net deferred tax assets to the extent we believe the assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies, and recent financial operations. In the event we determine that we will not be able to realize deferred income tax assets in the future in excess of our net

recorded amount, an adjustment to the valuation allowance would be recorded that would increase the provision for income taxes.

On December 22, 2017, the U.S. Tax Cuts and Jobs Act was enacted. This act, among other things, reduces the U.S. federal income tax rate to 21% from 35% in 2018, institutes a dividends received deduction for foreign earnings with a related tax for the deemed repatriation of unremitted foreign earnings, and creates a new U.S. minimum tax on earnings of foreign subsidiaries. We completed our accounting for the effects of this legislation in 2018 and have included those effects in *Provision for income taxes* in the accompanying consolidated statements of operations.

We perform a quarterly assessment of the recoverability of the net deferred tax assets and believe that we will generate sufficient future taxable income in appropriate tax jurisdictions to realize the net deferred tax assets. Our judgment regarding future profitability may change due to future market conditions and other factors, including intercompany transfer pricing adjustments. Any change in future profitability may require material adjustments to these net deferred tax assets, resulting in a reduction in net income in the period when such determination is made. We believe our tax positions, including intercompany transfer pricing policies, are consistent with the tax laws in the jurisdictions in which we conduct our business. It is possible that these positions may be challenged by jurisdictional tax authorities and may have a significant impact on our effective tax rate.

We are subject to income taxes in the United States and in numerous foreign jurisdictions. As part of the process of preparing our consolidated financial statements, we are required to calculate our income tax expense based on taxable income by jurisdiction. There are many transactions and calculations about which the ultimate tax outcome is uncertain. As a result, our calculations involve estimates by management. Some of these uncertainties arise as a consequence of revenue-sharing, cost-reimbursement and transfer pricing arrangements among related entities, and the differing tax treatment of revenue and cost items across various jurisdictions. If we were compelled to revise or to account differently for our arrangements, that revision could affect our tax liability. While we believe the positions we have taken are appropriate, we record reserves for taxes to address potential exposures involving tax positions that we believe could be challenged by taxing authorities. We record a benefit on a tax position when we determine that it is more likely than not that the position is sustainable upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. For tax positions that are more likely than not to be sustained, we measure the tax position at the largest amount of benefit that has a greater than 50 percent likelihood of being realized when it is effectively settled. We review the tax reserves as circumstances warrant and adjust the reserves as events occur that affect our potential liability for additional taxes. We follow the applicable guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition with respect to uncertain tax positions. We recognize interest and penalties related to income taxes within the *Provision for income taxes* line in the consolidated statements of operations. Accrued interest and penalties are included within the related tax liability line in the consolidated balance sheets.

Stock-based compensation. We record all stock-based compensation as an expense in the consolidated statements of operations measured at the grant date fair value of the award. The fair value of stock option awards is determined using the Black-Scholes option pricing model. For all other equity-based arrangements, the share-based compensation expense is based on the share price at the grant date (see Note 15 to our consolidated financial statements included elsewhere in this prospectus).

The determination of the fair value of stock-based payment awards using an option pricing model is affected by our stock price as well as assumptions regarding a number of subjective variables. These variables include our estimated stock price, volatility over the term of the awards, expected term, risk-free interest rates, and expected dividends. The expected stock price volatility for our common stock is estimated by taking the average historic price volatility for industry peers based on daily price observations over a period equivalent to the expected term of the stock option grants. We intend to continue to consistently apply this process using the same or similar public companies until a sufficient amount of historical information regarding the volatility of our own common stock share price becomes available. The expected term is based on the simplified method, which represents the average period from vesting to the expiration of the award. The risk-free interest rate is based on the U.S. Treasury yield curve with a remaining term equal to the expected life assumed at grant date.

Fair value of common stock. We have historically been a privately held company with no active public market of our common stock. We are required to estimate the fair value of the common stock underlying our stock-based awards. The fair value of the common stock underlying our equity-based awards was determined by our board of

directors, with input from management and contemporaneous third-party valuations. We believe that our board of directors has the relevant experience and expertise to determine the fair value of our common stock.

Prior to the offering, and given the absence of a public trading market for our common stock, and in accordance with the American Institute of Certified Public Accountants practice guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, our board of directors exercised reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of the fair value of our common stock, including:

- contemporaneous independent valuations performed by an unrelated third-party valuation specialist;
- the nature of our business and its history;
- our operating and financial performance and forecast;
- present value of estimated future cash flows;
- the likelihood of achieving a liquidity event, such as an initial public offering, listing, or sale of our Company, given prevailing market condition and the nature and history of our business;
- any adjustment necessary to recognize a lack of marketability for our common stock;
- the market performance of comparable publicly traded companies; and
- the U.S. and global capital market conditions.

In valuing our common stock, our board of directors determined the equity value of our business generally using the income approach and the market comparable approach valuation methods.

The income approach estimates value based on the expectation of future cash flows that a company will generate such as cash earnings, cost savings, tax deductions, and proceeds from disposition. These future cash flows are discounted to their present values using a discount rate derived from an analysis of the cost of capital of comparable publicly traded companies in our industry or similar lines of business as of each valuation date and is adjusted to reflect the risks inherent in our cash flows.

The market comparable approach estimates value based on a comparison of the Company to comparable public companies in a similar line of business. To determine our peer group of companies, we considered public enterprises with similar operations and selected those that are similar to our size, stage of life cycle, and financial leverage. From the comparable companies, a representative market value multiple is determined and applied to our results of operations to estimate the value of the Company.

Application of these approaches involves the use of estimates, judgments, and assumptions that are highly complex and subjective, such as those regarding our expected future cash flows, cost savings and expenses, discount rates, market multiples, the selection of comparable companies, and the probability of possible future events. Changes in any or all of these estimates and assumptions or the relationships between those assumptions impacts our valuations as of each valuation date.

The following table summarizes, by grant date, all options awards since January 1, 2018 under our stockholder-approved plan. The estimated fair value per share of common stock in the table below represents the determination by our board of directors of the fair value of our common stock as of the date of grant, taking into

consideration the various objective and subjective factors described above, including the conclusions, if applicable, of contemporaneous valuations of our common stock.

Grant Date	Number of Shares Underlying Options	Exercise Price	Fair Value per Share of Common Stock
March 2018	20,000	$ 6.805	$ 6.805
May 2018	5,096,000	6.805	6.805
September 2018	10,000	8.670	8.670
March 2019	4,816,000	7.240	7.240
May 2019	10,000	7.240	7.240
March 2020	10,000	10.840	10.840

Emerging Growth Company:

Section 107 of the JOBS Act provides that an "emerging growth company" can use the extended transition period provided in Section 7(a)(2)(B) of the Securities Act, as amended by Section 102(b)(1) of the JOBS Act, for complying with new or revised accounting standards. This permits an "emerging growth company" to delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards would otherwise apply to private companies. We have elected to use the extended transition period provided in Section 7(a)(2)(B) for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an "emerging growth company" or (ii) affirmatively and irrevocably opt out of the extended transition period provided in Section 7(a)(2)(B). As a result, our consolidated financial statements may not be comparable to those of companies that comply with public company effective dates.

Off-Balance Sheet Arrangements:

We do not have any off-balance sheet arrangements, as defined by applicable SEC regulations.

Recent Accounting Pronouncements:

For information regarding recent accounting guidance and the impact of this guidance on our consolidated financial statements, see Note 2 to our consolidated financial statements included elsewhere in this prospectus.

Quantitative and Qualitative Disclosures about Market Risk:

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in foreign currency rates, although we also have exposure due to potential changes in interest rates. We do not hold financial instruments for trading purposes.

Foreign currency exchange risk. Our revenue, earnings, cash flows, receivables, and payables are subject to fluctuations due to changes in foreign currency exchange rates. We regularly evaluate our foreign currency positions in the context of the natural hedging of revenues and expenses and corresponding exposure. We have concluded that our naturally hedged positions support our strategy and no incremental hedging strategies have been deployed. The primary currencies for which we have exchange rate exposure are the U.S. Dollar versus Euros, British Pounds, Australian Dollars, Canadian Dollars, and Chinese Yuan Renminbi. For the year ended December 31, 2019, approximately 58% of our revenues are derived from outside of the United States and approximately 47% of our revenues are denominated in foreign currencies. In 2019, 53%, 14%, 7%, and 26% of our revenues were denominated in U.S. Dollars, Euros, British Pounds, and other currencies, respectively, and 54%, 17%, 8%, and 21% of our expenses were denominated in U.S. Dollars, Euros, British Pounds, and other currencies, respectively. Financial results therefore are affected by changes in foreign currency rates. We estimate that a 10% strengthening of the U.S. Dollar versus our other currencies would have lowered our 2019 annual operating income by approximately $10,200.

Interest rate risk. We had cash and cash equivalents of $121,101 and $125,516 as of December 31, 2019 and June 30, 2020, respectively, which consisted of bank deposits and money market funds maintained at various financial institutions. The cash and cash equivalents are held primarily for working capital purposes. Such interest-earning instruments carry a degree of interest rate risk. To date, fluctuations in interest income have not been significant. The primary objective of our investment activities is to preserve principal while maximizing income without significantly

increasing risk. The interest rates on the Credit Facility also fluctuate based on various market conditions that affect LIBOR, the prime rate, or the overnight bank funding effective rate. The cost of borrowing thereunder may be impacted as a result of our interest rate risk exposure. Interest rate risk associated with the Credit Facility is managed through an interest rate swap which we executed on March 31, 2020. Under the terms of the swap, we fixed our LIBOR borrowing rate at 0.73% on a notional amount of $200,000 and for a period of ten years. We do not enter into investments or derivative instruments for trading or speculative purposes. Due to the short-term nature of our investments, we have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in interest rates. A hypothetical 10% change in interest rates during any of the periods presented would not have had a material impact on our consolidated financial statements.

Inflation risk. We do not believe that inflation has had a material effect on our business, financial condition, or results of operations.

FOUNDERS' PERSPECTIVES: LETTER FROM GREG, BARRY, KEITH, AND RAY BENTLEY

Thank you for your interest in purchasing shares of Bentley Systems, which would make us fellow investors in advancing infrastructure through going digital. As the majority owners and majority of Board members, we realize that this is our opportunity to help you understand our corporate philosophy, so that you can consider whether it aligns with your investment preferences. In a nutshell, we hope that our approach tolerably coincides with how you would make decisions in managing your own family's company, but we want to best inform your investment choice by being direct and factual about our history and plans for the future.

Bentley Systems: 1984 - 2020

Barry, Keith, and Ray are respectively chemical, electrical, and mechanical engineers who have spent their entire careers in software. Even Greg, prior to joining the rest of us, was a successful developer of software for what he characterizes as "financial engineering." Having engineer types in charge seems to have worked for us, perhaps because of the correspondence to our end market of infrastructure engineering.

The four of us are not selling shares in this offering, nor do we contemplate any "exit" other than (as we are all aged in our early 60s) in due course following the example of Barry, who retired at the beginning of this year but remains active on our Board. We plan to continue our modest regular dividend, which will serve to encourage this orderly progression.

From entrepreneurial experience, we are strong believers in the motivating "secret sauce" of equity ownership. We realize that our own success in software correlates directly with our colleagues' quality, motivation, and retention. Genuinely shared commitment is contagious and powerful, leading ultimately to this public company destiny.

Over 1,200 of our colleagues (and by now, some are retirees) have earned over one-third of our company's ownership through our pervasive stock incentive programs. Facilitated by the NASDAQ Private Market since 2016, some have sold shares to our strategic alliance partner Siemens at pre-arranged share prices. This public listing fulfills our intention for our colleagues to be rewarded, for having devoted their prime working lives, with the deserved satisfaction of their equity being valued by the independent market, rather than by formula. To complete our goal of colleague ownership, we have preceded this IPO with grants of nearly one million shares distributed across every one of our approximately 4,000 colleagues.

BSY: 2020 - …

Because the "no drama" continuity assured by family stewardship has proven to be a significant competitive advantage from the standpoint of our accounts and our colleagues, BSY will be structured to remain protected from hostile acquirors and/or activist investors with short-term agendas. Rather than compromising our focus, when public we intend to steadfastly adhere to the consistent long-term decision horizon which has guided us as a private company. We will prioritize proactive investments when we believe substantial opportunities will sufficiently benefit our future, even if that might jeopardize short-term expectations. So while we will continue to hold ourselves accountable to become more efficient as we consistently grow, and while our cumulative subscription preponderance and operating discipline enable relatively strong near-term visibility, we will not concentrate on quarterly performance metrics.

Compounding short-term measurement issues, the noise from new revenue accounting rules creates, in our reported results, misleading volatility that doesn't exist in economic reality. Therefore, to avoid the risks of misinterpretation by analysts and markets, we intend to refrain from providing quarterly financial guidance. However, we will undertake to update our annual financial guidance when that is merited, in transparent accordance with the metrics that we find most useful internally.

In corporate governance, you can be assured of our alignment with shareholders at large, whom will always be well represented by independent directors of the highest quality. While continuing our established high standards of corporate citizenship, we believe all shareholders are best served by BSY's undiluted attention to serving our users, our accounts, and our colleagues. It is generally not our business to advocate for causes beyond the self-evident

virtues we depend upon: free markets, free trade and globalization, and (private as well as public) infrastructure investment.

By virtue of long experience we can conclude that for a software company, it is an advantage for key decisions to be made by those whom are literally “in software.” Our unique and trusted technical continuity across successive software generations has established a key competitive differentiator in BSY’s favor, for long-lived infrastructure projects and endless-lived infrastructure assets.

Accordingly, we take most seriously our responsibility for similarly qualified succession in BSY’s executive leadership. We have suitable plans and prospects in mind, including having recently recruited successfully from top levels at leading public software companies. Our successors will have the continuity benefit of many years of anticipated overlap with our Board tenures, but we also have ambitions to improve upon our own leadership, and certainly in dimensions beyond engineering.

Indeed, spending almost all of our careers working with brothers (who are certainly not easily impressed with each other) has hopefully inclined us toward humility rather than hubris. While we are proud of our many next-generation Bentleys in various roles at the company, we have programmed against dynastic succession. In BSY’s dual-class share voting formulation, our voting multiple ratchets down when the director Bentleys leave the Board, and reverts to parity if and when we and our collective heirs might own less than 20% of common shares.

BSY: The Infrastructure Engineering Software Company

We feel strongly that BSY’s work since its founding has represented the highest and best use of our collective endeavors. And we have succeeded to date because of the contributions and commitment of our diverse colleagues globally. We have all been brought together and motivated by what we’ve enabled infrastructure engineers to accomplish everywhere.

Our world’s economy and environment rely on physical infrastructure, advanced by infrastructure engineering, which is empowered by infrastructure engineering software. Many global imperatives hinge on infrastructure engineers going digital—including climate mitigation and adaptation, industrialization of project delivery for better infrastructure economics, increased private investment attracted by greater project and asset visibility, and economic development being propagated globally. The pandemic challenges of 2020 underscore the prospective importance of digital twins in sustaining infrastructure’s resilience and fitness for purpose.

There could not be more direct and palpable benefits from software careers than the work of our users, of which we are so proud. In your consideration of a BSY investment, we hope you take some time to review the impressive case studies, nominated for awards for going digital, that have been compiled in our annual Infrastructure Yearbooks. Whatever you decide about investing with our family, we think you will gain a greater appreciation for infrastructure, infrastructure engineers, and our colleagues responsible for their software—to whom BSY’s public offering is literally dedicated.

/signed

Greg Bentley

Barry Bentley

Keith Bentley

Ray Bentley

BUSINESS

Our Mission

Bentley Systems' mission is to provide innovative software to advance the design, construction, and operations of the world's infrastructure—sustaining both the global economy and environment, for improved quality of life.

Bentley Systems: The Infrastructure Engineering Software Company

We are a leading global provider of software for infrastructure engineering, enabling the work of civil, structural, geotechnical, and plant engineering practitioners, their project delivery enterprises, and owner-operators of infrastructure assets. We were founded in 1984 by the Bentley brothers. Our enduring commitment is to develop and support the most comprehensive portfolio of integrated software offerings across professional disciplines, project and asset lifecycles, infrastructure sectors, and geographies. Our software enables digital workflows across engineering disciplines, distributed project teams, from offices to the field, and across computing form factors, including desktops, on-premises servers, cloud-native services, mobile devices, and web browsers. We deliver our solutions via on-premise, cloud, and hybrid environments. Our users engineer, construct, and operate projects and assets across the following infrastructure sectors:

- *public works* (including roads, rail, airports, ports, and water and wastewater networks) / *utilities* (including electric, gas, water, and communications). We estimate that this sector represents 52% of the net infrastructure asset value of the global top 500 infrastructure owners (the "global top 500 infrastructure owners") based on the 2019 edition of the *Bentley Infrastructure 500 Top Owners*, our annual compilation of the world's largest infrastructure owners ranked by net depreciated value of their tangible fixed assets;
- *industrial* (including discrete and process manufacturing, power generation, and water treatment plants) / *resources* (including oil and gas, mining, and offshore). We estimate that this sector represents 38% of the global top 500 infrastructure owners' net infrastructure asset value; and
- *commercial/facilities* (including office buildings, hospitals, and campuses). We estimate that this sector represents 10% of the global top 500 infrastructure owners' net infrastructure asset value.

Shown below (in the outer ring of the pie chart) are the proportions of our overall 2019 revenues attributable to these infrastructure sectors (and the indicated subsectors), either related to our products whose purpose is specific to a sector/subsector, or otherwise to use of our other products by accounts which we assign within the sector/subsector. The inner portion of the piechart shows the proportions of our overall 2019 revenues which are not accordingly attributable to any particular sector/subsector, being related to products used across multiple sectors/subsectors by accounts not assignable to a particular sector/subsector. These non-sector/subsector-specific revenues are categorized as either for products within specific infrastructure disciplines (structural or geotechnical), or otherwise within the product groupings of general modeling (including, for example, surveying) or general project delivery (including, for example, for general construction and general asset performance by general project delivery firms).

* On an ASC 606 basis.

Infrastructure assets are among the world's largest and longest-lived investments, vital to both economic prosperity and environmental health. The quality of a region's infrastructure directly affects the region's capacity to meet constituents' essential needs for water, sanitation, energy, transport, and productive industries. Moreover, infrastructure considerations can affect the rate of global climate change and communities' vulnerability and resilience to negative climate change outcomes.

Infrastructure is complex due both to its physical scale and to its need for information connectedness at and between every stage of its lifecycle. Infrastructure design requires the structured collaboration of many engineering disciplines, often requiring globally dispersed teams. Infrastructure construction requires a distributed supply chain to reach an often remote location to realize a unique design. Infrastructure operations are mission critical, and require maintaining performance throughput and fitness-for-purpose for multiple generations. The design, construction, and operations of infrastructure require comprehensive solutions that can support and integrate rigorous workflows across professional disciplines in concert over the infrastructure lifecycle.

Our business, comprised of more than 4,000 colleagues, includes a "success force" of more than 900 colleagues with experience and credentials in infrastructure engineering. Our success force, coupled with 36 years of singular focus, has enabled us to create what we believe to be the most comprehensive infrastructure engineering software portfolio available today. Our comprehensiveness creates a formidable competitive advantage by providing our users integrated solutions for infrastructure projects and assets of nearly any type, scale, and complexity.

We address both the project and asset lifecycle phases of infrastructure, each with applications and enterprise information systems. Our Project Lifecycle solutions encompass conception, planning, surveying, design, engineering, simulation, and construction, as well as the collaboration offerings required to coordinate and share the work of interdisciplinary and/or distributed project teams. Our Asset Lifecycle solutions span the operating life of commissioned infrastructure assets, allowing our accounts to manage engineering changes for safety and compliance and to model performance and reliability to support operating and maintenance decisions.

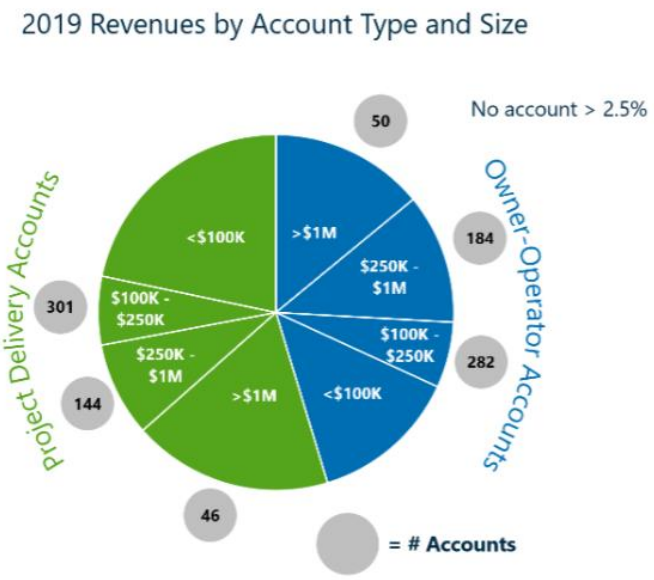
Our revenues are balanced and diversified between engineering and construction contracting firms who work together to deliver the design and construction of capital projects (representing 55% of our 2019 revenues), and their clients, public and private infrastructure asset owners and operators (representing 45% of our 2019 revenues). While engineering and construction contracting firms typically use our Project Lifecycle solutions, owner-operators are often involved in engineering and management for many of their own projects, and so can be users of our Project Lifecycle as well as our Asset Lifecycle solutions.

Our company's "Advancing Infrastructure" tagline reflects our enduring track record in successfully leveraging new technologies to improve and integrate the design, construction, and operations of infrastructure, leading to our infrastructure digital twins. An infrastructure digital twin is a cloud-native 4D digital representation of a physical project and resulting asset, incorporating its underlying engineering information, that is applied to model, simulate, analyze, chronicle, and predict its performance over time. By adding digital twin services to our existing solutions, our users can more fully extend digital workflows across project delivery and asset performance, increasing the value of infrastructure engineers' work.

We are the only infrastructure engineering software vendor to lead in market share in categories related to both the project and the asset lifecycle phases in the most recent rankings by The ARC Advisory Group ("ARC"). In August 2019, for *Engineering Design Tools for Plants, Infrastructure, and BIM* (building information modeling), ARC ranked us #2 overall, as well as #1 in each of Electric Transmission & Distribution and Communications and Water/Wastewater Distribution. In August 2019, ARC ranked us #1 in its inaugural market share study for Collaborative BIM. In December 2019, for *Asset Reliability Software & Services*, ARC ranked us #1 overall for software, as well as #1 in each of Transportation, Oil and Gas, and Electric Power Transmission and Distribution.

During the last two years, Microsoft recognized us as its 2019 "CityNext Partner of the Year" (citing our Azure-hosted *ProjectWise* for the Mumbai Trans Harbour Sea Link in India), its 2018 "CityNext Partner of the Year" (citing our Azure-hosted *ProjectWise* and *AssetWise* for the Klang Valley MRT in Kuala Lumpur, Malaysia), and a Finalist for the 2019 "Mixed Reality Partner of the Year Award" (citing our SYNCHRO XR 4D construction modeling application for the new HoloLens 2 device). Also, according to Microsoft, in 2019 we were one of the top 25 companies in terms of Azure usage globally.

We have spent decades cultivating trusted relationships with the largest global infrastructure engineering organizations. Our accounts include 90% of the top 250 of the *ENR 2019 Top 500 Design Firms*, which firms are ranked by revenue for design services performed in 2018, and 64% of the 2019 *Bentley Infrastructure 500 Top Owners*, which firms are ranked by net depreciated value of their tangible fixed assets. The *ENR 2019 Top 500 Design Firms* is authored by ENR and the *Bentley Infrastructure 500 Top Owners* is authored by us. These rankings consist of substantially distinct account lists (with the exception of a *de minimis* number of overlapping accounts), and such accounts collectively represented 42% of our total revenues for the year ended December 31, 2019. Our solutions are, in general, mission critical both for our accounts and for our professional users and foster a high degree of loyalty, with 80% of our 2018 and 2019 total revenues coming from accounts of more than ten years' standing, and 87% of our 2018 and 2019 total revenues coming from accounts of more than five years' standing.



* All figures as of December 31, 2019. All figures calculated using ASC 606. Chart segment sizing corresponds to underlying % of 2019 revenue.

We are a significant software vendor to major infrastructure engineering organizations. In 2018 and 2019, 88 and 96 accounts, respectively, each contributed over $1 million to our revenues, representing 31% and 32% of our revenues, respectively. 50% of our 2018 revenues and 53% of our 2019 revenues came from 376 accounts and 424 accounts, respectively, each contributing over $250,000 to our revenues. During 2018 and 2019, we served 36,718 and 34,127 accounts, respectively, and for the six months ended June 30, 2019 and 2020, we served 31,130 and 31,745 accounts, respectively. We determine "accounts" based on distinct contractual and billing relationships with us. Affiliated entities of a single parent company may each have an independent account with us. We have historically offered, and have in recent years enhanced, volume discount programs to incentivize such affiliated entities to consolidate their contractual relationships with us, resulting in a reduction to the number of distinct accounts so defined. No single account or group of affiliated accounts provided more than 2.5% of our 2018 or 2019 revenues.

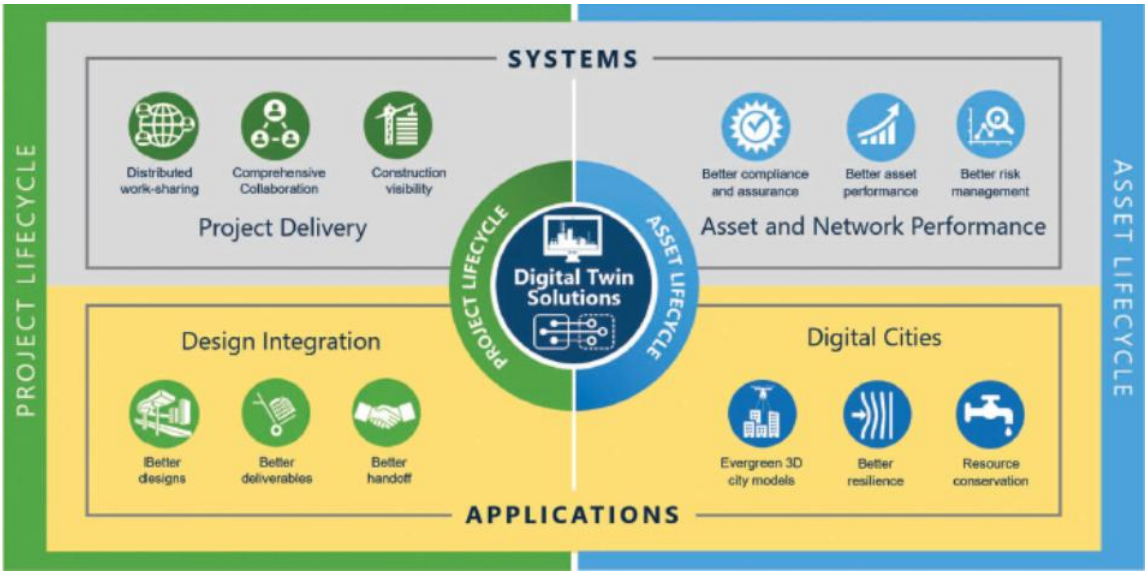
Our business is comprehensively global. In 2019, the majority of our revenues were generated across 171 countries outside the United States, with 32.1% from EMEA and 19.5% from APAC. We have purposefully invested and are fully established in developing international markets where rapid infrastructure growth will continue to present compelling opportunities for us to scale efficiently. In particular, Greater China, which we define as the Peoples' Republic of China, Hong Kong and Taiwan, and where we now have over 200 colleagues, has become one of our largest (among our top five) and fastest growing regions as measured by revenue, contributing just over 5% of our 2019 revenues.

In 2019, we generated subscription revenues of $608 million, total revenues of $737 million, net income of $103 million and Adjusted EBITDA of $188 million, and for the six months ended June 30, 2020, we generated subscription revenues of $328 million, total revenues of $379 million, net income of $69 million and Adjusted EBITDA of $116 million. Our business is cash-efficient, with approximately 70% of our revenues billed in advance, and a global tax rate of under 20%. For additional information on our financial result, key metrics, and non-GAAP financial metrics, see the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Business Metrics."

Our Solutions

We offer solutions for enterprises and professionals across the infrastructure lifecycle. Our Project Delivery and Asset and Network Performance solutions are systems provided via cloud and hybrid environments, developed

respectively to extend enterprise collaboration during project delivery, and to manage and leverage engineering information during operations and maintenance. Our Design Integration and Digital Cities solutions are primarily desktop applications and cloud-provisioned solutions for professional practitioners and workgroups. Our cloud-native Digital Twins solutions introduce digital workflows, which can span our Project Lifecycle and Asset Lifecycle solutions.



Project Lifecycle Solutions. Our Project Lifecycle solutions span conception, planning, surveying, design, simulation, and construction, as well as the collaboration software services required to coordinate and share the work of interdisciplinary and/or distributed project teams.

Design Integration. Our Design Integration solutions consist of modeling and simulation applications. Our modeling applications are domain-specific authoring tools used by professionals for the 3D design and documentation of infrastructure assets. Our simulation applications enable engineers to analyze the functional performance of the designs created with our modeling applications (or those of competitive vendors), preferably in iterative digital workflows, to improve engineering outcomes and to ensure compliance with design codes.

Benefits of our Design Integration applications to infrastructure engineers include:

- *Better designs.* Our modeling and simulation applications work together to improve infrastructure engineering quality, for instance to eliminate “clashes” across respective disciplines’ work. Each application is for a specific purpose (asset-type or discipline; for example, OpenRoads for roadway design), and supports corresponding asset-specific engineering workflows (for example, the workflow a civil engineer would use in designing a road) by virtue of:
  - *Better engineering productivity.* We endeavor to provide in our applications the most advanced and automated intelligence for transforming engineers’ conceptual decisions into complete, detailed, and editable deliverables; and
  - *Better configurability and continuity:* We take care to enable users to continuously refine their modeling preferences and standards across successive generations of our applications. This capability enables engineers, throughout their careers, to maintain continuity and compatibility with their preferred interfaces, formats, and methodologies, while advancing their work at the leading edge of innovation;
- *Better deliverables.* Our applications share a common modeling environment to enable streamlined coordination and production of multi-discipline documentation; and

- *Better handoff.* Our comprehensive modeling environment and our supplemental cloud services enable projects to enrich information sharing (and to minimize problematic translations) across project delivery processes. For instance:
  - by starting with reality modeling of existing conditions (often from drone surveying);
  - by sharing engineering component definitions across disciplines and projects; and
  - through "constructioneering" digital workflows, which automate the exchange of 3D design models to control GPS-enabled construction equipment (for earthmoving and paving), and to validate and preserve the resulting 3D as-built models for maintenance.

Project Delivery. Our Project Delivery solutions support information and document management, engineering-specific collaboration and work-sharing for distributed project teams and enterprises, and construction planning, modeling and execution. The scope of these solutions is not limited to users of only our own design applications.

Often during the project delivery lifecycle, key data are constantly changing, with inputs received from multiple sources, resulting in the need for a single source of information that is used to collect, manage, and disseminate information for the whole project team. Our software assures that the rapidly-changing data are managed in a common data environment ("CDE") such that only the correct milestone versions can be shared and referenced across the project. This functionality enables infrastructure project organizations to "virtualize" their talent so that the required work can be shared by all participants everywhere through our software, reducing the need for physical co-location of the project resources.

Our 4D construction modeling software spatially and temporally integrates a project's 3D engineering models into its construction schedules to assess sequencing strategies and to visualize and understand planned and actual progress over the project timeline. Our solutions also enable project delivery teams to optimally define and manage discrete engineering, construction, and installation work packages, including the construction trades' "workface planning," which considers crafts and materials by day and zone. For work packages which increasingly take advantage of modular offsite fabrication and manufacturing, our software manages and enables 4D visualization of the necessary spatial and logistical interfaces.

Benefits of our Project Delivery solutions to project delivery enterprises include:

- *Distributed work-sharing:* Our solutions incorporate the rigorous workflow protocols required for structured coordination across engineering and construction supply chains, enabling global sourcing for integrated project delivery, while maximizing economics, quality, and safety;
- *Comprehensive collaboration:* Our software leverages cloud and hybrid environments to streamline the aggregation, distribution, and interaction for project deliverables, ensuring that the right project participants have the right information in the right format at the right time, including at the project site and on every device; and
- *Construction visibility:* Our solutions' broad span and continuous detail across design integration, construction modeling and work packaging, and mixed-reality 4D visualization, advances predictability, accountability, and safety throughout the construction process.

Asset Lifecycle Solutions. Our Asset Lifecycle solutions span the operating life of commissioned infrastructure assets, capturing and managing changes to engineering models and enterprise information for compliance and safety, and to model performance and reliability to support operating and maintenance decisions.

Asset and Network Performance. Our Asset and Network Performance solutions are used to manage engineering information and geospatial relationships for operating and provisioning infrastructure across all sectors, including linear networks for transportation and energy transmission and distribution. Our asset performance modeling provides the needed analytical context for "right-time" data, including from Internet of Things ("IoT") sensor capabilities, to yield actionable insights.

Benefits of our Asset and Network Performance Solutions for owner-operators include:

- *Better compliance and assurance:* Our systems intrinsically enforce the rigor appropriate for operating infrastructure assets in order to provide dependable visibility into the impact of changes;
- *Better asset performance:* Our solutions include operational dashboards that provide decision support insights to maintain and improve throughput and reliability; and
- *Better risk management:* Our solutions include predictive analytics that identify potential problems before they occur, and ensure the accessibility of best-available engineering information and models for mitigation and resilience.

Digital Cities. Our Digital Cities solutions incorporate reality modeling (leveraging drone and mobile mapping "survey" inputs) and geospatial context to continuously capture as-operated infrastructure conditions at city and regional scale. Our offerings support department-level applications for municipal engineering, such as simulation of pedestrian and vehicle traffic, and water and drainage systems.

Benefits of our Digital Cities solutions to cities, regions, and their constituents include:

- *Evergreen 3D city models:* Our reality modeling software maintains engineering-ready 3D models, incorporating incrementally updated surveys, and thus ensures that engineering departments can rely on up-to-date geospatial context for digital workflows;
- *Better resilience:* Our solutions can integrate geotechnical, structural/seismic, and hydrological engineering modeling with evergreen 3D city models to harden infrastructure from flood and other natural hazards, and to apply engineering simulations for mitigation and emergency response; and
- *Resource conservation:* Taking full advantage of our solutions can significantly increase efficiency and reduce waste. For instance, our water network modeling tools, applied to compare as-designed specifications to observed flows and pressures, can help to non-invasively locate subsurface water network leaks.

Infrastructure Digital Twins.

Our digital twins offerings enable our users to create and curate cloud-native 4D digital representations of physical projects and resulting assets, incorporating underlying engineering information, and then to model, simulate, analyze, chronicle, and predict performance over time. Using digital twins, our users can more fully extend digital workflows across project delivery and asset performance, increasing the value of infrastructure engineers' work.

Benefits of our digital twins solutions to project delivery firms and owner-operators include:

- *Advanced insights.* For project delivery, digital twins can reveal insights beyond what would be visible with traditional workflows; for example, a digital twin can show 3D heat maps highlighting where changes in a design have been unusually pervasive, indicating possible design flaws. For asset performance, such insights from digital twins can be used to evaluate different strategies for optimizing operational efficiencies and throughput;
- *Predictive analytics.* For project delivery, digital twins and machine learning can compare the progress of a current project with similar projects that have been previously completed, and identify in advance potential bottlenecks, in time to take corrective action. For asset performance, a digital twin can track observations from various operational inputs against design intelligence to predict future failures and recommend maintenance actions to minimize downtime;
- *Continuous and comprehensive design reviews.* For project delivery, digital twins can aggregate and align design models and data from all sources "on the fly" (without interruptions for translations, and without specialized software) to present immersive 3D status visualization in a web browser for any authorized stakeholder to participate in ongoing interactive design reviews; and
- *Convergence of OT, IT, and now ET.* Infrastructure owner-operators are increasingly able to instrument their assets with IoT sensors, producing torrents of OT data that are difficult to interpret. Software advances in IT can in turn make data from enterprise transaction systems, such as maintenance work order history, accessible for analytics. But even OT and IT together cannot inform decisions for

improved asset performance as sufficiently as when combined with accessibility to comparable analytics from the assets' engineering models, which we refer to as the ET. Infrastructure digital twins notably enable the convergence of ET with OT and IT. With infrastructure digital twins, the design intent (the "digital DNA" captured in the digital twins' engineering models and simulations) can serve as a baseline for comparison to IoT-monitored "as-operated" performance, in light of the asset's operations and maintenance history stored in IT systems, to enable integrated analytics to provide timely insights and recommended actions to optimize safety and performance.

Comprehensiveness of Our Offerings

Our offerings are comprehensive across professional disciplines, lifecycle stages, infrastructure sectors, and geographies, resulting in what we believe to be durable competitive advantages:

Professional Disciplines. Each infrastructure project requires seamless and deep collaboration among professional disciplines, which can include civil, structural, geotechnical, and process engineers, architects, geospatial professionals, city and regional planners, contractors, fabricators, and operations and maintenance engineers. Our open modeling and open simulation applications facilitate iterative interactions between disciplines and coordination across project participants. Additionally, we believe our collaboration systems lead the market in managing infrastructure engineering firms' preferred work-in-progress workflows.

For example, to illustrate the benefits of interdisciplinary digital workflows in roadway design, our offerings' comprehensiveness can enhance both safety and economics by enriching the interfaces between geotechnical (earthworks) and structural analyses to share full 3D modeling details. Previously, structural decisions tended to be based on just a single imported parameter for subsurface foundation strength, frequently resulting in designs that included specifications and reinforcing materials beyond what was necessary to sufficiently mitigate risk.

The importance of integrating our offerings broadly across disciplines is also a reason that we have always prioritized interoperability with competitors' design tools. For major projects, owners and their contractors want to have the choice of the best professionals in every discipline, rather than limiting their choices to those using a particular software vendors' applications. Our offerings win acceptance within major organizations and projects both through our breadth of applications, and through each application's virtuosity in interpreting and emulating formats beyond our own.

Lifecycle Stages. Both project delivery enterprises and owner-operators benefit from our solutions, which enable digital workflows to extend between project and asset lifecycles, from design to construction and ultimately asset management. This capability allows our users' digital engineering models to be leveraged as the context for real-time condition monitoring to achieve better and safer operations and maintenance.

For an example of advantageous digital workflows from projects to assets, consider our solutions for permitting and routing of over-weight and over-sized loads by departments of transportation. Instead of routing based merely on static maximum load ratings for each bridge, we use actual bridge design models for dynamic structural simulations, and 3D clearances of the actual load configurations. As a result, user organizations are able to engineer safe routes to maximize commerce while protecting bridge longevity.

Infrastructure Sectors. Most major engineering and project delivery firms pursue an ever-changing mix of projects across the public works/utilities, industrial/resources, and commercial/facilities sectors and for flexibility tend to favor an infrastructure engineering software vendor whose portfolio correspondingly spans their full breadth. This comprehensiveness provides diversification for our own business, as an incidental advantage. For example, when there have been cyclical downturns in the primarily privately-financed industrial/resources and commercial/facilities sectors, we have historically witnessed offsetting counter-cyclical government investment in public works/utilities.

Geographies. While design codes may vary by country, infrastructure purposes and engineering practices are fundamentally the same throughout the world, which makes it possible for our infrastructure modeling applications to be used globally. Our offerings are available in most major languages, supporting country-specific standards and conventions. Our development teams are also globally dispersed, due in part to acquisitions made in various countries, but also to provide any needed last mile localization of our applications. Our global comprehensiveness enables our project delivery accounts to compete more efficiently across geographic markets, thus also providing global supply-chain sourcing choices for owners.

Key Trends Impacting Our Markets

Growth in Global Infrastructure Demand

We expect that the rate of new spending required to meet currently anticipated infrastructure demands will represent a highly significant economic opportunity globally for the next twenty years. According to Oxford Economics' *Global Infrastructure Outlook* in 2017 (the "Oxford Economics Outlook"), in 2015, global spending was $2.3 trillion across road, electricity, rail, telecoms, water, airports, and ports. Oxford Economics Outlook forecasts that this spending will increase to an average of $3.2 trillion annually for the period from 2016 to 2040.

The increased demand for infrastructure is attributable to various factors, including urbanization and adaptation to demographic and climate changes. According to the Oxford Economics Outlook, by 2040, 10% of the world's population, and 15% of the population of Asia, will move into cities or find that their environs have newly become cities, and Asia will continue to account for over 50% of anticipated global infrastructure spending, with China alone accounting for 30%.

Over the period from 2016 through 2040, the Oxford Economics Outlook estimates that approximately $79 trillion will be spent across road, electricity, rail, telecoms, water, airports, and ports, equivalent to approximately 3.0% of global GDP over the same period, broken down by purpose as follows:

Sector	Roads	Electricity	Rail	Telecoms	Water	Airports	Ports
2016-2040 Spending as Approximate Proportion of Global GDP	1.0 %	1.0 %	0.4 %	0.3 %	0.2 %	0.1 %	0.1 %

The Oxford Economic Outlook estimates that an additional $3.5 trillion of spending would be required to meet the UN's Sustainable Development Goals by 2030 for universal access to drinking water, sanitation, and electricity. Of this amount, $1.9 trillion is identified as needed to increase drinking water and sanitation capacity.

The Oxford Economics Outlook quantifies a funding gap by which its predicted actual spending falls short of what it estimates to be the need for functionally sufficient public works/utilities infrastructure. For North America, South America, and Central America, that gap is 47%, suggesting that investment needs in such regions are 47% greater than forecasted investment under current trends. We believe this funding gap, given compelling economic rates of return on further infrastructure investment, will give rise to rapidly increasing private infrastructure financing.

We believe that infrastructure funding gaps will accelerate demands for infrastructure engineering going digital. While significant privately-sourced capital has been earmarked for infrastructure investment, much of those funds are being held as dry powder, with investors seeking attractive projects with sufficient predictability at the outset and sufficient visibility throughout their investment holding periods. We also believe that digital twins can help to meet these requirements for private infrastructure investment and fulfill private infrastructure investors' expectations of advancement in digital workflows across project and asset lifecycles.

Responsibility for Environmental Sustainability

The global infrastructure engineering community is resolutely taking on the challenges of reducing waste and emissions, improving resilience, and designing for adaption to climate change. Going digital is recognized as essential to accomplish these goals, including in the following respects:

- *Reducing carbon impact of new projects.* During project delivery, digital twin technologies are being used to calculate the carbon impact of material, design, and construction alternatives to minimize the emission of carbon dioxide and other greenhouse gases;
- *Minimizing carbon emissions of operating assets.* Simulations and asset performance solutions based on engineering models enable adapting existing assets to be more energy-efficient and/or less reliant on fossil fuels;
- *Increasing the substitution of renewable energy.* In addition to designing new renewable energy assets including wind, solar, hydro-power, and waste-to-energy plants, engineers are leveraging network performance solutions to modernize existing power grids to purposefully incorporate distributed energy resources;

- *Optimizing the use of natural resources.* Simulation and analysis applications help engineers, among other examples, to
  - optimize the framing of an asset to maximize structural resilience while minimizing the raw material required;
  - identify and locate leaks in water networks to save water and the electricity needed to pump it; and
  - efficiently engineer wastewater treatment and water reclamation plants to save water resources; and
- *Building resilience into cities and assets.* Engineers today can model the impact of floods, earthquakes, hazardous spills, and extreme weather, and can accordingly harden infrastructure to minimize risks and mitigate the damage, disruption, and losses associated with such events.

Industrialization of Infrastructure Projects

While digital technologies have long and continuously improved the economics of manufacturing, infrastructure owners and investors are becoming increasingly dissatisfied with the low productivity improvements and rampant schedule and cost overruns too often associated with infrastructure project delivery. Owner-operators have tended to allow each engineering design to start from scratch, without taking into account potential synergies with the owner's existing asset fleet, operational performance history, and knowledge from comparable assets, thereby limiting opportunities for lifecycle-cost breakthroughs from construction-driven and operations-driven design.

Infrastructure engineering organizations are increasingly acknowledging imperatives for going digital to address these inefficiencies. New strategies are focused on the "industrialization" of infrastructure design and construction, using a smaller palette of modular functional elements dictated by the owner, fabricated offsite for economy, quality, and safety, and transported and assembled onsite. In construction, industrialization portends automation and robotics with digitally controlled machinery, which is already underway for heavy civil earthmoving.

We believe that industrialization of infrastructure delivery is compelling and inevitable, and will lead owner-operators to harness their own operating asset performance analytics to direct their project supply chains to learn from and deliver digital twins along with physical assets. We also believe industrialization's success will drive, and depend on, the adoption of 4D digital workflows for conception through construction, the comprehensiveness of all participants' solutions, and connectedness both in their data environments and between asset and project lifecycles.

Key Developments Impacting Infrastructure Owner-Operators

Trends that are influencing owner-operators' requirements for infrastructure engineering software include:

- *Autonomous vehicles.* We believe that the increase in investment in and demand for autonomous vehicle technologies will drive the need for intelligent roadway infrastructure. Roadway and related infrastructure owners will likely need to actively participate, creating an opportunity for roadway digital twins;
- *Ubiquitous connected devices.* We believe that owner-operators are increasingly looking to third parties to maximize their use of new technologies such as IoT and 5G, which will help them propel their businesses to innovate further and go digital. For example, in bridge structural monitoring, machine learning applied to video of deflections during truckload passage can be as effective as sophisticated instrumentation with an array of sensors in detecting structural deficiencies;
- *Innovative funding models.* Newer forms of funding may catalyze the adoption of digital twins. For example, property tax proceeds can be increased based on building improvements that are machine-learned from aerial imagery; and
- *Threats to critical infrastructure.* Certain vulnerabilities, such as risks to the electric grid or potable water sources, represent potential use cases for digital twins for planning and execution of hardening, monitoring, and emergency response. Additionally, the requirement for industrial-strength cyber-security for infrastructure digital twins will raise the barriers for entry, favoring world-class proprietors.

Key Developments Impacting Infrastructure Project Delivery Organizations

Despite the potential upside in business outcomes presented by going digital, engineering and construction organizations face challenging constraints:

- *Business model obsolescence.* Traditionally, most engineering firms have relied primarily on the first phase of owners' "design-bid-build" procurement models, billing for their design hours and leaving owners to retain the resulting cost and change risks associated with actual project delivery. We believe that owners increasingly prefer procurement models with some extent of integrated project delivery including construction, and they are increasingly open to financing models such as public-private partnerships, which focus on delivering both project and asset outcomes efficiently over a full asset lifecycle. As a result, both engineering and construction firms are increasingly under pressure to embrace integrated project delivery systems to share their work effectively, rather than accepting risks outside their domain or losing the work to integrated competitors;
- *Recruitment constraints.* Engineering firms are each challenged to compete for increasingly scarce local engineering skills and talent. In order to grow, these firms realize they need to be going digital, substituting technology for labor, and charging for increased value despite decreasing labor hours. Over time, however, we believe that as the infrastructure engineering professions fully adopt digital twin infrastructure engineering software, which is more visually immersive and interactive, their work will become relatively more appealing to "digital native" generations of potential engineering talent;
- *Globalization of competition.* New technologies have enabled engineers around the world to contribute to projects located in other countries. Using these technologies, foreign firms are able to bid aggressively and win work elsewhere, and even domestic competitors have established value engineering centers in overseas locations where engineering skills are relatively abundant, inexpensive, and digitally advanced. We believe that many firms in established markets recognize that going digital is essential both to maximize their local productivity and to fully integrate with virtualized collaborators worldwide;
- *Capital constraints.* In general, design and construction firms have not presented a compelling opportunity for investors, given their relatively higher risks and lower returns relative to other investment opportunities, and hence tend to be thinly capitalized. These firms require digital solutions, but often do not have the financial capital or technical resources to attempt to self-develop them. As a result, design and construction firms are increasingly a large and ready market for infrastructure engineering software, especially offerings with open-source capabilities for firms to configure and brand their own digital-twin offerings and analytics; and
- *Digital silos.* Legacy software applications often produce static deliverables in one-time, one-way file formats, siloed from the digital workflows required to bridge disciplines and lifecycle phases. Competitiveness in today's project delivery market requires solutions that facilitate data created by one application (for instance, in design) serving as inputs in new automated workflows by other applications (for instance, in 4D construction modeling). Such digital workflows improve productivity and quality, helping project delivery enterprises toward replication so that every project performs as well as their best projects.

The Digital Twins Opportunity

We believe that digital progress in infrastructure advancement has to date lagged behind other economic domains for several reasons, including that:

- most existing infrastructure assets predate engineering modeling software;
- engineers' work, including by way of building information modeling ("BIM") or geographic information systems ("GIS"), has been sequestered in native file formats that amount to "dark data," inaccessible without the software that was used to create it, and therefore unavailable for use in digital workflows or analytics; and
- construction processes are often fragmented and isolated from digital workflows altogether, resulting in engineering information being effectively abandoned between the project and the asset lifecycle phases of infrastructure.

Over our company's history, as computing capabilities have advanced, the scope of infrastructure engineering software has correspondingly increased. However, project lifecycle and asset lifecycle software markets have developed independently from one another and connecting digital workflows have not been offered. We believe that the new advancement of BIM and GIS to "evergreen" infrastructure digital twins will have the effect of merging what have to date been separate market spaces.

Period	Project Lifecycle Software	Asset Lifecycle Software
1985 - 1995	*2D Drafting ("Computer Aided Design," or "CAD"):* Workstations and then personal computers make possible interactive graphical applications to automate the creation of previously manually drafted 2D engineering drawings.	*2D Mapping:* Workstations and personal computers make possible interactive graphical applications to automate the creation of maps.
1996 - 2005	*Collaboration:* Networked personal computers and servers provide platforms for file-sharing and referencing. Common Data Environments ("CDEs") are introduced.	*Geographic Information Systems ("GIS"):* Networked personal computers and servers enable querying and visualization of geographic data.
2006 - 2015	*3D BIM*: Increased personal computing power enables the development of 3D applications for design of specific asset types including buildings, process plants, roads, water networks, and buildings. CDEs and the internet lead to global work-sharing and collaborative BIM.	*Geospatial:* Increased computing address space enables geo-coordinated engineering models. GPS technology enables alignment of digital components and real-world coordinates. *Asset Performance Management ("APM"):* solutions are introduced for reliability-centered maintenance and risk-based inspection.
2015 - 2018	*Reality Modeling*: Advances in digital imagery, unmanned aerial vehicles ("UAVs," or "drones"), and specialized software enable the automated capture of as-operated conditions of an asset or site in an engineering-ready, geo-coordinated 3D model. Cloud ubiquity enables *Common* Data Environments to evolve into *Connected* Data Environments.	*APM* evolves into Asset Performance *Modeling*, with engineering models recalibrated to reproduce and understand observed behaviors, and apply algorithms and analytics to derive insights and drive decisions.
2019 - Present	*4D Digital Twins:* Digital twins make possible the simulation of the behavior and the visualization of the changes of a project or infrastructure asset over time. Digital twins are continually updated in a cloud database and remain current and "evergreen," over the full project and asset lifecycle, through continuous surveying of the physical context and embedded links to inputs from connected IoT sensors in the operating asset. With digital twins, users are empowered to better understand the impact of changes over time for projects and assets to improve project, construction, and operational efficiencies, predictability, and overall outcomes.	

To enable infrastructure engineering to catch up and advance in "going digital," we have enabled infrastructure digital twins, cloud-provisioned digital representations of projects and assets that incorporate and converge their 3D physical conditions ("digital context") for reality, their underlying engineering information ("digital components") for veracity, and their 4D timeline of changes ("digital chronology") for fidelity, enabling the merging of project lifecycle and asset lifecycle workflows.

Digital Twins Requirements and Benefits

Digital twins solutions are now made possible by new technologies including UAVs and their intrinsic "surveying" sensors, machine learning, cloud computing, open-source development libraries, distributed ledger software, and mixed-reality visualization.

Our software to leverage these advancements for our digital twins offerings includes:

- **Reality modeling software**, which processes any combination of overlapping digital photography, video, and scanned imagery to produce a 3D model. Our software then uses machine learning to recognize and classify components within the 3D model (such as equipment, structural elements, pipes, valves, tags, and nameplates). This process populates the digital twins' digital context with digital components that add intelligence, especially when aligned with engineering models from the design stage;
- **iModel distributed databases**, which combine and align the digital components from all available sources for infrastructure projects and/or assets. iModels are created and bridged to our iTwins cloud services from our own engineering applications or from third-party applications. Using our iModel distributed databases, "dark data" is opened and aligned semantically and spatially with all other relevant models, allowing this information to be accessed and for its value to be enhanced; and
- **iTwins cloud services**, which update distributed databases through change ledgers to synchronize digital twins, as required, with physical and engineering changes. Along with assuring that their fidelity can be relied upon for critical decisions, our iTwins cloud services maintain secure environments for infrastructure digital twins' visualization and analytics visibility. Our iTwin services can be added to any user's or accounts' environments to generate incremental value by incorporating infrastructure engineering data within cloud-native evergreen digital twins. The go-to-market strategy for our iTwin cloud services is based on a dual-pronged sales strategy:
  - Sales to enterprise accounts using ProjectWise and AssetWise, to more broadly propagate their project and asset engineering data, respectively, through iTwins Design Review Service for comprehensive project-wide 4D status visibility, Immersive Asset Services, and PlantSight; and
  - Sales to individual practitioners and their workgroups for ad-hoc iTwins Design Review Service, often to upgrade their use of 2D PDF tools to 3D.

We believe that the growing adoption of infrastructure digital twins will serve to overcome the factors that have held back the digital advancement of infrastructure engineering. Moreover, we believe that due to the comprehensiveness of our solutions across project and asset lifecycles, infrastructure digital twins and newly enabled digital workflows spanning design, construction, and operations, will most particularly benefit our users and enhance our competitiveness.

Our Opportunity

We believe we are successful and well-established in enterprise-level relationships with the world's largest infrastructure engineering organizations, including both project-delivery contracting firms and owner-operators. Today, we address a significant SAM. We estimate our global SAM is approximately $9.5 billion, $6.1 billion of which is attributable to project delivery firms and $3.4 billion of which is attributable to owner-operators. Further, of our $9.5 billion SAM, approximately $1.6 billion is in Greater China.

We also view our market opportunity in terms of the TAM, which we believe we can address over the long term. We believe that digital progress in the engineering of constructed infrastructure has to date lagged behind other substantial economic domains and, in particular, has lagged behind digital progress—as reflected in spending on engineering software—in the engineering of manufactured products.

Over time, as project delivery firms and owner-operators increasingly recognize the value of going digital and increase their spending on infrastructure engineering software solutions, we believe that the "intensity" of infrastructure engineering software spending will approach the "intensity" of product engineering software spending, as measured by spend per engineer (or engineering technician, in each case).

Cambashi quantifies our TAM as what would be the total spend for infrastructure engineering software solutions if the intensity of infrastructure engineering software spending would become equivalent to that of product engineering software spending. This TAM value is derived by banding countries by intensity of product engineering software spend, and multiplying average product engineering software spend levels per product engineer (or product engineering technician) by the total number of infrastructure engineers (and infrastructure engineering technicians) for each respective band. In 2018, global infrastructure engineering spend for an estimated 22.5 million engineers totaled $8.3 billion. In the same year, global product engineering total spend for an estimated 11.1 million engineers totaled $13.9 billion.

Cambashi accordingly estimates that if engineering software spending would become as intensive per engineer (or engineering technician) in infrastructure engineering as in product engineering, global infrastructure engineering software spending would be $29.2 billion. We believe that over time our current SAM of $9.5 billion will approach this estimated TAM of $29.2 billion. We also believe that both our SAM and our TAM will further expand over time with the growth of infrastructure spending.

In order to estimate our SAM of $6.1 billion for project delivery accounts, we consider both project delivery organizations whose design and construction billings are reported to and published by ENR in addition to smaller project delivery organizations that do not have billings reported and published by such an organization. We estimate that the SAM for the larger project delivery accounts that have billings reported and published by ENR is currently approximately $3.4 billion.

We estimate that the SAM for the smaller project delivery accounts is currently approximately $2.7 billion. Our calculation of the metric for the larger project delivery accounts that have billings reported to and published by ENR is based on the percentage of ARR/billings we capture from these larger accounts relative to the total billings from these accounts based on data reported to and published by ENR. This method results in a penetration rate that we apply across all of the accounts published by ENR. We use this same penetration rate to estimate the SAM for smaller project delivery organizations that do not report or publish billings in ENR.

In order to estimate our SAM of $3.4 billion for owner-operator accounts, we consider both larger owner-operators that are included in the list of *Bentley Infrastructure Top 500 Owners* in addition to smaller owner-operators that are not included in our list. We estimate that the SAM for the larger owner-operator accounts included in the list of *Bentley Infrastructure Top 500 Owners* is currently approximately $1.6 billion. We estimate that the SAM for smaller owner-operators not included in the list of *Bentley Infrastructure Top 500 Owners* is currently approximately $1.8 billion. Our calculation of this metric is based on the percentage of ARR/billings we capture from these larger accounts relative to the net infrastructure asset value of the accounts included in the list of *Bentley Infrastructure Top 500 Owners*. This results in a penetration rate that we apply across all of the larger accounts included in the list of *Bentley Infrastructure Top 500 Owners*. We use this same penetration rate to estimate the SAM for smaller owner-operators not included in the list of *Bentley Infrastructure Top 500 Owners*.

Over time, we believe our SAM and TAM will expand from increased infrastructure spending. Moreover, in Asia, where the Oxford Economics Outlook estimates a majority of infrastructure spending occurs already and expects spending to increase through 2040, digital twin approaches are now being pursued to rapidly supersede traditional workflows institutionalized elsewhere in the world. In fact, in our 2019 Year in Infrastructure awards, the winners for 15 of 26 categories, judged by independent juries of global experts, were projects in China, India, Pakistan, and Southeast Asia, where we see spending on digital solutions accelerating faster than in other parts of the world.

Our Growth Strategies

We employ the following growth strategies to address the infrastructure engineering software market opportunities:

- ***Accretion within existing accounts.*** Most of our accounts currently use a small portion of our overall portfolio, even though they are often working on projects and assets where a large portion of our portfolio could be applied. We believe we can further penetrate our existing accounts by broadening their use of our portfolio. There are three primary mechanisms for this expansion:
  - *New commercial formulations.* We continually innovate with new commercial formulations to align the use of our software to the needs of our users. Presently, we offer our subscription solutions by the day, month, quarter and year. Additionally, we offer options enabling unrestricted access to our comprehensive software portfolio. We believe the flexibility in our commercial models and deployment options will allow our accounts to grow usage continuously;
  - *Automating user engagement.* We employ various technologies to drive user engagement. These technologies help to automate the user experience and drive engagement by suggesting and recommending best practices and appropriate software upgrades. We will continue to leverage these interactive technologies to virtually assist our users and drive engagement across our software offerings; and
  - *Adding new offerings.* We have a history of building and maintaining leadership in infrastructure software engineering comprehensiveness and intend to continue to innovate and develop our software offerings. Selected recent examples of our product innovations include the 2019 introduction of new multi-disciplinary modeling and simulation applications for 5G-ready communications towers and for offshore wind turbines, and the 2019 integration of our acquisitions of new software for vehicle traffic simulation and mobile mapping. Over the near term, we believe our iTwins Cloud Services represent a compelling opportunity to enhance value for our accounts. We intend to continue to develop and integrate new products and capabilities over time;
- ***Focusing on Asia.*** We believe Asia represents a large market opportunity and will continue to do so over the foreseeable future. According to the Oxford Economics Outlook, a majority of expected infrastructure spending for the period between 2016 and 2040 is expected to occur in Asia. Additionally, we believe that in Asia there is an abundance of skilled engineers whose work can be virtually exported, as well as engineering organizations that are eager and aggressive to win mandates for engineering and construction projects around the world. We intend to continue investing in strategies to enhance our market position in Asia;
- ***Increasing inside sales.*** Historically, our account management resources have focused on larger firms. Smaller and medium-sized engineering firms, however, represent a significant market opportunity and

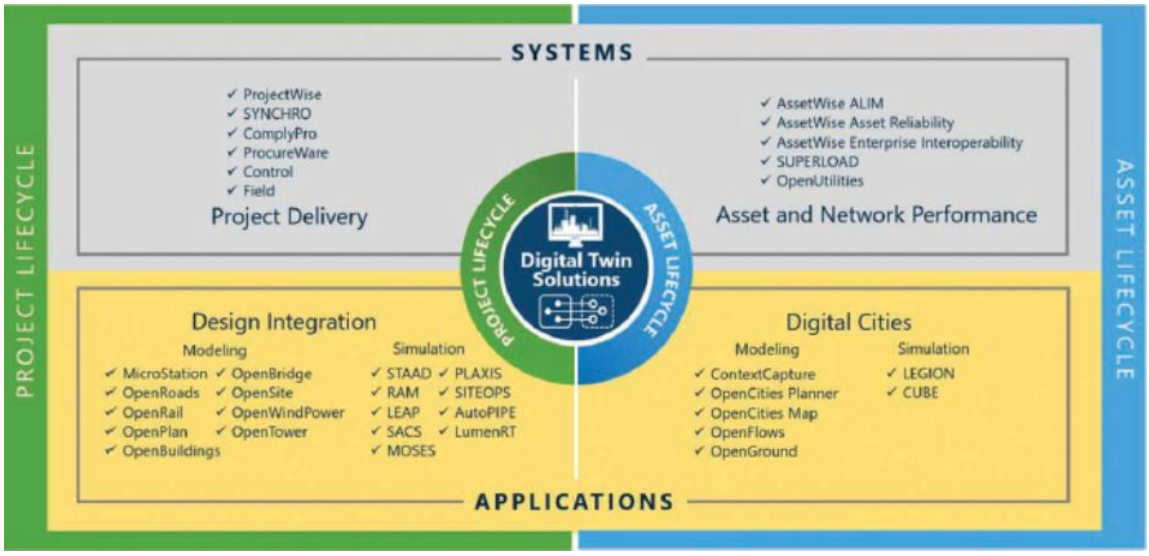
have the same needs for our comprehensive portfolio as the larger firms. While these firms have generally been served by our competitors' channel partners, we believe they will prefer to deal directly with us. We will continue to expand our global inside sales resources and to multiply their reach and effectiveness with superior digital tools to convert leads and to provide the self-service administration that engineering practitioners prefer; and

- ***Digital co-ventures.*** We have forged substantial alliances with other major participants in the infrastructure engineering supply chain, primarily to jointly develop and offer digital twin cloud services that extend the scope of our software. These alliances include:
  - Siemens: Our partnership integrates leading industrial software and IoT capabilities for a broad joint development program focused on improving outcomes during infrastructure operations and maintenance through digital workflows enabled by digital twins cloud services; and
  - Microsoft: Our partnership extends Azure-powered machine learning and analytics through digital workflows for infrastructure professionals and enterprises.
- ***Investing in digital integrator businesses.*** We are emphasizing certain investment activities outside of our core software business with the objective of cultivating an ecosystem of relatively service-intensive, digital integrator businesses that stimulate pull-through demand for our solutions. These investments may take the form of acquisitions, wholly owned start-up initiatives, minority equity stakes, alliances or loans. Certain of our recent digital integrator activities include:
  - Digital Construction Works: Our partnership with Topcon Positioning Systems integrates leading surveying technologies and geospatial machine control technologies for digital workflows between engineering and usage in the field. Our companies' Digital Construction Works joint venture provides expert services to major project delivery enterprises to incorporate these constructioneering workflows.
  - The Cohesive Companies: These investments, spawned by our acquisition of Cohesive Solutions in 2020, focus on enterprise asset management, asset performance, and digital twin integration services.
  - Digital Water Works: This wholly-owned start-up initiative focuses on the implementation, integration and adoption services necessary to establish digital twin solutions for water and waste water utilities.

  We anticipate each of the foregoing digital integrator businesses will become part of our Acceleration Fund portfolio of investments, which we expect to establish and operate distinctly inside of Bentley Systems, Incorporated.

Our Software Offerings

Our software products' development and go-to-market strategy are organized within Design Integration applications and Project Delivery systems (for project lifecycles), and Asset and Network Performance systems and Digital Cities applications (for asset lifecycles), all supplemented and brought together with our digital twins ("iTwins") cloud offerings.



Design Integration Applications

We undertake to provide comprehensive open modeling and open simulation applications for infrastructure design integration. Our open modeling applications include:

- *MicroStation*, for flexible 3D design and documentation providing the common modeling environment upon which our applications are built;
- *OpenRoads*, for the planning, 3D design, and documentation of roads and highways;
- *OpenRail*, for the planning, 3D design, and documentation of rail and transit systems;
- *OpenPlant*, for the 2D and 3D design and documentation of process plants;
- *OpenBuildings*, for the 3D design, and documentation of buildings and their integrated structural, HVAC, electrical, and plumbing systems;
- *OpenBridge*, for the 3D design and documentation of bridges;
- *OpenSite*, for the optimal planning, 3D design and documentation of building, residential development, and infrastructure sites;
- *OpenWindPower*, for the design of fixed and floating wind turbine structures; and
- *OpenTower*, for the design of communications towers, including for 5G capacity.

Our open simulation applications include:

- *STAAD* and *RAM*, for analysis and simulation respectively of infrastructure and building structural performance;
- *LEAP* and *RM*, for analysis and simulation of bridge structural performance;
- *SACS*, for analysis and simulation of offshore structural performance;

- *MOSES*, for analysis and simulation of floating structures;
- *PLAXIS*, for geotechnical analysis and simulation of subsurface rock and soil interacting with infrastructure foundations, footings, pilings, and tunnels;
- *SITEOPS*, for simulation of compliant site layout, and optimization of earthworks, drainage, and parking;
- *AutoPIPE*, for analysis and simulation of pipe stress in industrial process plants; and
- *LumenRT*, for enlivened animations of infrastructure projects.

Project Delivery Systems

Our Project Delivery solutions support collaboration, work-sharing, and 4D construction modeling for infrastructure project delivery enterprises. These offerings include:

- *ProjectWise*, for helping teams to manage, share, and distribute work-in-progress engineering content. *ProjectWise* enables all stakeholders involved in design and engineering to share and find information, conduct collaborative design reviews, and manage contractual exchanges faster for maximum team productivity;
- *SYNCHRO*, for planning 4D construction models for project and field management, work packaging, and immersive visualization, for instance via Microsoft HoloLens;
- *SYNCHRO ConstructSim*, for advanced work packaging, including engineering, construction, and installation work packages, and trade and task workface planning; and
- Additional cloud services for specialized project delivery use cases, including *ComplyPro*, *ProcureWare*, *Control*, and *Field*.

Asset and Network Performance Systems

Our Asset and Network Performance solutions, including our *AssetWise* systems, manage geo-coordinated information for asset performance modeling throughout the operations and maintenance lifecycle of infrastructure assets and their associated networks, in transportation, energy, and communications. These offerings include:

- *AssetWise ALIM*, for managing infrastructure asset information and linear networks and for controlling and managing change over the asset lifecycle;
- *AssetWise Asset Reliability*, for reducing equipment downtime and limiting business risk associated with equipment failures, while increasing safety, reliability, and cost effectiveness;
- *AssetWise Enterprise Interoperability*, for enabling access to multiple data sources from third-party providers, and integrating them in operations and maintenance workflows;
- *SUPERLOAD*, for automating the safe routing and permitting of overweight/oversized vehicles;
- *AssetWise 4D Analytics*, for employing advanced analytics and machine learning, particularly to IoT time series, to gather insights to understand current conditions and predict future performance;
- *AssetWise Linear Analytics*, for visualizing and understanding vast quantities of linear network data to identify trends and anomalies, and optimize maintenance decisions, for rail or road networks; and
- *OpenUtilities*, for the design and management of electric, gas, and district energy networks, and substations.

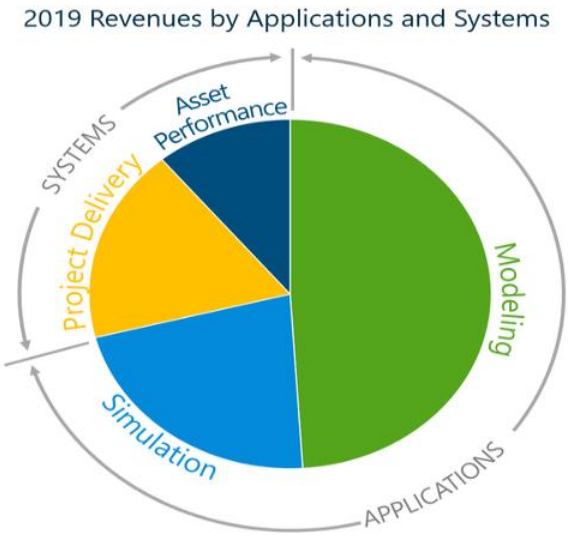
Digital Cities Applications

Our Digital Cities offerings are used for surveying, reality modeling, planning, and managing the geospatial infrastructure of cities and regions. These offerings include:

- *ContextCapture*, for surveying existing conditions of a city, construction site, or operating infrastructure asset by processing digital imagery captured by UAVs, cameras, and scanners into 3D, geo-located, engineering-ready mesh models, and providing the digital context for digital twins;
- *ContextCapture Insights*, for applying machine learning, through cloud computing, to automatically identify and classify recognizable components in reality modeling;
- *OpenCities Planner*, for engineering-ready geospatial urban planning and visualization;
- *OpenCities Map*, for engineering-level GIS functions such as mapping, cadaster, and parcel management;
- *OpenFlows*, for water, wastewater, and stormwater system planning, design, and operations, incorporating hydrological, hydraulic, and flood modeling;
- *OpenGround*, for geotechnical information management;
- *CUBE*, for vehicular traffic simulation in roadway design; and
- *LEGION*, for pedestrian traffic simulation.

Applications and Systems Revenue Mix

Our 2019 revenues attributable to our applications and systems are set forth in the chart below.



* All figures calculated using ASC 606.

iTwins Cloud Offerings

Our iTwins cloud offerings add digital twins capabilities to any account's environment. These include:

- *iTwins Design Review Service*, for browser-level immersive status visualization, ranging from ad-hoc 2D/3D discipline-specific workflows for any applications users, to *ProjectWise*-enabled 4D design reviews and analytics visibility spanning the full project scope;
- *Immersive Asset Service*, for 4D immersive visualization and analytics visibility for *AssetWise* users;
- *OpenUtilities Digital Twin Cloud Services*, for consolidating, validating, and aligning GIS, reality modeling, performance, simulation, and other data for energy and communications networks; and
- *PlantSight*, for live and evergreen digital twins of operating process plants. PlantSight is jointly developed by Bentley and Siemens and commercially available from either company.

Use Cases

Our applications and systems are used in combinations, in parallel and in sequence, for infrastructure projects and assets.

Project Lifecycle Use Case

The following example illustrates the comprehensive use of our offerings in the planning, design, and construction of a new highway overpass to accommodate increased traffic at an intersection in a growing part of a city:

At the start of the project, *ProjectWise* is set up for the project team as a structured repository for their engineering work and shared documents and models relevant to the overpass project. The physical conditions of the current roadway intersection are surveyed with drones and captured with *ContextCapture* to produce the accurate 3D model which will be the basis for the engineering work. For the planning of the overpass, *OpenRoads ConceptStation* enables the roadway designers to quickly iterate on different overpass configurations and get preliminary estimates of the construction costs of various scenarios. *OpenSite* and *PLAXIS* is used by geotechnical engineers for modeling the geotechnical properties of the site to ensure the subsurface conditions for the roadway and overpass are accurately considered in the proposed design. Visualizations and animation of the proposed design alternatives are generated by *LumenRT* for city and community reviews and approvals.

When the preliminary design is approved, *OpenRoads Designer* begins to produce the detailed design of the ramps and roadway directly from the *ConceptStation* files. Bridge engineers use *OpenBridge Modeler* to quickly evaluate various options for the overpass bridge, then *OpenBridge Designer* is used to produce the detailed design of the bridge. *LEAP* is used to model and simulate the bridge's structural performance and compliance with building codes. Throughout the detailed design phase, as the project team grows and the complexity of the design develops, *ProjectWise* supports the work-sharing for the team, manages the production and distribution of the project deliverables, and helps resolve design clashes among elements of the multidisciplinary design.

In the construction phase, as the project team expands to include contractors and subcontractors, detailers, and fabricators, *ProjectWise* coordinates and provides an audit trail of the distribution of documents and approvals, ensuring the right team members have the right information at the right time. The construction management team uses *SYNCHRO 4D* to take the 3D models of the project and assign sequencing attributes to the various constructible elements, creating a 4D construction model used to evaluate different construction sequences during planning, and to track the progress of the actual construction through to completion. *SYNCHRO ConstructSim* is used to automate the detailed workface planning to create work packages of trades, materials, and schedules for each step and each section of the construction project.

When the construction planning is complete and the roadway and ramp grading is ready to begin, the project terrain model created by *OpenRoads Designer* is exported via *ProjectWise* to Topcon's *Magnet* software, which drives the GPS-enabled grading machinery to grade the surface of the site earthworks to the exact elevations of the design model. As the construction progresses, UAVs with *ContextCapture* continuously surveys the site to enable our solution's reality modeling capabilities to track the volume of soil still to be cut and filled, and monitor the actual progress to determine the "earned value" for contractor payments.

Asset Lifecycle Use Case

When the roadway overpass project is complete and operational, our Asset Lifecycle solutions can help keep its infrastructure in peak performance:

AssetWise Asset Reliability manages the inspection and inventory of all types of transportation infrastructure assets, including bridges, culverts, signs, light poles, antenna towers, stormwater networks, guardrails, retaining walls, and other ancillary structures. UAVs with *ContextCapture* continuously survey the roadway and overpass and use machine learning to identify storm drains that are clogged or road surface cracks and potholes needing repair and *AssetWise Enterprise Interoperability* alerts enterprise maintenance systems to issue work orders for repairs.

Sensors on the overpass bridge provide performance data to the asset performance digital twin and *AssetWise 4D Analytics* compares the observed performance to the predicted performance of the digital twin and spots trends for future performance, ensuring the safe operation of the bridge. *SUPERLOAD*, which maintains a cloud database of the dimensions and structural capacities of all the bridges in the state, further supports the operation of the overpass by permitting and routing over-sized and overweight vehicles to ensure those vehicles can safely cross the bridge, or have the clearance to drive under it, without damage to the vehicle or the bridge.

As the city grows, *CUBE* simulates the increase in vehicular traffic in different areas and *AssetWise Linear Analytics* analyzes the road network and projects the impact of increased traffic on the overpass. *Linear Analytics* also indicates the impact of a lane closure due to construction or an accident and provides alternate routing to alleviate congestion. When road construction involves subsurface utilities, *OpenUtilities* provides accurate documentation to the field to locate and identify the utility networks in the construction zone and analyzes the water pipe networks to help pinpoint the source of leaks. If there is flooding due to a water main break or an extreme weather event, *OpenFlows FLOOD* models the extent of flooding over the timeline of the event and determines its impact on the roadway and overpass.

AssetWise ALIM tracks and manages all of the overpass and roadway network asset information, ensuring that changes over its lifecycle are recorded and those affected by the impact of those changes on the entire road network are notified. *ALIM* streamlines the data analysis and reporting required for compliance with local, regional, and national transportation authorities.

Our Commercial Offerings

Licensing Models

Our applications are offered through perpetual licenses or term licenses, priced dependent on the country of purchase and use. Most accounts owning perpetual licenses subscribe to our SELECT coverage which, in addition to providing support and upgrades, enables the use of their licenses for each product to be pooled within each country. For most larger accounts (generally a minimum of $250,000 ARR) we have traditionally offered an ELS, which entitles unlimited use of any of our applications for an annual fixed fee, reset annually generally based on actual usage (within each country) for the previous year. During the fourth quarter of 2018, to respond to and improve upon new commercial models offered by peers and competitors, we introduced a new global consumption-based plan with consumption measurement durations of less than one year, E365, which is priced uniformly per application per day of actual usage in any country, and inclusive of Success services (described below) by our colleagues to assist with expanding and gaining the most value from usage of our software. We have begun upgrading ELS accounts to E365, beginning with the largest global accounts.

Our systems, *ProjectWise* and *AssetWise*, are offered under our CSS program, charged quarterly based on actual users of “passports” and “visas” for various levels of functionality. Passport and visa pricing include Azure provisioning at our cost, although some accounts elect to continue on-premises and/or hybrid hosting. CSS commercial models entail an annual funding commitment, generally paid upfront, based on an estimation of services to be used for the upcoming year. Actual consumption is monitored and invoiced against the deposit on a calendar quarter basis. Accounts are charged only for what gets used, and deposited amounts never expire. At the end of 2019, accounts comprising approximately 58% our total ARR had chosen to institute our new commercial models of CSS and/or E365 consumption funding for licensing of our software.

Success Plans

Over the past several years we have re-deployed the post-sale focus of our success force, comprising more than 900 colleagues with experience and credentials in infrastructure engineering, from on-demand professional services and training to instead fulfill "Success Plans." Through Success Plans we assume proactive responsibilities to accounts to maximize their value from our solutions, which we accomplish by assigning our success force experts to be dedicated to serve multiple accounts requiring similar specializations. Typically, our success force engages with our accounts remotely. Success Plans are bundled into our new E365 commercial program and are growing rapidly among our major accounts.

Our success force also provides:

- *Managed services*, under Service Level Agreements ("SLAs"), to administer accounts' instances of our Azure-provisioned *ProjectWise* and/or *AssetWise* systems. SLAs vary as to our scope of responsibility, sometimes including Success Plans and/or our colleagues dedicated onsite;
- *Professional services*, mainly for implementation and integration of our *ProjectWise* and *AssetWise* systems within substantial enterprises, although we seek to minimize the need for this; and
- *Digital Advancement Academies*, where we convene industry participants to share best practices, including in programs with major owner-operator accounts to onboard their supply chains for initiatives in going digital.

Our Accounts

We provide our software solutions to over 34,000 accounts in 172 countries worldwide. Our revenues are balanced and diversified between engineering and construction contracting firms who work together to deliver the design and construction of capital projects (representing 54% and 55% of our 2018 and 2019 revenues, respectively), and their clients, the world's public and private infrastructure asset owners and operators (representing 46% and 45% of our 2018 and 2019 revenues, respectively).

We do not have material account concentration. No account, including any group of accounts under common control or accounts that are affiliates of each other, represented more than 2.5% of our revenues in 2018 or 2019.

User Case Studies

Examples of the value of Bentley's infrastructure engineering software solutions for the design, construction and operations of critical infrastructure include:

Case Study: Italferr S.p.A.

Italferr Comprehensively Leverages Bentley's Design Integration Solutions for Project Digital Twin in Critical Infrastructure Project

The Challenge

Following the tragic collapse of the Morandi Bridge in Genoa, Italy in 2018, Italferr S.p.A. was commissioned to develop the engineering design of the new viaduct over the Polcevera River. The viaduct forms a critical link in the region's transportation system and economy, which made it imperative to apply the latest technology to speed the design and construction of the replacement bridge. The project had to be tackled in innovative ways to ensure the speed of modeling and design decisions, with the requirement to complete the detailed engineering design in about three months, and the construction completed less than two years after the collapse. This meant that engineering workflows and construction workflows that are typically sequential had to be done in parallel to meet the extraordinary timeline for the engineering of the 1067-meter-long viaduct.

The Solution

Italferr turned to Bentley's design integration portfolio for the multi-disciplinary engineering of the viaduct and ProjectWise's connected data environment for project team collaboration, enabling the various engineering teams to seamlessly integrate their BIM models. Bentley's reality modeling solution was used to quickly perform aerial LIDAR surveys of the site to automatically generate digital terrain models from the aerial imaging, and Italferr used Bentley's geotechnical modeling applications to model the subsurface conditions. As the roadway alignment was being engineered with OpenRoads, another part of the design team modelled the structural, HVAC, and electrical systems as generative components, leveraging the inherent computational design capabilities in OpenBuildings' GenerativeComponents technology. Since the sizing, angle, and orientation of these components were all driven by the geometry of the centerline alignment for the viaduct's roadway, these computational design capabilities meant that the model and its related documentation could be automatically updated as the roadway alignment geometry or other governing geometry was updated to optimize the design.

With the ProjectWise connected data environment as the collaboration and data federation hub for the project, it enabled digital workflows to keep the project digital twin continuously up-to-date, and to find and resolve clashes between the various components while still in the engineering phase. From the project digital twin, a 4D construction digital twin was created using SYNCHRO to strategize, visualize, and industrialize the construction sequence for optimal outcomes—as the concrete piers were being erected, the steel cross-sections of the decking spans could be fabricated offsite, transported to the construction site, assembled on the ground, then lifted in place onto the piers.

Added Benefits

The project digital twin also made it possible to extract volumes and quantities from the model which, when they were systematically organized into schedules, allowed the total cost of the work to be precisely defined. Italferr also is working to create an asset performance digital twin of the new viaduct to be used in the operation lifecycle, complete with information useful for organizing and managing maintenance. This objective will allow the digital twin model to leverage the digital components of the BIM model for use in operations and maintenance, linking the digital twin to IoT sensors monitoring the bridge performance to ensure its operational performance and safety. The project includes the construction of a photovoltaic system with an output power of 136 kW to use renewable energy to power the safety monitoring systems as well as the lighting, controls, and drainage equipment of the viaduct.

Account Growth

Italferr has been using Bentley's civil engineering solutions for more than ten years, and since 2016 has expanded their adoption of Bentley offerings to include ProjectWise and a comprehensive portfolio of design integration applications.

Case Study: Shell

Shell Advances to 4D Construction Digital Twins with Bentley's Reality Modeling

The Challenge

To help in realizing its goal of building the "plant of the future" for a multi-billion-dollar chemical plant in western Pennsylvania, Shell wanted to regularly survey the construction site to track and improve the progress of the project, but because of the scale of the 386-acre site, and the inherent safety challenges in surveying an active construction site, conventional surveying methods were not feasible. To meet this challenge, Shell turned to Bentley's ContextCapture software.

The Solution

UAVs (Unmanned Aerial Vehicles) equipped with digital cameras perform at least weekly photographic surveys on the site and upload nearly 8,000 digital photos to Bentley's ContextCapture cloud service, which automatically

processes the 2D images into a 3D “reality mesh.” The reality mesh is dimensionally accurate and engineering-ready, making it an effective digital twin of the physical construction site. A new digital reality mesh is generated on a weekly basis, maintaining a 4D construction digital twin, enabling the engineering and construction teams to monitor the actual construction progress over time in comparison to planned progress.

The Shell project team has worked with Bentley on a bi-monthly basis to use the digital twin and Bentley’s flood modeling application, OpenFlows FLOOD, to simulate the effects of heavy rainfall events resulting in potential flooding on the site. The results enable Shell Construction management to devise strategies to mitigate potential disruption to the construction schedule, swiftly re-planning workfront activities as well as assessing any environmental damage.

Added Benefits

The digital twin of the construction project was also instrumental in enabling the project team to identify and resolve potential construction clashes in near-real-time, helping keep the project on track. In addition, the project team used the reality meshes to monitor soil erosion, manage construction materials inventory, improve emergency response management, and identify potential hazards. The digital twin will facilitate safe plant operations, for instance through the accurate 3D location of underground piping, based on the capture of reality meshes for reference prior to trenches being filled in.

The continuous surveying of the existing site conditions ensures that the 4D construction digital twin always mirrors the current status, which is made securely accessible to the project teams via a web browser and immersive visualization. This allows Shell stakeholders, and the engineering, procurement, and construction (EPC) contractors, to optimize their collaboration and decision-making based on an up-to-date, single view of physical reality in relation to the 4D project plan.

Account Growth

The use of ContextCapture and OpenFlows FLOOD adds to Bentley applications and systems cumulatively used for Shell projects and assets by its engineering, construction and plant operations groups. For example, Shell engineers use STAAD, SACS and MOSES for onshore and offshore structural simulation respectively, AutoPIPE for plant pipe stress simulation and PLAXIS for geotechnical engineering. In construction, Shell and EPC contractors use SYNCHRO Advanced Work Packaging for workface planning, achieving significant improvements in “hands-on-tools time.” In operations, AssetWise Reliability solutions have been applied to improve operational uptime. Spanning the project and asset lifecycles at mega-scale, Shell facilities benefit from ProjectWise and AssetWise connected data environments and are most recently leveraging Bentley’s iTwin services to open up the “dark data” from other vendors’ plant design applications.

Case Study: Shenzhen Expressway Engineering Consultants Co., Ltd.

深圳高速公路股份有限公司
Shenzhen Expressway Company Limited

Shenzhen Expressway Engineering Consultants Leverage iTwin Technology for Delivery of Complex Highway Interchange

The Challenge

The east grade-separated interchange engineering of Yan’gang in Shenzhen, Guangdong, China, was initiated to accommodate the convergence of four high-speed roadways, which transport cargo from the Shenzhen Yantian Port and is a connector for high-speed traffic to the downtown area. The complex interchange network runs 10.5 kilometers in length, including 10 new ramps, 16 bridges, and eight tunnels and underpasses. The RMB 1.47 billion project is one of the key demonstration projects chosen by the People’s Republic of China’s Ministry of Transport (MOT) to serve as a benchmark for innovation in the design, engineering, and construction of traffic infrastructure in Shenzhen. As the leading unit of the MOT’s BIM Industry R&D Center, Shenzhen Highway Engineering Consultants is responsible for project delivery of the interchange, and for establishing a BIM and digital twin methodology throughout the entire project lifecycle that will become a model for the whole traffic engineering industry in Guangdong. The project scope includes the integrated site and multi-disciplinary highway engineering, the coordination and management of the large

volume of data from multiple sources, including teams responsible for land acquisition and site demolition, and oversight of the complex construction works, while ensuring that the project meets the highest standards of quality, safety, cost management and timely completion.

The Solution

In addition to a comprehensive set of Bentley's open modeling applications and the ProjectWise collaboration system, the Shenzhen Expressway Engineering team used Bentley's iTwin technology to create project and construction digital twins to analyze several traffic relief and interchange design schemes for an optimal design and construction plan. With an engineering and construction project this complex, it is essential that changes in any of the engineered systems (including earthworks, subsurface drainage networks, road and bridge foundations and superstructures, and roadway alignments), be communicated and synchronized to the entire project team, and that any potential physical clashes among these systems by identified and resolved prior to construction.

UAVs used Bentley's reality modeling solutions, enabling continuous surveying of the site to monitor the construction progress. Bentley's design integration and project delivery solutions, in concert with Bentley's iTwin technology, facilitated real-time collaboration, change synchronization, and data access, identifying and proactively resolving over 60% of site interference problems to avoid construction delays and cost overruns. Through a 4D construction digital twin created with SYNCHRO, the team simulated virtual on-site construction to verify workflows and meet the 35-month construction schedule.

Added Benefits

The aggregation of data from multiple sources in the digital twin, and making that data open to analytics and accessible to project stakeholders, has provided valuable business and engineering insights to keep the project on track. For example, according to the actual conditions at site as continuously surveyed through reality modeling, the management team can analyze the observed progress deviation from schedule and can rationally allocate the manpower, material, machines and other resources to keep the project on schedule and on budget. The digital twin is providing the visibility needed to make its supervision more efficient—the industry supervision organizations, the owner, and the third-party survey company can assess the performance of each party in this project, and can initiate ratification notices and link it with the model, making the whole process online and transparent. In addition, through the innovative application of digital twin, it has been possible to achieve positive results in both energy saving and environmental protection. Upon completion, the "digital DNA" of the digital twin will be seamlessly reconfigured as an asset performance digital twin for the complete operations and maintenance lifecycle.

Account Growth

Beginning with their first use of Bentley's civil engineering solutions in 2017, Shenzhen Expressway Engineering Consultants have expanded their adoption of Bentley's full project delivery and asset performance solutions portfolio and is now one of the leading consumers of Bentley's iTwin technology.

Case Study: Águas do Porto

H2PORTO, A Technological Platform for the Integrated Management of the Urban Water Cycle

The Challenge

Águas do Porto is a water utility company providing service and management of the urban water cycle in Porto, the second largest city in Portugal. With nearly 157,000 customers, Águas do Porto currently manages 818 kilometers of water mains, 558 kilometers of foul water sewers, and 661 kilometers of storm water drainage pipes, in addition to 66 kilometers of streams and 3.4 kilometers of seafront. Águas do Porto has installed and manages data from 34,000 smart water meters on customer properties and has over 350 telemetry and telecontrol devices installed throughout its network, a number that continues to increase.

Águas do Porto was challenged with finding a better way to manage the vast number of infrastructure assets and water resources required to manage the city's water cycle and to integrate, manage and analyze a huge amount of data collected from many sources with numerous existing, and sometimes incompatible, software systems. To meet this challenge, the company began development of H2PORTO, a technology platform for the integrated management of the urban water cycle. The overarching goals of the project are to promote a culture of innovation and smart water management for the efficient usage of existing resources and to achieve better overall asset management and service.

The Solution

OpenFlows, OpenFlows WaterGEMs, and OpenFlows FLOOD were used for the design, configuration, implementation, and automation of all the modeling and predictive capabilities, and for the creation of a digital twin of the city's water supply, wastewater, stormwater, and bathing water systems, to forecast flooding and water quality issues, and to improve service response and resilience. The predictive models automatically generate daily forecasts and publish the results in the project platform. Bentley consultants also developed services for on-demand, online simulation analysis of network changes resulting from pipe bursts, valve closures, and pumping station shutoffs.

The H2PORTO platform incorporates all data gathered from more than 22 different sources, including billing, meters, sensors, operations, SCADA, weather stations and traffic control systems. Integrating all this data in an agnostic technological platform management system, the company created a powerful tool that enables better and more reliable water service and achieves more structured and effective communication and collaboration for 400 internal users, customers and other stakeholders. The platform relies on the identification of issues related to common standards and processes for data provision, communication amongst technological platforms, business intelligence tools, and decision making through the analysis of data, modelling tools and predictive analysis, striving to better inform its citizens.

Added Benefits

The digital twin of the water system has evolved to an *asset performance digital twin*. The insights gained from the digital twin enable the team to adjust their asset management strategies every day, allowing for more sustainable asset planning. The digital twin helps engineers and technicians to investigate and analyze the networks in more detail and from different perspectives, with room for tests and simulations that are not achievable in real-life scenarios. The modeling of flooding and pollution events specifically empowers the teams with the information they need to take the necessary actions to prevent damage or harmful incidents before they occur. Since 2016, the rate of water meters replacement almost doubled, the average duration of pipe bursts repairs improved by 8%, and water supply interruptions and malfunctions in water mains both decreased about 20%.

Account Growth

Águas do Porto has been a user of Bentley's solutions since 2013.

Our Technology

Our business is singularly focused on software for infrastructure engineering, primarily for the world's largest projects and assets. As a result, we manage our software products to meet constraints imposed for fitness to this purpose. Our market position is built on several reputational hallmarks, including:

- generational stability of file formats, corresponding to the long lives of infrastructure projects and assets;
- commitment to openness and interoperability with competitors' file formats;
- continuity of software applications' lifecycles, never jeopardizing users' cumulative investments by requiring them to "start over"; and
- highest capacity and performance, versus competitors, for large infrastructure models and datasets.

Application Framework

Our software solutions are delivered using flexible, reusable, and open technology, which results in highly integrated applications and cloud services that support comprehensive digital workflows in a scalable manner. For example, our modeling and simulation applications, including MicroStation, leverage a set of reusable components for graphics editing, visualization, solid modeling, and other capabilities. This open framework supports the addition of domain specific features, allowing us to offer highly compatible and well-integrated discipline-specific applications based on this common framework.

Microsoft Integration

Our software leverages Microsoft's platform technologies. We seek to take full advantage of integration with Microsoft Office 365 and other horizontal applications such as Teams for workflows that unify our engineering applications within enterprise environments across all computing form factors and devices.

iModels and iModelHub

We support a rich format for digital twins called an iModel, a relational database encapsulated in a file, that stores aligned domain data from multiple source applications. iModels are synchronized with our design applications and we provide software development tools to enable iModels to be synchronized with third-party applications or services. We have created and maintain iModel connections to most of the significant applications used in infrastructure engineering. iModels provide a common data currency to support open and easy exchange between users and systems, and we believe that they have become a de facto standard for visibility and collaboration of digital engineering models. iModelHub, an iTwin cloud service, manages each iModel as a distributed database with an intrinsic ledger of changes (enabling alignment, accountability, and accessibility of digital components over the lifecycle of a project or an asset) to form the backbone of an infrastructure digital twin. To foster an expanded ecosystem of digital twin innovation, our iModel.js code is available on GitHub as an open source library under the MIT license.

Our Licensing and Administration Platform

All of our applications and systems share a cloud-native platform for license pooling, management of subscription entitlements, and usage reporting for us and for accounts, including for commercial consumption metrics. Our platform also logs usage of particular "instrumented" functions within our applications to enable our success force to be of most value. Our platform can also provide in-application messaging to users from our success force.

Our Acquisitions

Since our founding, we have purposefully pursued a strategy of regularly acquiring and integrating specialized infrastructure engineering software businesses, including 18 acquisitions over the past five years. Our average historical annual revenue growth rate from acquisitions over the last six years has been approximately 1.1%. Our acquisitions have the following purposes:

- filling in the breadth and depth of our comprehensive applications portfolio across disciplines and infrastructure sectors, especially where the developer organizations have already worked on integration and compatibility with our platforms and APIs;
- extending our lifecycle comprehensiveness, especially for our Asset and Network Performance, and Digital Cities product advancement units;
- adding new horizontal technologies that we can incorporate within our platforms for the benefit of our applications and systems at large, such as reality modeling; and
- adding new distribution capacity, such as to channel partners in geographies where we wish to accelerate our scale and growth.

Our executive management and our Portfolio Development team proactively identify and develop potential acquisition subject areas and unsolicited candidates. We also are prepared, experienced, and able to respond with agility when appropriate situations may appear opportunistically. We have a disciplined and proprietary diligence and valuation process for evaluating acquisition targets. Our general practice is to fully assimilate the acquired companies' functions into our global functional structure as quickly as possible, supported by a dedicated team to manage and streamline the integration process.

We prioritize the retention and development of the acquired incoming colleagues from our acquisitions, including offering talent mobility for key personnel. Further, many of our current line executives are former founders and/or C-level officers of companies we have acquired.

Examples of key recent acquisitions, along with their purposes, include:

- *PLAXIS* (2018), *SoilVision* (2018), and *Keynetix* (2019), to become what we believe be a world leader in geotechnical engineering modeling and simulation software and in geotechnical information management;
- *SYNCHRO* (2018), to become a leading provider of 4D construction modeling software;
- *ACE Enterprise* (2018), to integrate our systems with enterprise environments such as SAP and IBM's Maximo;
- *Citilabs* (2019), to add vehicle traffic simulation software (CUBE) and roadway movement data (Streetlytics) to lead to improved mobility digital twins for Digital Cities;
- *OrbitGT* (2019), to add specialized capabilities for mobile mapping (such as vehicle-based scanning and photogrammetry) to our reality modeling offerings for Digital Cities;
- *GroupBC* (2020), to bring additional common data environment solutions for construction projects and infrastructure assets, and federate to iTwin cloud services, extending the value of project and asset information through digital twins; and
- *Cohesive Solutions* (2020), to bring digital integrator expertise for the convergence, through digital twin cloud services, of digital engineering models (ET), with IT and OT, for infrastructure assets in the utilities, energy and facilities sectors.

Our Competition

The market for our software solutions is highly competitive and subject to change. We compete against large, global, publicly-traded companies that have resources greater than our own, and also against small, new, or geographically-focused firms that specialize in developing niche software offerings. While we do not believe that any competitor offers a portfolio as comprehensive as ours, we do face strong competition, varying by infrastructure lifecycle phase and sector:

- our key competitors in **public works/utilities applications** include Autodesk, Inc., Trimble Inc., Hexagon AB, and Dassault Systèmes;
- our key competitors in **industrial/resources applications** include Hexagon AB and AVEVA Group plc;
- our key competitors in **commercial/facilities applications** include Autodesk Inc., Nemetschek SE, and Trimble, Inc.;
- our key competitors in **project lifecycle systems** include Autodesk, Inc. and Oracle Corporation with their Primavera P6 and Aconex offerings; and
- our key competitors in **asset lifecycle systems** include Aspen Technology, Inc., AVEVA Group plc, Environmental Systems Research Institute, Inc., and General Electric Corp.

The principal competitive factors affecting our market include:

- product features, performance, and effectiveness;
- reliability and security;
- product line breadth, depth, and continuity;
- comprehensiveness of offerings across disciplines and infrastructure sectors;
- specification by and endorsement of infrastructure owners, and degree of adoption across the relevant supply chain;

- familiarity and loyalty by professionals throughout their training and careers;
- ability to integrate with other technology;
- capacity to operate at scale;
- capabilities for configurability and APIs;
- ease of use and efficient workflows;
- price, commercial model, and total cost of use;
- support of industry standards;
- strength of sales and marketing efforts; and
- brand awareness and reputation.

We believe we compete favorably against our competitors based on the factors above and that we distinguish ourselves through our comprehensive software portfolio, our commitment to both integration and interoperability across the entire infrastructure lifecycle, our flexible commercial models, and our direct sales channels.

Our Sales and Marketing

We bring our offerings to market primarily through direct sales channels that generated approximately 92% of our 2019 revenues. Our direct sales channel includes:

- Corporate Account Managers, who are responsible for our largest accounts;
- Inside Sales Specialists, who are responsible for servicing small-to mid-sized (“commercial”) accounts in territories defined by geography and product lines; and
- Product Sales Specialists, who are technical experts in a specific product line who work with Corporate Account Managers and Inside Sales Specialists.

We rely on specialist channel partners in geographic regions where we do not currently have a meaningful presence and where, for many of our offerings, direct sales efforts are less economically feasible. Channel partners accounted for approximately 8% of 2019 revenue. We are establishing digital integrators such as Digital Construction Works to serve as global channel partners. In addition, we have established a new business endeavor, DXW+, which offers practitioner subscriptions that include virtual support and advice from DXW’s engineering experts. DXW+ is available in selected and expanding geographies, and for individual professionals in any organization. We also benefit from additional sales resources and coverage from our digital co-venturers through various forms, including bundles of our offerings with theirs.

Sales cycles for our applications tend to be relatively short, measured in weeks. The most prevalent transactions are increases by accounts in their use of our applications already in use. Our sales model allows and encourages accounts to try usage of our applications that are new to them with minimal obligation. We act upon our logs of such new usage to assign user success colleagues to help the new users in this expanded adoption.

Our system offerings, *ProjectWise* and *AssetWise*, are generally sold through either proactive proposals or responses to RFPs, so sales cycles for those offerings range from months to several quarters. We have a comprehensive global proposals team to assure appropriate business development resources are allocated, to quality-assure efficient and effective proposal contents, and to maximize the capture ratio for our proposal pursuit.

Our marketing functions include:

- *corporate marketing*, to build brand awareness, brand equity, and thought leadership, including through corporate events and programs covering industry trends and challenges, and to conduct market research and industry studies;
- *industry and product marketing*, for demand generation through digital marketing channels, including our website, Internet advertising, webinars, and virtual events, and paid and organic social media, and though traditional marketing channels such as trade print advertising, press releases, editorial

placements, industry-specific trade shows and conferences, in-person seminars, and locally-sponsored events; and

- *regional marketing*, to localize and deliver our marketing programs throughout the world.

We also invest in our annual Year in Infrastructure Conference, which brings together leading infrastructure thought leaders from around the world for presentations on innovative projects, to learn about the latest advances to our applications and cloud offerings, and to network and share best practices. Our associated Year in Infrastructure Awards, which in 2019 attracted over 500 project nominations from our accounts and are judged by independent juries in approximately 20 categories for going digital in infrastructure engineering.

Our Research and Development

We continue to make substantial investments in research and development because we believe the infrastructure engineering software market presents compelling opportunities for the application of new technologies that advance our current solutions. Our research and development roadmap balances technology advances and new offerings with continuous enhancements to existing offerings. Our allocation of research and development resources is guided by management-established priorities, input from product managers, and user and sales force feedback.

We had approximately 1,500 colleagues engaged globally in software research and development as of December 31, 2019. Each of our product advancement groups for Design Integration, Project Delivery, Asset and Network Performance, and Digital Cities have research and development resources and responsibilities. Our iTwin Services group consists of over 275 colleagues and is entirely devoted to the rapid development of new and incremental cloud-native services for infrastructure digital twins. Our separate Chief Technology Office assesses the potential of new software technologies and sources.

As part of our resource allocation process, we also conduct a cost-benefit analysis of acquiring available technology in the marketplace versus developing our own solutions. Our Portfolio Development office, in addition to pursuing appropriate acquisitions and digital-integrator startups, allocates funding for internal “acceleration” projects, to “make” rather than “buy.” Each such project is staffed with colleagues dedicated to the “intrapreneurial” incubation of a new offering, which is brought back to its respective sponsoring product advancement group after market introduction.

For the years ended December 31, 2017, 2018, and 2019, and for the six months ended June 30, 2020, our research and development spending was $151.2 million, $175.0 million, $183.6 million, and $89.4 million, respectively, and as a percentage of total revenues was 24.0%, 25.3%, 24.9%, and 23.6%, respectively.

Digital co-ventures

In 2019, we and Topcon created an equally-owned joint venture, Digital Construction Works, Inc. to serve as a digital integrator for major construction projects and related enterprises. We and Topcon each contributed experienced colleagues in addition to the required capital commitments.

As part of our co-venturing with Siemens, we undertake a program of joint research and development investment in which each company bears its own costs. These investments have led to jointly offered cloud services for infrastructure digital twins, some of which are already commercially available. We and Siemens have committed to a cumulative investment of over €100 million to fund the joint innovation investment program.

Our Talent and Our Values

As of June 30, 2020, we had 4,010 full-time colleagues. Our colleagues are located in 42 countries, including 1,568 in the Americas, 1,183 in EMEA, and 1,259 in APAC. We embrace diversity among our colleagues, who collectively bring 64 languages to fulfill the needs of our globally dispersed accounts and users. Our colleagues are highly qualified with an average of seven years of total service with the Company and advanced academic credentials, including 90 doctoral degrees and 1,046 master’s-level degrees.

We believe our culture and values are key to our mission and key to our success in competing to attract and retain highly talented colleagues. Our culture and values include a motivation to make an impact on the world’s infrastructure to improve quality of life, a passion to solve our users’ challenging problems through innovation and creativity, a desire to connect and collaborate, and a commitment to deliver on our promises.

In addition to competitive compensation and benefit programs, we support our colleagues' interests in their communities with civic outreach and corporate giving matching programs, as well as an annual stipend for every colleague globally to support their choice of investment in Science, Technology, Engineering, and Math (STEM) programs.

None of our colleagues in the United States is covered by a collective bargaining agreement. We have never experienced a strike or similar work stoppage, and we consider our relations with our colleagues to be favorable.

Our Intellectual Property

We believe that the success of our business depends more on the quality of our proprietary software solutions, technology, processes, and domain expertise than on copyrights, patents, trademarks, and trade secrets. While we consider our intellectual property rights to be valuable, we do not believe that our competitive position depends primarily on obtaining legal protection for our software solutions and technology. Instead, we believe that our competitive position depends primarily on our ability to maintain a leadership position by developing innovative proprietary software solutions, technology, information, processes, and know-how. Nevertheless, we rely on a combination of copyrights, patents, trademarks, and trade secrets in the United States and other jurisdictions to secure our intellectual property, and we use contractual provisions and non-disclosure agreements to protect it. As of December 31, 2019, we had 116 patents granted and 53 patents pending in the United States, the first of which expired on May 24, 2020, and 21 patents granted and 33 patents pending internationally, the first of which expires on August 14, 2022. In addition, from time to time we enter into collaboration arrangements and in-bound licensing agreements with third parties, including certain of our competitors, in order to expand the functionality and interoperability of our software solutions. We are not substantially dependent upon any one of these arrangements, and we are not obligated to pay any material royalty or license fees with respect to them.

Our patents cover systems and methods relating to various aspects of software for infrastructure design and modeling, collaboration and work sharing and infrastructure asset operations. Among other things, our patents address a broad range of issues in infrastructure domains from analyzing building energy usage and structural analysis, railway system maintenance, water network design and operation and augmented reality, as well as techniques for creating, storing, displaying, and processing infrastructure models.

To innovate and increase our strategic position, our software developers are incentivized to alert our internal patent committee to innovations that might be patentable or of strategic value. In 2019, our patent committee reviewed 20 invention disclosures submitted by our software developers, and filed 25 U.S. and eight foreign patent applications, while 16 U.S. and three foreign patents were granted. We also plan to assess appropriate occasions for seeking patent and other intellectual property protections for aspects of our technology and solutions that we believe constitute innovations providing significant competitive advantages. We have registered 129 trademarks, including "Bentley," "MicroStation," "AssetWise," and "ProjectWise," with the U.S. Patent and Trademark Office and in several jurisdictions outside the United States.

Our names, logos, website names, and addresses are owned by us or licensed by us. This prospectus contains trademarks, trade names, and service marks of other companies, which are the property of their respective owners. Solely for convenience, trademarks, and trade names referred to in this prospectus may appear without the ®, TM, or SM symbols, but the lack of those references is not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable licensor to these trademarks, trade names, and service marks. We do not intend our use or display of other parties' trademarks, trade names, or service marks to imply, and such use or display should not be construed to imply, endorsement or sponsorship of us by these other parties.

Our Facilities

Our corporate headquarters are located in Exton, Pennsylvania and consist of 107,051 square feet of office space, 76,392 square feet of which we own. Our lease for the remainder expires in 2025. Our headquarters accommodates our principal software engineering, sales, marketing professional services, and administrative activities. For more information, see Note 5 to our consolidated financial statements included elsewhere in this prospectus. In addition to our headquarters, we own one other location in India, which is used for office space, for an aggregate total, including our headquarters, of 106,392 square feet of real property owned by us. We lease facilities in an additional 96 locations across 36 countries.

We believe that our current facilities are suitable and adequate to meet our current needs and that suitable additional or substitute space will be available as needed in the future to accommodate our operations.

Legal Proceedings

We are subject from time to time to various legal proceedings and claims which arise in the ordinary course of our business. Although the outcome of these and other claims cannot be predicted with certainty, we do not believe that the ultimate resolution of pending matters will have a material adverse effect on our financial condition, cash flows, or results of operations. We currently believe that we do not have any material litigation pending against us.

MANAGEMENT

Executive Officers, Directors and Director Nominee

The following table sets forth the name, age, and titles of our executive officers, directors and director nominee as of the date of this prospectus:

Name	Age	Position
Gregory S. Bentley	65	Chairman, Chief Executive Officer and President
Keith A. Bentley	62	Chief Technology Officer and Director
Barry J. Bentley, Ph.D.(1)	64	Director
Raymond B. Bentley	60	Executive Vice President and Director
Kirk B. Griswold(1)	58	Director
Brian F. Hughes(1)	61	Director
Janet B. Haugen	61	Director Nominee
David J. Hollister	55	Chief Financial Officer and Chief Operations Advancement Officer
David R. Shaman	54	Chief Legal Officer and Secretary

(1) Member of the audit committee.

The following includes a brief biography for each of our executive officers and directors, with each director biography including information regarding the experiences, qualifications, attributes or skills that caused our board of directors to determine that each member of our board of directors should serve as a director as of the date of this prospectus.

Gregory S. Bentley has served as President and Chairman of our board of directors since June 1996 and Chief Executive Officer since August 2000. Prior to joining us in 1991, Mr. Bentley founded and served as Chief Executive Officer of Devon Systems International, Inc., a provider of financial trading software, which was sold to SunGard Data Systems, Inc. in 1987. Mr. Bentley served as a director of SunGard and a member of its audit committee from 1991 through 2005. He holds a B.S. in economics and an M.B.A. in finance and decision sciences from the Wharton School, University of Pennsylvania. He is a trustee of Drexel University.

We believe that Mr. Bentley is qualified to serve as a member of our board of directors due to the extensive and valuable business and managerial perspective he has and his significant experience in the software technology industry, together with a deep understanding of our history and commitment to the markets we serve.

Keith A. Bentley co-founded our Company and has served as a director since our inception in 1984. He previously served as the Company's President from 1984 to 1995 and as the Chief Executive Officer from 1984 to 2000. He currently serves as Chief Technology Officer, a position he has held since 2000. He holds a Bachelor's degree in electrical engineering from the University of Delaware and an M.S. in electrical engineering from the University of Florida.

We believe that Mr. Bentley is qualified to serve as a member of our board of directors due to the perspective and experience he brings as one of our co-founders and our Chief Technology Officer, and his experience in the software industry, especially as it relates to our technology and solutions.

Barry J. Bentley, Ph.D. co-founded our Company and has served as a director since 1984 and as an executive officer from 1984 through 2019. From September 1984 to June 1996, Dr. Bentley served as Chairman of our board of directors. Prior to co-founding our Company, in 1979, he co-founded and served as Vice President of Dynamic Solutions Corporation, a software firm. Dr. Bentley is one of the originators of MicroStation and was continuously involved in the planning and development of our software solutions and technology since our inception through 2019. He holds a Bachelor's degree in chemical engineering from the University of Delaware and an M.S. and Ph.D. in chemical engineering from the California Institute of Technology.

We believe that Dr. Bentley is qualified to serve as a member of our board of directors due to his deep knowledge and understanding of the Company's technology, history, and mission as one of our co-founders, as well as his experience in the software industry.

Raymond B. Bentley has served as a director since May 2015 and has served as an Executive Vice President since 1984. He was the lead developer for MicroStation and chief architect in the core-graphics group. He holds a Bachelor's degree in mechanical engineering from Rensselaer Polytechnic Institute and an M.S. in computer engineering from the University of Cincinnati.

We believe that Mr. Bentley is qualified to serve as a member of our board of directors due to his vast experience with our technology and the software industry, and for the business perspective he brings to the board.

Kirk B. Griswold has served as a director since 2002. He is a Founding Partner of Argosy Capital Group, Inc., a private equity and real estate firm. He holds a Bachelor's degree in Physics from the University of Virginia and an M.B.A. with a dual major in Finance and Management from the Wharton School, University of Pennsylvania.

We believe that Mr. Griswold is qualified to serve as a member of our board of directors due to his extensive experience in engineering, project management, and consulting, as well as his knowledge and experience in finance.

Brian F. Hughes has served as a director since February 2020. He retired from KPMG LLP in 2019 where he was a partner from 2002 to 2019, serving as National Private Markets Group Leader from 2012 to 2019, National Co-Leader of KPMG's venture capital practice from 2009 to 2019, and the practice leader of the Technology and Venture Capital group of KPMG's Philadelphia office from 2002 to 2009. He began his career in 1981 at Arthur Andersen where he was elected partner in 1993. Mr. Hughes holds a B.S. in Economics and Accounting from the Wharton School, University of Pennsylvania and an M.B.A. from the Wharton School, University of Pennsylvania. He is also a licensed CPA.

We believe that Mr. Hughes is qualified to serve as a member of our board of directors due to his extensive financial and accounting experience with both private and public companies, as well as his understanding of public company audit and governance requirements and responsibilities.

Janet B. Haugen is a nominee to our board of directors and Audit Committee, whose formal election will occur upon the consummation of this offering. She previously served as the Senior Vice President and Chief Financial Officer of Unisys Corporation from April 2000 to November 2016. She also held positions as Vice President, Controller and Acting Chief Financial Officer of Unisys between April 1996 and April 2000. Prior to joining Unisys, she held positions at Ernst & Young from 1980 to 1996, including as an audit partner from 1993 to 1996. She currently serves on the board of directors, Audit Committee Chair and a member of the Compensation Committee of Paycom Software, Inc., a provider of comprehensive, cloud-based human capital management software, a position she has held since February 2018. Since May 2019 she has served on the board of directors of Juniper Networks, Inc., which designs, develops and sells high-performance network technology products and services, and as chair of the Audit Committee since February 2020. She also served on the board of directors and chair of the audit committee of SunGard Data Systems Inc., a software and services company, from 2002 to 2005.

We believe that Ms. Haugen is qualified to serve on our board due to her extensive leadership experience as an executive, financial expertise and public company governance experience as a current and prior member of the board of directors and audit committee chair of other public technology companies.

David J. Hollister has served as our Chief Financial Officer since 2007. In addition to providing financial leadership, Mr. Hollister is responsible for various aspects of our operations, including our IT and cloud hosting operations, financial operations, business intelligence, and portfolio development activities, including mergers and acquisitions and accelerated commercial development. Prior to joining our Company, he was the chief financial officer and a member of the board of directors of Broder Bros., Co from 2004 to 2007. Mr. Hollister previously served as a director in the M&A Transaction Services practice at PricewaterhouseCoopers LLP, where he specialized in international transactions. He holds a Bachelor's degree in Business Administration from the University of Northern Colorado and an M.B.A. from the University of Michigan.

David R. Shaman joined our Company in 1998 and has served as our Chief Legal Officer since 2016. Mr. Shaman previously served as General Counsel from 2015 to 2016 and as Deputy General Counsel from 2006 to 2015. Prior to joining us, Mr. Shaman was an associate at the law firm Covington & Burling LLP. Mr. Shaman's international experience includes eight years leading the Company's legal operations outside the United States, as well as tenures at the European Commission, Directorate-General for Informatics in Brussels and Harlequin Limited, a software company in Cambridge, United Kingdom. He holds a Bachelor's degree in mathematics from the University of Pennsylvania, a J.D. from Harvard Law School, and a Diploma in Mathematical Statistics from Cambridge University.

Director Independence

Rules 5605 and 5615 of the Nasdaq Listing Rules require that independent directors compose a majority of a listed company's board of directors within one year of listing. In addition, the Nasdaq Listing Rules require that, subject to specified exceptions, each member of a listed company's audit committee be independent and also satisfy criteria set forth in Rule 10A-3 under the Exchange Act. Under Nasdaq Listing Rule 5605(a)(2), a director will only qualify as an "independent director" if, in the opinion of the board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. To be considered independent for purposes of Rule 10A-3 under the Exchange Act, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee: (1) accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries; or (2) be an affiliated person of the listed company or any of its subsidiaries.

Based upon information requested from, and provided by, each director concerning his background, employment and affiliations, including family and other relationships, including those relationships described in the section titled "Certain Relationships and Related Party Transactions," our board of directors will have independent director. Our board of directors has determined that does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that he is "independent" as that term is defined under Rule 5605(a)(2) of the Nasdaq Listing Rules. Although the Nasdaq Listing Rules require that a majority of the board of directors be independent, because we will be a "controlled company" within the meaning of the Nasdaq Listing Rules, we are permitted to, and have elected to, not comply with this requirement. In addition, although the Nasdaq Listing Rules require that each member of our audit committee be independent, under special phase-in rules applicable to newly public companies, we will have until one year from the effective date of the registration statement of which this prospectus forms a part to comply with this independence requirement.

Controlled Company

We are a "controlled company" under the corporate governance rules of the Nasdaq Listing Rules because the Bentleys control a majority of the voting power of our outstanding capital stock. Therefore, we are not required to have a majority of our board of directors be independent, nor are we required to have a compensation committee or an independent nominating function. In light of our status as a controlled company, our board of directors has determined not to have a compensation committee or an independent nominating function and to have the full board of directors be directly responsible for reviewing and approving compensation and benefit arrangements for our executive officers and directors, as well as for nominating members of our board of directors. Additionally, as described in the section titled "Description of Capital Stock—Anti-Takeover Provisions—*Certificate of Incorporation and By-law Provisions*," so long as the outstanding shares of our Class A and Class B common stock held by the Bentleys represent a majority of the combined voting power of our common stock, the Bentleys will be able to effectively control all matters submitted to our stockholders for a vote, as well as the overall management and direction of our company.

Compensation Committee Interlocks and Insider Participation

We did not have a compensation committee during the last completed fiscal year and compensation of our executive officers was determined by our board of directors during the last completed fiscal year. None of our executive officers currently serves, or in the past year has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our board of directors.

Election of Officers

Our executive officers are elected by, and serve at the discretion of, our board of directors. Messrs. Gregory S., Keith A., and Raymond B. Bentley, each of whom is a director and executive officer of our Company, and Dr. Barry J. Bentley, a director of our Company, are brothers.

Board of Directors

Composition of our Board of Directors upon the Effectiveness of the Registration Statement of which this Prospectus Forms a Part

Our amended and restated by-laws provide that the number of directors will be determined from time to time by resolution of our board of directors. Upon the effectiveness of the registration statement of which this prospectus forms a part, we will have directors.

Upon election, each director is elected for a one-year term and serves until a successor is duly elected and qualified. Any additional directorships resulting from death, resignation, increase in the number of directors or otherwise may be filled for the unexpired term by a majority vote of the remaining directors then in office. Directors may be removed with or without cause by the affirmative vote of a majority of the combined vote of our then-outstanding shares of Class A and Class B common stock, voting together as a single class.

Committees of our Board of Directors

Audit Committee

Our board of directors has established an audit committee (the "Audit Committee"), which will have the composition and responsibilities described below, as of the effectiveness of the registration statement of which this prospectus forms a part. We believe that the composition of the Audit Committee meets the applicable independence requirements of the Nasdaq Listing Rules and Exchange Act rules, which permit us to phase in our compliance with such requirements as follows: (1) one independent member on the effective date of the registration statement of which this prospectus forms a part, (2) a majority of independent members within 90 days of the effective date of the registration statement of which this prospectus forms a part and (3) all independent members within one year of the effective date of the registration statement of which this prospectus forms a part.

Following our listing, our Audit Committee will consist of , who satisfies the independence requirements of the applicable Nasdaq Listing Rules and Exchange Act rules, and . We expect that, within 90 days of the effective date of the registration statement of which this prospectus forms a part, the majority of our audit committee members will be independent (as determined under Nasdaq Listing Rules and Exchange Act rules) and that, within one year of the effective date of the registration statement of which this prospectus forms a part, all of the members of the audit committee will be independent under Nasdaq Listing Rules and Exchange Act rules. will be the chair of our Audit Committee, and is an "audit committee financial expert," as defined in Item 407(d)(5) of Regulation S-K, and possesses financial sophistication as required by the Nasdaq Listing Rules. This designation does not impose any duties, obligations or liabilities that are greater than those that are generally imposed on members of our Audit Committee and our board of directors. Members serve on this committee until their resignations or until otherwise determined by our board of directors.

The Audit Committee will be responsible for, among other things:

- selection, retention, termination, compensation, and oversight of the work of an independent public accounting firm to act as our independent auditors, as well as any other public accounting firm engaged to prepare or issue an audit report or other audit, review or attest services;
- considering and approving, in advance, all audit and permitted non-audit and tax services to be performed by our independent auditors;
- reviewing and discussing the adequacy and effectiveness of our financial reporting processes, internal control over financial reporting and disclosure controls and procedures and the audits of our financial statements;
- establishing procedures for the receipt, retention, and treatment of complaints received by us regarding accounting, internal accounting controls or auditing matters and the confidential, anonymous submission by our colleagues of concerns regarding questionable accounting or auditing matters;
- investigating any matter brought to its attention within the scope of its duties and engaging independent counsel and other advisers as the Audit Committee deems necessary;
- determining compensation of advisors hired by the Audit Committee;

- reviewing quarterly financial statements prior to their release;
- reviewing and assessing the adequacy of a formal written charter on an annual basis;
- reviewing and approving related-party transactions for potential conflict of interest situations on an ongoing basis;
- managing risks to the Company by monitoring, discussing, reviewing, or developing policies and procedures with respect to risk exposures, compliance with applicable laws and the Company's policies and complaints regarding accounting or auditing matters; and
- handling such other matters that are specifically delegated to the Audit Committee by our board of directors from time to time.

Our board of directors will adopt a written charter for our Audit Committee, which will be available on our website upon effectiveness of the registration statement of which this prospectus forms a part. Such written charter for the Audit Committee will satisfy the applicable rules of the SEC and the listing standards of Nasdaq.

Code of Conduct

We are committed to ethical business conduct and have a code of conduct applicable to the conduct of our business by all of our colleagues, officers, and directors. Upon the effectiveness of the registration statement of which this prospectus forms a part, our code of conduct will be posted on our website, *www.bentley.com*. We intend to disclose future amendments to certain provisions of this code of conduct, or waivers of such provisions, applicable to any principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, and our directors, on our website. Information contained on our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

EXECUTIVE AND DIRECTOR COMPENSATION

This section discusses the material components of the executive compensation program for our executive officers who are named in the "Summary Compensation Table" below, whom we refer to as our "named executive officers."

For the year ended December 31, 2019, or fiscal year 2019, our named executive officers and their positions were as follows:

- Gregory S. Bentley, Chairman, Chief Executive Officer and President;
- Keith A. Bentley, Chief Technology Officer and Director; and
- David J. Hollister, Chief Financial Officer and Chief Operations Advancement Officer.

This discussion may contain forward-looking statements that are based on our current plans, considerations, expectations, and determinations regarding future compensation programs. Actual compensation programs that we adopt in connection with or following the effectiveness of the registration statement of which this prospectus forms a part may differ materially from the currently planned programs summarized in this discussion.

Summary Compensation Table

The following table presents information regarding the total compensation that was awarded to, earned by, or paid to our named executive officers for services rendered during fiscal year 2019.

Name and Principal Position	Year	Salary ($)[1]	Bonus ($)	Non-equity Incentive Plan Compensation ($)[3]	All Other Compensation ($)[4]	Total ($)
Gregory S. Bentley	2019	200,000	—	12,130,273	23,842	12,354,115
Chairman, Chief Executive Officer and President						
Keith A. Bentley	2019	200,000	—	7,077,226	21,972	7,299,198
Chief Technology Officer and Director						
David J. Hollister	2019	200,000	1,000 [2]	4,045,398	46,180	4,292,578
Chief Financial Officer and Chief Operations Advancement Officer						

(1) Amounts reflect the actual base salary earned by each named executive officer in fiscal year 2019.

(2) Amount reflects a one-time discretionary bonus paid to Mr. Hollister in fiscal 2019 in recognition of his contributions to us in fiscal year 2019.

(3) Amounts reflect the sum of the amount of $12,127,313, $7,074,266, and $4,042,438 paid pursuant to the Bentley Systems, Incorporated Bonus Pool Plan to Gregory S. Bentley, Keith A. Bentley, and David J. Hollister, respectively, and an additional $2,960 paid to each of these named executive officers pursuant to our global profit sharing plan, in each case with respect to fiscal year 2019. Please see the sections titled "2019 Bonuses—Bonus Pool Plan" and "2019 Bonuses—Global Profit Sharing Plan" below for further information.

(4) Amounts reflect: (i) for Gregory S. Bentley, a $15,000 per year vehicle allowance, a reimbursement of $8,618 in connection with accompanying spousal/dependent children travel, and $224 in company matching contributions to his account under our 401(k) plan; (ii) for Keith A. Bentley, a $15,000 per year vehicle allowance, a reimbursement of $6,748 in connection with accompanying spousal/dependent children travel, and $224 in company matching contributions to his account under our 401(k) plan; and (iii) for David J. Hollister, a $15,000 per year vehicle allowance, a $12,500 health and fitness club allowance, a reimbursement of $15,456 in connection with accompanying spousal/dependent children travel, $3,000 as a matching contribution to charity, and $224 in company matching contributions under our 401(k) plan.

Narrative Disclosures to Summary Compensation Table

The primary elements of compensation for our named executive officers are base salary, cash performance bonuses, and certain deferred compensation and retirement plans. These elements (and the amounts of compensation and benefits under each element) were selected because we believe they are necessary to help us attract and retain executive talent, which is fundamental to our success. Below is a more detailed summary of the current executive compensation program as it relates to our named executive officers.

Annual Base Salary

The base salary payable to each named executive officer is intended to provide a fixed baseline component of compensation, which is supplemented by the significant variable-based component of their annual compensation, as described below.

As such, each of our named executive officers received a base salary of $200,000 in fiscal year 2019.

2019 Bonuses

Bonus Pool Plan

Our key employees, including our named executive officers, participate in the Bentley Systems, Incorporated Bonus Pool Plan, as amended and restated, effective as of September 23, 2015 (the "Bonus Plan"). Pursuant to the Bonus Plan, participants are eligible to receive cash incentive bonuses that are determined based on our Management Report Operating Income, or adjusted operating income, as determined by our internal management accounts ("MROI"). For purposes of the Bonus Plan, the bonus pool thereunder may be funded with up to an aggregate of 20% of our adjusted MROI (as adjusted for accounting anomalies and other items identified as non-GAAP charges), subject to approval by our board of directors, which payments are made to plan participants based on each such participant's allocated interest in the bonus pool.

With respect to fiscal year 2019, our named executive officers were allocated percentage interests in the Bonus Plan bonus pool as follows: a 36.4% (12/33) interest for Gregory S. Bentley, a 21.2% (7/33) interest for Keith A. Bentley, and a 12.1% (4/33) interest for David J. Hollister, and they were paid bonuses quarterly in the aggregate amounts of $12,127,313, $7,074,266, and $4,042,438, respectively under the Bonus Plan.

Global Profit Sharing Plan

Our full-time colleagues, including our named executive officers, are generally eligible to participate in our global profit sharing plan (the "Profit Sharing Plan"). Under the Profit Sharing Plan, each participant is eligible for a cash bonus based upon the company's achievement of certain performance targets, which in fiscal year 2019 included the MROI. The target level of the MROI objective is based on our annual growth objectives and is set by members of our senior management at the beginning of the fiscal year. Under the Profit Sharing Plan, each participant receives an on-target bonus amount equal to 2% of such participant's eligible compensation with respect to fiscal year 2019, with payouts ranging from 0% (if threshold achievement of 75% of the applicable performance target is not achieved) to 6% of eligible compensation (if maximum achievement of the applicable performance target is achieved). Such amounts were determined on a straight-line basis between threshold and target, and target and maximum achievement levels. Such bonus amounts are then adjusted (which may be negative or positive) using a weighted multiplier based on our achievement of non-financial company performance objectives, as established by our senior management at the beginning of the fiscal year. For fiscal year 2019, each of the named executive officers were paid a cash bonus of $2,960 in February 2020 under the Profit Sharing Plan.

Hollister Bonus

In addition to bonuses payable under the Bonus Plan and the Profit Sharing Plan, David J. Hollister was paid a one-time discretionary cash bonus of $1,000 in recognition of his contributions to us in fiscal year 2019.

Equity Compensation

The 2015 Plan (as defined in the section below titled "—Equity Incentive Plans") provides our officers, key employees, consultants, and directors the opportunity to participate in the equity appreciation of our business through the receipt of equity awards with respect to shares of our Class B common stock. No equity awards were granted to the named executive officers in fiscal year 2019. David J. Hollister, however, was previously granted an option to purchase 200,000 shares of our Class B common stock on May 27, 2015 under the 2015 Plan at an exercise price of $3.495 per share. Such option is fully vested, with 100,606 shares subject to the option that remain outstanding and exercisable as of December 31, 2019.

On July 10, 2020, our board of directors approved the grant of 994,912 total shares of restricted stock and restricted stock units under the 2015 Plan to substantially all of our full-time colleagues, including 680 shares to each named executive officer, that vest upon the earlier of December 31, 2020 or the consummation of this offering.

Other Benefits and Perquisites

We offer participation in broad-based retirement, health, and welfare plans to all of our colleagues, including our named executive officers. We provide a 401(k) plan to our employees, including our current named executive officers, as discussed in the section below titled "—Profit Sharing/401(k) Plan."

Profit Sharing/401(k) Plan

We sponsor a defined contribution plan intended to qualify for favorable tax treatment under Section 401(a) of the U.S. Internal Revenue Code of 1986, as amended (the "Code"), containing a cash or deferred feature that is intended to meet the requirements of Section 401(k) of the Code. The plan provides for employer matching or non-elective contributions on behalf of participants. Employer matching and non-elective contributions become 25% vested after one year of service and continue vesting thereafter at 25% per year until they are 100% vested following four years of service. Up to 100% of non-elective contributions may be invested in shares of our Class B common stock. For fiscal year 2019, each of our named executive officers received employer matching contributions of $224 and no elective contributions.

Nonqualified Deferred Compensation

We sponsor the Bentley Systems, Incorporated Nonqualified Deferred Compensation Plan (the "DCP"). Under the DCP, key management colleagues, including our named executive officers, may defer all or any part of their incentive compensation and the company may make discretionary awards on behalf of such participants. Additionally, non-employee directors may defer all or any part of their directors' fees under our Nonqualified Deferred Compensation Plan for Non-Employee Directors. We have historically credited participants with non-elective contributions to the DCP, but no such contributions have occurred since 2015. All deferrals are deemed invested in phantom shares of our Class B common stock and all benefits are distributed in actual shares of our Class B common stock.

For fiscal year 2019, Gregory S. Bentley and Keith A. Bentley elected to defer 10% and 20%, respectively, of their 2019 incentive compensation into the DCP. David J. Hollister did not defer any portion of his fiscal year 2019 incentive compensation. The following table shows the number of outstanding phantom shares of our Class B common stock held by each named executive officer as of December 31, 2019 under the DCP, including additional phantom shares acquired as a result of dividend equivalents credited on those phantom shares:

Name	Outstanding Phantom Shares
Gregory S. Bentley	3,240,932
Keith A. Bentley	2,917,970
David J. Hollister	3,542,184

Employee Benefits and Perquisites

All of our full-time colleagues, including our named executive officers, are eligible to participate in a standard suite of health and welfare benefit plans. In addition, we generally provide the following benefits to our senior executives, including our named executive officers:

- Reimbursement for health and fitness memberships and programs in an amount of up to $12,500 per year;
- Reimbursement of certain costs of the executive's spouse and dependent children to accompany the executive on qualifying business trips in an amount of up to $25,000 per year;
- An annual vehicle allowance of $15,000; and
- Charitable matching contributions in an amount of up to $12,500 per year.

We believe the benefits and perquisites described above are necessary and appropriate to provide a competitive compensation package to our senior executives, including our named executive officers.

No tax gross-ups

No named executive officers received any tax gross-ups in respect of compensation received by them in fiscal year 2019, nor are any named executive officers currently entitled to receive any such tax gross-ups in the future.

Outstanding Equity Awards at Fiscal Year-End

The following table summarizes the number of shares of Class B common stock that were underlying outstanding equity incentive plan awards for each named executive officer for fiscal year 2019.

		Option Awards			
Name	Grant Date	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date
Gregory S. Bentley	—	—	—	—	—
Keith A. Bentley	—	—	—	—	—
David J. Hollister	05/27/2015	100,606 (1)	—	$ 3.495	05/26/2020

(1) The shares subject to the option vested ratably on each of the first four anniversaries of the grant date, subject to David J. Hollister's continued service with us through the applicable vesting dates. As of December 31, 2019, such shares are fully vested and exercisable.

Employment Agreements

We do not have employment agreements with any of our named executive officers. However, each of our executive officers, including the named executive officers, has executed customary intellectual property assignment agreements for our benefit. Pursuant to those agreements, each of our executive officers has confirmed his or her understanding and agreement that any and all intellectual property and trade secrets (i) related to our business and (ii) contained in our products or systems that such executive has created, developed or otherwise produced or caused to be produced or delivered to us, or will so do in the future, is our property or will be assigned to us. Each executive has also agreed to take all further acts that may be necessary to transfer, perfect, and defend our ownership of such property.

Equity Incentive Plans

2015 Plan

We maintain the Bentley Systems, Incorporated 2015 Equity Incentive Plan, as amended and restated, effective as of May 29, 2018, and as further amended on July 10, 2020 (the "2015 Plan"). The 2015 Plan is intended to provide a means whereby we may attract and retain key employees, consultants, and directors and motivate them to exercise their best efforts on behalf of the company. The 2015 Plan provides for the grant of stock options, restricted stock, restricted stock units, stock appreciation rights, and dividend equivalent rights to our key employees, consultants, and non-employee directors and is administered by our board of directors. Under the 2015 Plan, 50,000,000 shares of Class B common stock are reserved for issuance. If an award granted under the 2015 Plan expires, terminates for any reason, is cancelled, or is forfeited, the shares subject to that award will be available for future grant under the 2015 Plan. In addition, if an option is exercised by surrendering shares as full or partial payment, or if tax withholding requirements are satisfied by surrendering shares to us or by withholding shares, only the number of shares issued net of shares withheld or surrendered shall be deemed delivered for purposes of determining the number of shares that remain available for grant under the 2015 Plan. The 2015 Plan provides that the per share exercise price of a nonqualified stock option granted thereunder cannot be less than the higher of 100% of the fair market value of a share of Class B common stock on the grant date, or the par value thereof. The 2015 Plan also provides that, on the day prior to the date on which any in-the-money option is scheduled to expire due to the expiration of the option term, that option will be automatically exercised using a net exercise method to cover both the exercise price and applicable tax withholding. The type and number of shares that may be issued under the 2015 Plan and the type and number of shares issuable under outstanding awards under the 2015 Plan, as well as the exercise price of outstanding options, will be adjusted to reflect any stock split, reverse stock split, stock dividend, distribution (including extraordinary cash dividends), spin-off, recapitalization, share combination or reclassification, or similar change in our capitalization.

In the event of a corporate transaction (such as a merger), the surviving or successor corporation is required to assume each outstanding award or substitute a new award for each outstanding award under the 2015 Plan unless our board of directors decides to terminate all or any portion of the outstanding awards effective upon the closing of the corporate transaction. If our board of directors decides to so terminate outstanding awards, each holder of outstanding options must receive at least seven days' notice of such termination and any option that is to be terminated will be exercisable (to the extent it is then exercisable) up to the time of termination. Upon the closing of such corporate transaction, such option, if not exercised, will be terminated, and we will pay to the holder thereof an amount equal to the difference between the fair market value of a share of Class B common stock (as of the date the option terminated) and the exercise price of the option. If the exercise price of such outstanding options equals or exceeds such fair market value, we will cancel the option without payment. Upon the occurrence of a change in control (as defined in the 2015 Plan), all outstanding unvested awards granted under the 2015 Plan will automatically vest; provided, however that unvested awards that were granted on or after July 10, 2020 will not automatically vest upon the occurence of a change in control. Our board of directors may terminate the 2015 Plan at any time. Our board of directors has determined not to make additional awards under the 2015 Plan following the effectiveness of this prospectus. However, the 2015 Plan will continue to govern outstanding equity awards granted thereunder.

2020 Plan

In connection with this offering, we intend to adopt a new equity compensation plan, the 2020 Incentive Award Plan (the "2020 Plan"), subject to approval by our stockholders, under which we may grant cash and equity incentive awards to eligible colleagues and consultants in order to attract, motivate, and retain the talent for which we compete. The material terms of the 2020 Plan have not yet been determined. The 2020 Plan will replace the 2015 Plan upon the effectiveness of this prospectus.

Director Compensation Table

The following table provides information regarding the total compensation that was earned by or paid to each of our non-employee directors for fiscal year 2019.

Name	Fees Earned or Paid in Cash ($)	Stock Awards ($)(2)	Option Awards ($)(3)	Total ($)
Kirk Griswold	15,000 (1)	53,358	16,500	84,858

(1) Amount reflects an annual cash retainer of $15,000 for Kirk Griswold's service as chair of the audit committee of our board of directors.

(2) Kirk Griswold elected to receive shares of Class B common stock in lieu of a $50,000 annual cash retainer, which he was entitled to in connection with his service on our board of directors. This amount reflects the grant-date fair value of such stock award computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by Kirk Griswold. We provide information regarding the assumptions used to calculate the value of all stock awards made to our directors in Note 13 to our consolidated financial statements included elsewhere in this prospectus.

(3) Amounts reflect the full grant-date fair value of stock options granted during fiscal year 2019 computed in accordance with ASC Topic 718, rather than the amounts paid to or realized by Kirk Griswold. We provide information regarding the assumptions used to calculate the value of all option awards made to our directors in Note 13 to our consolidated financial statements included elsewhere in this prospectus.

Kirk Griswold was our only non-employee director in fiscal year 2019. The below reflects the aggregate number of outstanding equity awards held by Kirk Griswold as of December 31, 2019:

Name	Outstanding at Fiscal Year End(1)
Kirk Griswold	60,000

(1) Kirk Griswold holds options to purchase 60,000 shares of our Class B common stock, 27,500 shares of which are vested and 32,500 shares of which are unvested.

Our employee directors for fiscal year 2019, Barry J. Bentley, Gregory S. Bentley, Keith A. Bentley, and Raymond B. Bentley, did not receive any additional compensation for their service on our board of directors and it continues to be the case in fiscal year 2020 that employee directors will not receive additional compensation for such service. See the section titled "Executive and Director Compensation" above for more information about Gregory S. Bentley and Keith A. Bentley's compensation for fiscal year 2019.

Prior to our adoption of the Bentley Systems, Incorporated Independent Director Compensation Policy described below, our non-employee directors were entitled to receive an annual cash retainer of $50,000 (paid in equal quarterly installments) for service on our board of directors, as well as an additional cash retainer of $15,000 for service on the audit committee of our board of directors. Prior to each applicable year, each such director could elect to receive shares of our Class B common stock with a fair market value of $50,000 as of the commencement of such year (paid quarterly in equal installments) in lieu of the $50,000 annual cash retainer. Each non-employee director was also entitled to receive an initial option award to purchase 25,000 shares of our Class B common stock upon his or her appointment to our board of directors and an annual option award to purchase 10,000 shares of our Class B common stock. All options granted to non-employee directors (including all options granted to Kirk Griswold described herein)

vest ratably on each of the first four anniversaries of the grant date, subject to the director's continued service with us through the applicable vesting dates.

Kirk Griswold was our only non-employee director in fiscal year 2019 and elected to receive shares of our Class B common stock in lieu of the annual cash retainer payable in fiscal year 2019. As a result, in fiscal year 2019 Kirk Griswold received a $15,000 cash retainer for his service on the audit committee as well as an aggregate of 7,016 shares of our Class B common stock in four installments occurring on each original quarterly payment date for his annual cash retainer.

Further, on May 15, 2019, Kirk Griswold received an annual option grant to purchase 10,000 shares of Class B common stock at an exercise price per share of $7.24. Additionally, Kirk Griswold previously received option grants in connection with his service on our board of directors of: an option for 20,000 shares of our Class B common stock, granted on May 11, 2016 at an exercise price per share of $5.23; an option for 20,000 shares of our Class B common stock, granted on May 10, 2017 at an exercise price per share of $5.38; and an option for 10,000 shares of our Class B common stock, granted on May 29, 2018 at an exercise price per share of $6.805.

As discussed above in "—Other Benefits and Perquisites—Nonqualified Deferred Compensation," our non-employee directors are eligible to participate in our Nonqualified Deferred Compensation Plan for Non-Employee Directors, which permits such directors to defer all or any part of their director compensation. Deferrals under our Nonqualified Deferred Compensation Plan for Non-Employee Directors will be paid out, as elected by the participating non-employee director, after the earliest to occur of (i) his or her separation from service (within the meaning of Code Section 409A), (ii) a date or dates chosen by the director, or (iii) a change in control that meets the requirements of Code Section 409A. As elected by the non-employee director, distributions will be made as a single distribution or in annual installments for a period of two to ten years. All deferrals are deemed invested in phantom shares of our Class B common stock, dividend equivalents are credited on such phantom shares and deemed reinvested as additional phantom shares, and all benefits are distributed in actual shares of our Class B common stock. 500,000 shares of our Class B common stock are authorized for issuance under our Nonqualified Deferred Compensation Plan for Non-Employee Directors. Our board of directors may terminate or amend this plan at any time, but no termination or amendment can materially impair the rights of a participant without his or her consent. Kirk Griswold did not defer any compensation under such plan during fiscal year 2019.

On March 12, 2020, we adopted the Bentley Systems, Incorporated Independent Director Compensation Policy, which was implemented for directors elected or re-elected in 2020 and superseded the director compensation policy described above. The new policy provides that all non-employee directors will be paid compensation for services provided to us as set forth below:

- $50,000 payable upon the non-employee director's first election or appointment to our board of directors;
- a fully vested award of $100,000 worth of our Class B common stock (awarded pursuant to our 2015 Equity Incentive Plan, or any successor plan then in effect), granted upon the non-employee director's first election or appointment to our board of directors;
- a fully vested award of $100,000 worth of our Class B common stock (awarded pursuant to our 2015 Equity Incentive Plan, or any successor plan then in effect), granted immediately following the non-employee director's re-election to our board of directors at our Annual Meeting of Stockholders;
- an annual retainer of $25,000 for service on our board of directors;
- an annual retainer of $25,000 for service on one or more committees of our board of directors; and
- an annual retainer of $50,000 for service as the chairperson on one or more committees of our board of directors.

All cash retainers will be paid annually in advance, with 25% of each such retainer deemed to be compensation for each calendar quarter of service during the applicable calendar year. If a director resigns from our board of directors or is removed for cause, such director will be obligated to repay to us any cash retainer amounts attributable to calendar quarters for which services will not be rendered for a full calendar quarter during the applicable year (with no pro-rata credit for service during part of a quarter). A non-employee director who serves as a member of more than one board committee will only receive one annual committee member service retainer and a non-employee director who serves as the chairperson of more than one board committee will only receive one annual committee chairperson service retainer. A non-employee director who receives an annual retainer for service as a committee chairperson will not also receive an annual retainer for service as a member of a committee.

Except for the annual retainer for service as the chairperson of a board committee, each non-employee director may elect to receive his or her annual cash retainer in the form of an award of restricted stock (awarded under our 2015 Equity Incentive Plan, or any successor plan then in effect), based on the fair market value of our Class B common stock on the applicable award date, which restricted stock award will be subject to vesting as to 25% of the award at the end of each calendar quarter during the applicable year of service.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

We have not been a party to any transactions since January 1, 2017 in which the amount involved exceeded $120,000 and in which any of our executive officers, directors or beneficial holders of more than five percent of our capital stock had or will have a direct or indirect material interest, other than the arrangements described below or under the section titled "Executive and Director Compensation."

Our Relationship with Siemens AG

Common Stock Purchase Agreement

In September 2016, we and the Bentley brothers (other than Richard P. Bentley, who is not a party to the Common Stock Purchase Agreement) entered into a Common Stock Purchase Agreement with Siemens AG ("Siemens"), as amended, pursuant to which Siemens was authorized, and agreed, to acquire (prior to our IPO) up to $100 million of our Class B common stock from our existing stockholders. Subsequent amendments increased this amount to $250 million (the "Maximum Purchase Amount"). The Maximum Purchase Amount, upon the earlier of September 2021 or the Maximum Purchase Amount being reached, increases by $20 million on each subsequent anniversary of the date of the Common Stock Purchase Agreement so long as the Strategic Collaboration Agreement (as defined below) remains in effect on each subsequent anniversary, with the next increase to the Maximum Purchase Amount set to occur on September 23, 2020. For the years ended December 31, 2017, 2018, and 2019, Siemens paid $58.1 million, $39.0 million, and $5.7 million, respectively, for an aggregate of 16.4 million shares of our Class B common stock. As of December 31, 2019, Siemens beneficially owned, through one or more of its affiliates, 30,995,246 shares of our Class B common stock. On June 18, 2020, Siemens purchased an additional 3,769,346 Class B common shares for $15.48 per share to reach the Maximum Purchase Amount of $250 million. As of June 30, 2020, Siemens beneficially owned, through one or more of its affiliates, 34,764,592 shares of our Class B common stock.

In addition to the opportunity to acquire shares of our Class B common stock, the Common Stock Purchase Agreement also granted to Siemens: (i) certain information rights prior to the effectiveness of the registration statement of which this prospectus forms a part, including the right to receive our financial statements and information regarding our capital structure; and (ii) certain protective rights prior to the effectiveness of the registration statement of which this prospectus forms a part, including provisions that (A) limit our ability to amend, alter or repeal any provision of our certificate of incorporation and by-laws in a manner that disproportionately affects the powers, preferences or rights of our Class B common stock (other than, for the avoidance of doubt, any amendments, restatements or other modifications that by their terms are only effective upon the effectiveness of a registration statement in connection with an underwritten public offering of our common stock), and (B) limit the extent to which we could engage in repurchases of our common stock prior to Siemens' cumulatively reaching the Maximum Purchase Amount. In addition, the Common Stock Purchase Agreement provides that upon the effectiveness of the registration statement of which this prospectus forms a part, (i) our Class B common stock will have voting rights and will be the class of securities offered to the public in such offering and (ii) our certificate of incorporation and any other related documentation shall be amended to reflect the voting rights, including voting ratios and sunset provisions agreed to in the Common Stock Purchase Agreement, and the Company shall not deviate from such voting structure in any manner adverse to Siemens in any material respect without Siemens' prior written consent.

Subject to certain exceptions, we, along with the Bentley family members party to the Common Stock Purchase Agreement, also granted to Siemens a right of first refusal (and, as applicable, tag-along rights) on any fundamental sale transaction undertaken by the Company, as well as any new issuance of stock, and, subject to certain exceptions, sales of stock by the Bentley family members party thereto.

In connection with the effectiveness of the registration statement of which this prospectus forms a part, Siemens' right of first refusal terminates (see "Prospectus Summary—Recent Developments—Relationship with Siemens"), but certain rights and restrictions set forth in the Common Stock Purchase Agreement continue to apply, including the following:

Right of Participation. Following the effectiveness of the registration statement of which this prospectus forms a part, we and the Bentley family members party to the Common Stock Purchase Agreement have agreed, as applicable, to notify Siemens of our intent to undertake any fundamental sale transaction, non-public offering of stock by us or sale by any Bentley family member party thereto of more than 1% of our fully-diluted capital stock, including any such transaction that may come about as a result of a non-public offer from a third party. Upon receipt of such notice, Siemens has twenty days to submit to the Company or the relevant Bentley family member, as applicable, a binding offer to engage in such transaction and to propose material transaction terms. Siemens may from time to time improve its proposed terms subject to our or the relevant seller's right to request "best and final" offers from Siemens and any other relevant third party. Neither we nor any member of the Bentley family party to the Common Stock Purchase Agreement is obligated to accept any offer submitted by Siemens, subject only to our agreement not to consummate any subject transaction with a third party on terms less favorable in the aggregate than those proposed by Siemens during the period beginning on the date Siemens proposes such offer and expiring twelve months thereafter or upon the expiration, withdrawal or revocation of Siemens' offer, whichever comes first.

Rights in a Public Offering. If this offering is consummated after September 23, 2020, we are required to sell, and Siemens is required to purchase, at the initial public offering price, shares, which represents the number of additional shares necessary so that upon the consummation of this offering, Siemens shall have acquired (including pursuant to private sale transactions under the Common Stock Purchase Agreement prior to the effectiveness of the registration statement of which this prospectus forms a part) an aggregate of $270 million worth of our Class B common stock. We currently anticipate consummating this offering prior to September 23, 2020.

If, following this offering, the Company issues shares of capital stock in a public offering, Siemens has the right to purchase, for the price per share used in such public offering, additional shares as are necessary so that Siemens' percentage ownership on a fully diluted basis at the time of such public offering, is unchanged as a result of such public offering.

Lock-up. Siemens has agreed in the Common Stock Purchase Agreement that, upon the effectiveness of the registration statement of which this prospectus forms a part, it will not sell, make any short sale of, loan or otherwise dispose of any shares of Class B common stock (other than any shares sold to the underwriters) for a period of 180 days from the date of effectiveness. The Common Stock Purchase Agreement also requires Siemens to execute and deliver to the underwriters a lock-up agreement reflecting the foregoing terms.

Standstill Agreement. Siemens has agreed that following the effectiveness of the registration statement of which this prospectus forms a part, it will not directly or indirectly acquire shares of our Class B common stock such that following such acquisition Siemens and its affiliates, and the Company's affiliates (each as determined under Rule 144) would beneficially own 80% or more of our issued and outstanding shares of capital stock.

Disclaimer of Corporate Opportunity. We have waived to the fullest extent permitted by applicable law any claim against Siemens based upon the corporate opportunity doctrine or otherwise that could limit Siemens' ability to pursue other opportunities, including acquisitions or investments, that may compete with or be complimentary to our business, and Siemens is under no obligation to offer any such opportunities to us.

Registration Rights Agreement

In connection with the Common Stock Purchase Agreement, we and an affiliate of Siemens entered into a registration rights agreement. Beginning eighteen months following the effectiveness of the registration statement of which this prospectus forms a part, Siemens may request one consummated registration by the Company of its shares on Form S-1 and unlimited registrations on Form S-3 (to the extent available, and no more than two per year). In addition, subject to certain exceptions, if we propose to register any of our securities under the Securities Act in connection with the public offering of such securities, upon the request of Siemens, we will register all of the capital stock that Siemens has requested to be included in such registration, subject to any proportionate cut back at the request of any underwriter used in connection with such registration. In connection with any of these the registrations, we will indemnify Siemens and we will bear all fees, costs, and expenses (except underwriting commissions and discounts).

Strategic Collaboration Agreement

In conjunction with the Common Stock Purchase Agreement, we entered into a strategic collaboration agreement with Siemens. This agreement governs our collaboration with Siemens and certain of its divisions on the development,

marketing, and distribution of agreed upon software and software development projects. The initial term of the agreement lasts until December 31, 2026 and automatically renews for successive one year terms unless either party elects to terminate the agreement by providing notice of termination at least one year prior to the expiration of the then current term. In addition, Siemens has the right to terminate the agreement and any related collaboration projects if the Bentleys no longer own a majority of our voting power or if we otherwise undergo a change of control.

Licensing Transactions

Siemens, through its various affiliates, has historically been and continues to be a user of our software, including pursuant to one or more SELECT Agreements.

We are also party to several royalty-bearing license agreements with certain Siemens affiliates pursuant to which each party has licensed technology from the other for use in its own software products. Certain of these arrangements generally pre-date Siemens' acquisition of our Class B common stock. In addition, under the framework of the strategic collaboration agreement referenced above, we are party to several agreements with Siemens affiliates pursuant to which each party has the right to offer licenses and subscriptions to certain technology of the other party both independent of, and in connection with, interoperable solutions developed under the strategic collaboration agreement. For the years ended December 31, 2017, 2018, and 2019, Siemens paid us $2.0 million, $2.4 million, and $2.6 million, respectively, pursuant to the foregoing arrangements. For the years ended December 31, 2017, 2018, and 2019, we paid Siemens approximately $903,000, $968,000, and $1.0 million, respectively, pursuant to the foregoing arrangements.

Stockholders Agreement

On March 28, 2013, we entered into the Second Amended and Restated Stockholders Agreement with the Bentleys and certain of their permitted transferees (as amended, the "Stockholders Agreement"). The Stockholders Agreement contains, among other things, certain restrictions on the ability of the Bentleys and their permitted transferees to freely transfer shares of our stock. It also provides that the Bentleys have the right to nominate a single slate of nominees for election in each election of our board of directors, and each of the Bentleys agrees to vote all of their shares to elect such slate of nominees to our board. The Stockholders Agreement also provides for customary tag-along rights, rights of first refusal, and rights to purchase.

Upon the completion of this offering, the Stockholders Agreement will be replaced by an amended and restated Stockholders Agreement governing voting and transfer of shares and providing certain purchase rights by the Bentleys (excluding Richard P. Bentley) among themselves, to which we will not be a party.

Indemnification of our Directors and Officers

Upon the completion of this offering, our amended and restated by-laws will require us to indemnify our directors and the officers designated by our board of directors to the fullest extent permitted by Delaware law. Subject to certain limitations, our amended and restated by-laws also require us to advance expenses incurred by our directors and such officers.

Procedures for Approval of Related-Party Transactions

In connection with the offering of our Class B common stock, we have adopted a written policy relating to the approval of related-party transactions. We will review relationships and transactions in which we and our directors, executive officers or certain stockholders or their immediate family members are participants to determine whether such persons have a direct or indirect material interest. Our legal, accounting, and finance staff will be primarily responsible for the development and implementation of processes and controls to obtain information from our directors and executive officers with respect to related-party transactions and for determining, based on the facts and circumstances, whether we or a related person have a direct or indirect material interest in the transaction.

In addition, our Audit Committee will review and approve or ratify any related-party transaction reaching a certain threshold of significance. In approving or rejecting any such transaction, we expect that our Audit Committee will consider the relevant facts and circumstances available and deemed relevant to the Audit Committee.

Any member of the Audit Committee who is a related person with respect to a transaction under review will not be permitted to participate in the deliberations or vote on approval or ratification of the transaction.

PRINCIPAL AND SELLING STOCKHOLDERS

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of , 2020, after giving effect to the Charter Amendments and as adjusted to reflect the sale of shares of our Class B common stock offered by this prospectus (but assuming no exercise of the underwriters' option to purchase additional shares), by:

- each of our executive officers;
- each of our directors and director nominee;
- certain selling stockholders;
- other selling stockholders or groups of each holding less than 1%;
- all of our directors and executive officers as a group; and
- each person known by us to be the beneficial owner of more than five percent of any class of our voting securities.

We have determined beneficial ownership in accordance with the rules of the SEC, and thus it represents sole or shared voting or investment power with respect to our securities. Unless otherwise indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares that they beneficially owned as set forth opposite such person's name, subject to community property laws where applicable. We have deemed shares of our common stock to be outstanding and beneficially owned by a person for the purpose of computing their percentage ownership if that person has the right to acquire voting or investment power in respect of such common stock within 60 days of , 2020. Unless otherwise indicated, our calculation of the percentage of beneficial ownership is based on 11,601,757 shares of Class A common stock and 247,607,598 shares of Class B common stock outstanding as of June 30, 2020, as adjusted to reflect the issuance of 994,912 total shares of restricted Class B common stock and restricted stock units issued in July 2020 that will vest automatically upon the consummation of this offering, reduced by 32,238 of such restricted stock units that will be settled in cash, and shares of Class B common stock to be sold in this offering following the exercise of stock options for such shares.

Except as otherwise indicated, the address of each of the persons in this table is c/o Bentley Systems, Incorporated, 685 Stockton Drive, Exton, PA 19341.

	Common stock beneficially owned before the offering				% of total voting power before the offering[1]	Number of shares offered	Common stock beneficially owned after the offering				% of total voting power after the offering[1] [2]
	Class A		Class B				Class A		Class B		
Name of Beneficial Owner	Number	%	Number	%			Number	%	Number	%	
Executive Officers, Directors and Director Nominee:											
Keith A. Bentley[2]											
Barry J. Bentley[3]											
Gregory S. Bentley[4]											
Raymond B. Bentley[5]											
Kirk B. Griswold[6]											
Brian F. Hughes											
Janet B. Haugen											
David J. Hollister[7]											
All executive officers, directors and director nominee as a group (9 persons)[8]											
5% Stockholders:											
Richard P. Bentley											
Siemens Corporation[9]											
Selling Stockholders or Groups of Selling Stockholders:											
Other selling stockholders or groups of selling stockholders each holding less than 1% (stockholders)[10]											

* Represents beneficial ownership of less than 1% of class.

(1) Percentage of total voting power represents voting power with respect to all shares of our Class A and Class B common stock, as a single class, and assumes the effectiveness of our Charter Amendments. Upon the completion of this offering, the holders of our Class A common stock are entitled to 29 votes per share, and holders of our Class B common stock will be entitled to one vote per share. For more information about the voting rights of our Class A and Class B common stock, see the section titled “Description of Capital Stock.” We have deemed shares of our common stock to be outstanding and beneficially owned by a person for the purpose of computing the percentage ownership of that person if that person has the right to acquire voting or investment power in respect of such common stock within 60 days of , 2020.

(2) Includes (i) shares of Class B common stock held by various trusts, of which Keith A. Bentley’s spouse or step-daughter is a trustee, (ii) shares of Class B common stock distributable under our DCP within 60 days of , 2020 assuming Keith A. Bentley’s termination of employment on such date, (iii) shares of restricted Class B common stock that will vest upon the consummation of this offering and (iv) shares of Class B common stock held in our 401(k) plan.

(3) Includes (i) shares of Class B common stock held by various trusts, of which Barry J. Bentley or his spouse is a trustee, (ii) shares of Class B common stock that are issuable to Barry J. Bentley pursuant to

our DCP in connection with his termination of employment on December 31, 2019 and (iii) shares of Class B common stock held in our 401(k) plan.

(4) Includes (i) shares of Class B common stock pledged as security for a credit facility from and shares of Class B common stock pledged as security for a credit facility from , (ii) shares of Class B common stock held by various trusts, of which Gregory S. Bentley or his spouse is a trustee or co-trustee, (iii) shares of Class B common stock distributable under our DCP within 60 days of , 2020 assuming Gregory S. Bentley's termination of employment on such date, (iv) shares of restricted Class B common stock that will vest upon the consummation of this offering and (v) shares of Class B common stock held in our 401(k) plan.

(5) Includes (i) shares of Class B common stock held by a trust of which Raymond B. Bentley's spouse is a trustee, (ii) shares of restricted Class B common stock that will vest upon the consummation of this offering and (iii) shares of Class B common stock held in our 401(k) plan.

(6) Includes shares of Class B common stock issuable pursuant to options that are exercisable within 60 days of , 2020.

(7) Includes (i) shares of Class B common stock distributable under our DCP within 60 days of , 2020 assuming David J. Hollister's termination of employment on such date, (ii) shares of restricted Class B common stock that will vest upon the consummation of this offering and (iii) shares of Class B common stock held in our 401(k) plan.

(8) Includes (i) an aggregate total of shares of Class B common stock pledged as security for credit facilities from and , (ii) shares of Class B common stock issuable pursuant to options that are exercisable within 60 days of , 2020, (iii) shares of Class B common stock distributable under our DCP within 60 days of , 2020 assuming such persons' termination of employment on such date, (iv) restricted shares of Class B common stock which will vest upon the consummation of this offering and (v) shares of Class B common stock held in our 401(k) plan.

(9) All such shares of Class B common stock are held of record by Siemens Corporation, the address of which is c/o Siemens AG, Werner von Siemens Str. 50 91052 Erlangen, Germany.

(10) The amounts do not include additional equity awards for Class B common stock that are not exercisable, or for which any service condition would not be satisfied, within 60 days of , 2020.

DESCRIPTION OF CAPITAL STOCK

General

The following is a summary of certain of the rights of our capital stock and related provisions of our amended and restated certificate of incorporation and amended and restated by-laws that will be in effect shortly following the effectiveness of the registration statement of which this prospectus forms a part. For more detailed information, we refer you to the forms of our amended and restated certificate of incorporation and amended and restated by-laws that are filed as exhibits to the registration statement of which this prospectus is a part and to applicable provisions of Delaware law. Note 11 to our audited consolidated financial statements included elsewhere in this prospectus includes a description of the terms of our Class B common stock pursuant to our amended and restated certificate of incorporation then in effect for the periods reported and does not reflect the Charter Amendments.

Upon the completion of this offering, under our amended and restated certificate of incorporation, we will provide for two classes of common stock: Class A common stock, which will have 29 votes per share, and Class B common stock, which will have one vote per share. The beneficial owners of our Class A common stock are primarily the Bentleys, all of whom serve as our directors and/or executive officers. Any holder of Class A common stock may convert all or a portion of such holder's shares at any time into shares of Class B common stock on a share-for-share basis. In addition, Class A common stock will convert automatically into Class B common stock upon the occurrence of specified events, including transfers, except for certain permitted transfers described below. Except as specified below, the holders of Class A and Class B common stock will vote together as a single class. Except as expressly provided in our amended and restated certificate of incorporation, including with respect to voting rights and conversion rights, the rights of the two classes of common stock are identical. In addition, our amended and restated certificate of incorporation authorizes shares of undesignated preferred stock, the rights, preferences and privileges of which may be designated from time to time by our board of directors.

Upon the completion of this offering, our authorized capital stock will consist of shares, each with a par value of $0.01 per share, of which:

- shares are designated as Class A common stock;
- shares are designated as Class B common stock; and
- shares are undesignated preferred stock.

As of June 30, 2020, we had outstanding 11,601,757 shares of Class A common stock held of record by 17 stockholders, 247,607,598 shares of Class B common stock held of record by 807 stockholders, and no shares of preferred stock, 15,999,363 shares of Class B common stock issuable upon exercise of stock options outstanding as of June 30, 2020 at a weighted average exercise price of $6.34 per share of Class B common stock, 45,151 shares of Class B common stock issuable upon the settlement of restricted stock units outstanding as of June 30, 2020, and 27,941,520 shares of Class B common stock held by colleagues and directors as phantom shares under our DCPs as of June 30, 2020. In addition, in July 2020 we granted 994,912 total shares of restricted Class B common stock and restricted stock units that will vest automatically upon the consummation of this offering, with 32,238 of such restricted stock units that will be settled in cash, and shares of unvested restricted Class B common stock and restricted stock units that will not vest upon consummation of this offering.

Common Stock

Dividend Rights

Subject to preferences that may apply to shares of preferred stock outstanding at the time, the holders of outstanding shares of our common stock are entitled to receive dividends out of funds legally available if our board of directors, in its discretion, determines to issue dividends and only then at the times and in the amounts that our board of directors may determine. See the section titled "Dividend Policy" for more information.

Voting Rights

Upon the completion of this offering, the holders of our Class A common stock will be entitled to 29 votes per share, provided, however, that at any such time, and thereafter, as none of the Bentleys is an executive officer or director of the Company, the holders of our Class A common stock will be entitled to 11 votes per share. Shortly following the effectiveness of the registration statement of which this prospectus forms a part, holders of our Class B common stock, which is the class of common stock that the selling stockholders are selling pursuant to this prospectus and is the only class that will be publicly traded and listed, will be entitled to one vote per share. The holders of our Class A common stock and Class B common stock vote together as a single class, unless otherwise required by our amended and restated certificate of incorporation or law. Delaware law could require either holders of our Class A common stock or our Class B common stock to vote separately as a single class in the following circumstances:

- If we were to seek to amend our amended and restated certificate of incorporation to increase or decrease the par value of a class of stock, then that class would be required to vote separately to approve the proposed amendment; and
- If we were to seek to amend our amended and restated certificate of incorporation in a manner that alters or changes the powers, preferences or special rights of a class of stock in a manner that affected its holders adversely, then that class would be required to vote separately to approve the proposed amendment.

In addition, the affirmative vote of the holders of the Class A common stock is required to amend the provisions of our amended and restated certificate of incorporation that relate to our dual class structure.

Under our amended and restated certificate of incorporation, we are not able to engage in certain mergers or other transactions in which the holders of Class A common stock and Class B common stock are not given the same consideration, without the affirmative vote of the holders of a majority of the outstanding shares of Class A common stock, voting separately as a class, and Class B common stock, voting separately as a class. No such separate class vote will be required, however, if the holders of each class of common stock receive equity securities in the surviving entity with voting and related rights substantially similar to the rights of the class of common stock held by such holders prior to the merger or other transaction.

Except as otherwise required by Delaware law, all stockholder action, other than the election of directors, is decided by the vote of the holders of a majority in voting power of the shares of our capital stock issued and outstanding at a meeting in which a quorum, consisting of a majority in voting power of the shares of capital stock of the Company issued and outstanding and entitled to vote at the meeting, is present. The election of directors is determined by a plurality of the votes cast in respect of the shares present at the meeting and entitled to vote on the election of directors. Stockholders do not have the ability to cumulate votes for the election of directors. Our amended and restated by-laws provide that the number of directors will be determined from time to time by resolution of our board of directors.

No Preemptive or Similar Rights

Holders of our common stock are not entitled to preemptive rights and are not subject to redemption or sinking fund provisions.

Right to Receive Liquidation Distributions

Upon our dissolution, liquidation or winding-up, the assets legally available for distribution to our stockholders are distributable ratably among the holders of our common stock, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights of and the payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Conversion

Our Class B common stock is not convertible into any other shares of capital stock. Each outstanding share of Class A common stock is convertible at any time at the option of the holder into one share of Class B common stock. In addition, each share of Class A common stock will convert automatically into one share of Class B common stock upon the occurrence of specified events, including any transfer, whether or not for value, except for certain transfers described in our amended and restated certificate of incorporation, including transfers to family members, trusts primarily for the benefit of the stockholder or the stockholder's family members, certain entities or fiduciaries controlled by the stockholder or the stockholder's family members, and transfers by operation of law pursuant to a qualified domestic order or in connection with a divorce settlement. Each share of Class A common stock will also convert automatically into one share of Class B common stock upon the death of a Class A common stockholder, except if such shares are transferred in accordance with the foregoing sentence. Further, each share of Class A common stock will convert into one share of Class B common stock if such conversion is approved by the holders of at least 90% of the then-outstanding shares of Class A common stock or if the Bentleys and their permitted transferees cease to beneficially own, in the aggregate, at least 20% of the issued and outstanding shares of Class B common stock (on a fully diluted basis and assuming the conversion of all issued and outstanding shares of Class A common stock). Once converted into Class B common stock, a share of Class A common stock may not be reissued.

Options

As of June 30, 2020, there were outstanding options to purchase 15,999,363 shares of our Class B common stock.

Restricted Stock Units

As of June 30, 2020, there were outstanding restricted stock units representing 45,151 shares of our Class B common stock.

Restricted Stock

As of June 30, 2020, there were outstanding 125,488 shares of restricted Class B common stock.

On July 10, 2020 and July 21, 2020, the Company granted a total of 179,188 and 6,136 shares of restricted stock and restricted stock units, respectively, under the Company's 2015 Plan, at a grant date fair value of $15.48 per share, all of which were subject to performance-based vesting as determined by the achievement of certain business growth targets which include growth in annual recurring revenues as well as actual bookings for perpetual licenses and non-recurring services. Annual performance targets are seasonalized and targets are set for quarterly and annual performance periods ending on December 31, 2020. These performance-based restricted shares carry dividend, but not voting rights.

On July 10, 2020, the Company granted a total of 189,188 shares of restricted stock and restricted stock units under the 2015 Plan at a grant date fair value of $15.48 per share, of which 179,188 vest ratably on each of the first four anniversaries of the grant date and 10,000 vest ratably on July 13, 2021 and the three subsequent anniversaries of that date. These restricted shares and units do not have voting rights and any dividends declared accrue on such shares and are paid only upon vesting.

On July 10, 2020, our board of directors approved the grant of 994,912 total shares of restricted stock and restricted stock units under the 2015 Plan to substantially all of our full-time colleagues, including 680 shares to each named executive officer, that vest upon the earlier of December 31, 2020 or the consummation of this offering.

On July 21, 2020, the Company granted a total of 1,020,472 shares of restricted stock and restricted stock units under the 2015 Plan at a grant date fair value of $15.48 per share, which vest ratably on each of the first four anniversaries of the grant date. These restricted shares and units do not have voting rights and any dividends declared accrue on such shares and are paid only upon vesting.

DCP Phantom Shares

As of June 30, 2020, there were outstanding 27,941,520 phantom shares of our Class B common stock pursuant to our DCPs. See the section titled "Executive and Director Compensation—Other Benefits and Perquisites—Nonqualified Deferred Compensation."

Registration Rights

See the section titled "Certain Relationships and Related Party Transactions—Registration Rights Agreement" for more information about registration rights of existing stockholders.

Anti-Takeover Provisions

The provisions of our amended and restated certificate of incorporation and amended and restated by-laws and of the DGCL summarized below may have an anti-takeover effect and may delay, deter, or prevent a tender offer or takeover attempt that you might consider in your best interest, including an attempt that might result in your receipt of a premium over the market price for your shares of Class B common stock. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

Section 203 of the Delaware General Corporation Law

We intend to opt out of Section 203 of the DGCL. However, our amended and restated certificate of incorporation will contain provisions that are similar to Section 203. Specifically, our amended and restated certificate of incorporation will provide that, subject to certain exceptions, we will not be able to engage in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in prescribed manner. A "business combination" includes, among other things, a merger or consolidation involving us and the "interested stockholder" and the sale of more than 10% of our assets. In general, an "interested stockholder" is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person. However, in our case, the Bentleys and any of their respective affiliates and any of their respective direct or indirect transferees receiving % or more of our outstanding voting stock will not be deemed to be interested stockholders regardless of the percentage of our outstanding voting stock owned by them, and accordingly will not be subject to such restrictions.

Certificate of Incorporation and By-law Provisions

Our amended and restated certificate of incorporation and our amended and restated by-laws will include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of our board of directors or management team, including the following:

- *Stockholder Action by Written Consent.* Pursuant to Section 228 of the DGCL, any action required to be taken at any annual or special meeting of the stockholders may be taken without a meeting, without prior notice and without a vote if a consent or consents in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares of our stock entitled to vote thereon were present and voted, unless our amended and restated certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation prohibits stockholder action by written consent (and, thus, requires that all stockholder actions be taken at a meeting of our stockholders), if the Bentleys cease to own a majority of the voting power of our outstanding capital stock.
- *Special Meetings of Stockholders.* Our amended and restated certificate of incorporation and amended and restated by-laws further provide that special meetings of our stockholders may be called only by a majority of our total number of directors, the chair of our board of directors, our chief executive officer, or our president (in the absence of a chief executive officer). This provision could have the effect of preventing or delaying significant corporate actions that would otherwise be taken by the holders of at least a majority of the combined voting power of our Class A and Class B common stock.
- *Advance Notice Requirements for Stockholder Proposals and Director Nominations.* Our amended and restated by-laws provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at any meeting of stockholders. Our amended and restated by-laws also specify certain requirements regarding the form and content of a stockholder's notice. These provisions may preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our meetings of stockholders if proper procedures are not followed. We expect that these provisions may

also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

- *Authorized but Unissued Shares.* The authorized but unissued shares of our Class A and Class B common stock will be available for future issuance without stockholder approval, subject to any limitations imposed by the listing standards of The Nasdaq Global Select Market. These additional shares may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares of Class A and Class B common stock enables our board of directors to make more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise.
- *"Blank Check" Preferred Stock.* Our amended and restated certificate of incorporation allows our board of directors to, without prior stockholder approval, issue shares of authorized, undesignated preferred stock with dividend, liquidation, conversion, voting or other rights that could adversely affect the relative voting power or other rights of our common stock. The existence of such authorized but unissued shares of preferred stock may enable our board of directors to discourage an attempt to acquire control of our company, whether by means of a merger, tender offer, proxy contest or otherwise.
- *No Cumulative Voting.* The DGCL provides that stockholders are not entitled to cumulate votes in the election of directors unless a corporation's certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation will not provide for cumulative voting.
- *Amendment of Certificate of Incorporation or By-laws.* The DGCL provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or by-laws, unless a corporation's certificate of incorporation, or by-laws, as the case may be, requires a greater percentage. Our by-laws may be amended or repealed by a majority vote of our board of directors or pursuant to the affirmative vote of the holders of at least $66^{2}/_{3}\%$ of the voting power of the capital stock of the corporation. In addition, the affirmative vote of the holders of at least $66^{2}/_{3}\%$ of the voting power of the capital stock of the corporation will be required to amend or repeal or to adopt any provisions inconsistent with any of the provisions of our certificate described above.

Stockholder Litigation Matters

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty owed to us; any action asserting a claim arising pursuant to the DGCL, our amended and restated certificate of incorporation or our amended and restated by-laws; any action to interpret, apply, enforce or determine the validity of any provision of our amended and restated certificate of incorporation or our amended and restated by-laws; or any action asserting a claim that is governed by the internal affairs doctrine. The federal district court for the District of Delaware will be the exclusive forum for any claims brought under the Securities Act or the Exchange Act, as the Company is incorporated in the State of Delaware. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable.

Limitations on Liability and Indemnification

See the section titled "Executive and Director Compensation—Limitations on Liability and Indemnification Matters."

Listing

We have applied to have our Class B common stock approved for listing on The Nasdaq Global Select Market under the symbol "BSY." Our Class A common stock will not be listed on any stock market or exchange.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent's address is 150 Royall Street, Canton, MA 02021.

SHARES ELIGIBLE FOR FUTURE SALE

Before this offering, there has been no public market for our common stock, and a liquid trading market for our common stock may not develop or be sustained after this offering. We cannot predict the effect, if any, that market sales of shares of our common stock or the availability of shares of our common stock for sale will have on the market price of our common stock prevailing from time to time. Future sales of substantial amounts of our Class B common stock in the public market, or the perception that such sales could occur, could adversely affect market prices prevailing from time to time, may make it more difficult for you to sell your Class B common stock at a time and price that you deem appropriate and could impair our ability to raise capital through the sale of our equity securities. Furthermore, because only a limited number of shares will be available for sale shortly after this offering due to existing contractual and legal restrictions on resale as described below, there may be sales of substantial amounts of our Class B common stock in the public market after the restrictions lapse. This circumstance may adversely affect the prevailing market price and our ability to raise equity capital in the future. Although we have applied to list our Class B common stock on The Nasdaq Global Select Market under the symbol "BSY," we cannot assure you that there will be an active public market for our Class B common stock.

Based on the number of shares outstanding as of June 30, 2020 and after giving effect to (A) 994,912 total shares of restricted Class B common stock and restricted stock units issued in July 2020 that will vest automatically upon the consummation of this offering, reduced by 32,238 of such restricted stock units that will be settled in cash, and (B) shares of Class B common stock to be sold in this offering following the exercise of stock options for such shares, upon the closing of this offering, shares of our Class A common stock and shares of our Class B common stock will be outstanding. Of the shares to be outstanding immediately after the closing of this offering, the shares of our Class B common stock to be sold in this offering will be freely tradable without restriction under the Securities Act unless purchased by our "affiliates," as that term is defined in Rule 144 under the Securities Act.

The remaining shares of our Class B common stock (and the shares of our Class A common stock into which they may be converted) and all of the shares of our Class A common stock will be "restricted securities" under Rule 144.

Subject to the lock-up agreements described below and the provisions of Rules 144 and 701 under the Securities Act, these restricted securities will be available for sale in the public market as follows:

Date Available for Sale	Shares Eligible for Sale	Description
Date of Prospectus		Shares sold in the offering
Date of Prospectus		Shares salable under Rule 144 that are not subject to a lock-up
90 Days after Date of Prospectus		Shares salable under Rules 144 and 701 that are not subject to a lock-up
180 Days after Date of Prospectus		Lock-up released; shares salable under Rules 144 and 701

In addition, of the 15,999,363 shares of Class B common stock that were issuable upon exercise of stock options outstanding as of June 30, 2020, options to purchase 8,412,928 shares of our Class B common stock were exercisable as of that date, and upon exercise these shares will be eligible for sale, subject to the lock-up agreements described below and Rules 144 and 701 under the Securities Act.

Lock-Up Restrictions

In connection with this offering, our directors, executive officers, and holders of substantially all of our common stock and securities convertible into or exchangeable for our common stock (including the selling stockholders, but excluding the shares sold by them in this offering) have entered into lock up agreements with Goldman Sachs & Co. LLC ("Goldman Sachs") under which they may not, subject to specific exceptions, sell any of our common stock for 180 days after the date of this prospectus without the prior written consent of Goldman Sachs. Goldman Sachs may, at its discretion, remove or reduce the lock-up restrictions applicable to any number of shares of our common stock on terms and conditions and in ratios and numbers that it may fix in its sole discretion. Siemens is subject to a contractual lock-up pursuant to the Common Stock Agreement with us, as described in the section titled "Certain Relationships and Related Party Transactions—Our Relationship with Siemens—Common Stock Purchase Agreement." See the section titled "Underwriting."

After this offering, our colleagues, including our executive officers and our directors, may enter into written trading plans that are intended to comply with Rule 10b5-1 under the Exchange Act. Sales under these trading plans would not be permitted until the expiration of the lock-up provisions described above.

Rule 144

In general, under Rule 144 as currently in effect, once we have been subject to public company reporting requirements for at least 90 days, a person who is not deemed to have been one of our affiliates for purposes of the Securities Act at any time during the 90 days preceding a sale and who has beneficially owned the shares proposed to be sold for at least six months, including the holding period of any prior owner other than our affiliates, is entitled to sell those shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then that person is entitled to sell those shares without complying with any of the requirements of Rule 144.

In general, under Rule 144, as currently in effect, our affiliates or persons selling shares on behalf of our affiliates are entitled to sell, within any three-month period beginning 90 days after the date of this prospectus, a number of shares that does not exceed the greater of:

- 1% of the number of shares of Class B common stock then outstanding, which will equal approximately shares immediately after our initial public offering based on shares outstanding as of June 30, 2020; or
- the average weekly trading volume of our Class B common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Rule 144 does not supersede the terms of the lock-up agreements described above, which may restrict sales of shares of our Class B common stock for 180 days from the date of this prospectus. Sales under Rule 144 by our affiliates or persons selling shares on behalf of our affiliates are also subject to certain manner of sale provisions and notice requirements and to the availability of current public information about us.

Rule 701

Under Rule 701, common stock acquired upon the exercise of certain currently outstanding options or pursuant to other rights granted under our stock plans may be resold, to the extent not subject to lock-up agreements, (a) by persons other than affiliates, beginning 90 days after the effective date of this offering, and (b) by affiliates, subject to the manner-of-sale, volume limitations, current public information and filing requirements of Rule 144, in each case, without compliance with the holding period requirement of Rule 144.

Registration Rights

In connection with the Common Stock Purchase Agreement, we and an affiliate of Siemens entered into a registration rights agreement. Beginning eighteen months following the effectiveness of the registration statement of which this prospectus forms a part, Siemens may request one consummated registration by the Company of its shares on Form S-1 and unlimited registrations on Form S-3 (to the extent available, and no more than two per year). In addition, subject to certain exceptions, if we propose to register any of our securities under the Securities Act in connection with the public offering of such securities, upon the request of Siemens, we will register all of the capital stock that Siemens has requested to be included in such registration, subject to any proportionate cut back at the request of any underwriter used in connection with such registration. In connection with any of these the registrations, we will indemnify Siemens and we will bear all fees, costs and expenses (except underwriting commissions and discounts).

Form S-8 Registration Statement

We intend to file a registration statement on Form S-8 under the Securities Act covering all of the shares of our Class B common stock issuable or reserved for issuance under our 2015 Equity Incentive Plan, the DCP, the 2020 Plan, and our future compensation plans and programs currently under consideration. We expect to file that registration statement as soon as practicable after this offering. To the extent not subject to the Rule 144 limitations applicable to affiliates, vesting restrictions, and lock-up agreements, the shares registered on Form S-8 will be eligible for resale.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership, and disposition of our common stock, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service (the "IRS"), in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder's particular circumstances, including the impact of the alternative minimum tax or the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- brokers, dealers or traders in securities;
- "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- tax-qualified retirement plans;
- "qualified foreign pension funds" as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds; and
- persons subject to special tax accounting rules as a result of any item of gross income with respect to the stock being taken into account in an "applicable financial statement" (as defined in the Code).

If an entity treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATION PURPOSES ONLY AND IS NOT TAX OR LEGAL ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a Non-U.S. Holder

For purposes of this discussion, a "Non-U.S. Holder" is any beneficial owner of our common stock that is neither a "U.S. person" nor an entity treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section titled "Dividend Policy," the declaration and payment of dividends is within the discretion of our board of directors. If we do make distributions of cash or property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder's adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under "—Sale or Other Taxable Disposition."

Subject to the discussion below on effectively connected income, dividends paid to a Non-U.S. Holder of our common stock will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). If a Non-U.S. Holder holds the stock through a financial institution or other intermediary, the Non-U.S. Holder will be required to provide appropriate documentation to the intermediary, which then will be required to provide certification to the applicable withholding agent, either directly or through other intermediaries. A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Any documentation provided to an applicable withholding agent may need to be updated in certain circumstances. The certification requirements described above also may require a Non-U.S. Holder to provide its U.S. taxpayer identification number.

Sale or Other Taxable Disposition

A Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a U.S. real property interest, by reason of our status as a U.S. real property holding corporation ("USRPHC"), for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

A Non-U.S. Holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on any gain, which may be offset by U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC.

Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Payments of dividends on our common stock to a Non-U.S. Holder generally will not be subject to backup withholding, provided the Non-U.S. Holder certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. Notwithstanding the foregoing, backup withholding may apply if the applicable withholding agent has actual knowledge, or reason to know, that the holder is a United States person that is not an exempt recipient. However, information returns are required to be filed with the IRS in connection with any dividends on our common stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting, if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person, or the holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker (other than certain U.S.-related brokers) generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act ("FATCA")) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or (subject to the proposed Treasury Regulations discussed below) gross proceeds from the sale or other disposition of, our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock. While withholding under FATCA would have applied also to payments of gross proceeds from the sale or other disposition of stock on or after January 1, 2019, recently proposed Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Prospective Non-U.S. Holders should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

UNDERWRITING

We, the selling stockholders and the underwriters named below will enter into an underwriting agreement with respect to the shares being offered. Subject to certain conditions, each underwriter will severally agree to purchase the number of shares indicated in the following table. Goldman Sachs & Co. LLC and BofA Securities, Inc. are the representatives of the underwriters.

Underwriters	Number of Shares
Goldman Sachs & Co. LLC	
BofA Securities, Inc.	
RBC Capital Markets, LLC	
Robert W. Baird & Co. Incorporated	
KeyBanc Capital Markets Inc.	
Mizuho Securities USA LLC	
Total	

The underwriters will be committed to take and pay for all of the shares being offered, if any are taken, other than the shares covered by the option described below unless and until this option is exercised.

The underwriters will have an option to buy up to an additional shares from the selling stockholders to cover sales by the underwriters of a greater number of shares than the total number set forth in the table above. They may exercise that option for 30 days. If any shares are purchased pursuant to this option, the underwriters will severally purchase shares in approximately the same proportion as set forth in the table above.

We have agreed to pay certain expenses in connection with this offering on behalf of the selling stockholders, including all the underwriting discounts and commissions. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters by us. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares from the selling stockholders.

	No Exercise	Full Exercise
Per share	$	$
Total	$	$

Shares sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover page of this prospectus. Any shares sold by the underwriters to securities dealers may be sold at a discount of up to $ per share from the initial public offering price. After the initial offering of the shares, the representatives may change the offering price and the other selling terms. The offering of the shares by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

We and our officers, directors, and holders of substantially all of our common stock, including the selling stockholders, have agreed with the underwriters, subject to certain exceptions, not to dispose of or hedge any of their common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of this prospectus continuing through the date 180 days after the date of this prospectus, except with the prior written consent of Goldman Sachs. The Company lock-up contained in the underwriting agreement to be entered into by us with the underwriters in this offering will permit us and selling stockholders to sell shares of Class B common stock in an aggregate amount equal to up to 20% of our total Class B common stock outstanding at such time beginning on December 1, 2020. This agreement does not apply to any existing employee benefit plans. See the section titled "Shares Available for Future Sale" for a discussion of certain transfer restrictions.

Prior to the offering, there has been no public market for the shares. The initial public offering price will be negotiated among the representatives and us. Among the factors to be considered in determining the initial public offering price of the shares, in addition to prevailing market conditions, will be our historical performance, estimates of our business potential and earnings prospects, an assessment of our management, and the consideration of the above factors in relation to market valuation of companies in related businesses. We have applied to list the common stock on the Nasdaq Global Select Market under the symbol "BSY."

In connection with the offering, the underwriters may purchase and sell shares of common stock in the open market. These transactions may include short sales, stabilizing transactions, and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering, and a short position represents the amount of such sales that have not been covered by subsequent purchases. A "covered short position" is a short position that is not greater than the amount of additional shares for which the underwriters' option described above may be exercised. The underwriters may cover any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to cover the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase additional shares pursuant to the option described above. "Naked" short sales are any short sales that create a short position greater than the amount of additional shares for which the option described above may be exercised. The underwriters must cover any such naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of common stock made by the underwriters in the open market prior to the completion of the offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions. Purchases to cover a short position and stabilizing transactions, as well as other purchases by the underwriters for their own accounts, may have the effect of preventing or retarding a decline in the market price of our stock, and together with the imposition of the penalty bid, may stabilize, maintain, or otherwise affect the market price of our common stock. As a result, the price of our common stock may be higher than the price that otherwise might exist in the open market. The underwriters are not required to engage in these activities and may end any of these activities at any time. These transactions may be effected on the Nasdaq Global Select Market, in the over-the-counter market, or otherwise.

The underwriters do not expect sales to discretionary accounts to exceed five percent of the total number of shares offered. We will agree to reimburse the underwriters for certain FINRA-related expenses incurred by them in connection with the offering in an amount not to exceed $ as set forth in the underwriting agreement.

We estimate that our share of the total expenses of the offering, including all underwriting discounts and commissions applicable to the sale of shares by the selling stockholders, will be approximately $.

We and the selling stockholders will agree to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage, and other financial and non-financial activities and services. Certain of the underwriters and their respective affiliates have provided, and may in the future provide, a variety of these services to us and to persons and entities with relationships with us, for which they received or will receive customary fees and expenses. An affiliate of BofA Securities, Inc. is a lender under our Credit Facility.

In the ordinary course of their various business activities, the underwriters and their respective affiliates, officers, directors, and employees may purchase, sell, or hold a broad array of investments and actively traded securities, derivatives, loans, commodities, currencies, credit default swaps, and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities, and/or instruments of ours (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with us. The underwriters and their respective affiliates may also communicate independent investment recommendations, market color, or trading ideas and/or publish or express independent research views in respect of such assets, securities, or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities, and instruments.

European Economic Area and the United Kingdom

In relation to each Member State of the European Economic Area and the United Kingdom has implemented the Prospectus Regulation or each, a Relevant Member State, an offer to the public of our common shares may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of our common shares may be made at any time under the following exemptions under the Prospectus Regulation:

- To any legal entity which is a qualified investor as defined in the Prospectus Regulation;
- To fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or
- In any other circumstances falling within Article 31(4)(2) of the Prospectus Regulation;

provided that no such offer or shares of our common stock shall result in a requirement for the publication by us or any placement agent or underwriter of a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

Each person in a Relevant Member State who initially acquires any shares of common stock or to whom any offer is made will be deemed to have represented, acknowledged, and agreed to and with the Company and the underwriters that it is a qualified investor within the meaning of the Prospectus Regulation.

In the case of any common stock being offered to a financial intermediary as that term is used in Article 5(1) of the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged, and agreed that the shares of common stock acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public other than their offer or resale in a Relevant Member State to qualified investors, in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

The Company, the underwriters, and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements, and agreements.

For the purposes of this provision, the expression an “offer to public” in relation to our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and our common stock to be offered so as to enable an investor to decide to purchase our common stock, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State, the expression “Prospectus Regulation” means Regulation (EU) 2017/1129 and includes any relevant implementing measure in the Relevant Member State.

References to the Prospectus Regulation includes, in relation to the United Kingdom, the Prospectus Regulation as it forms part of UK domestic law by virtue of the European Union (Withdrawal) Act 2018.

This European Economic Area selling restriction is in addition to any other selling restrictions set out below.

United Kingdom

In the United Kingdom, this prospectus is only addressed to and directed as qualified investors who are (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, or the Order, (ii) high net worth entities and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order persons to whom an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, as amended) in connection with the issue or sale of any securities may otherwise lawfully be communicated or caused to be communicated, with all such persons together being referred to as relevant persons. Any investment or investment activity to which this prospectus relates is available only to relevant persons and will only be engaged with relevant persons. Any person who is not a relevant person should not act or rely on this prospectus or any of its contents.

Canada

The securities may be sold in Canada only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions, and Ongoing Registrant Obligations. Any resale of the securities must be made in accordance with an exemption form, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Hong Kong

The shares may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong), or the Companies (Winding Up and Miscellaneous Provisions) Ordinance, or which do not constitute an invitation to the public within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong), or the Securities and Futures Ordinance, (ii) to "professional investors" as defined in the Securities and Futures Ordinance and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance, and no advertisement, invitation, or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" in Hong Kong as defined in the Securities and Futures Ordinance and any rules made thereunder.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined under Section 4A of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA), under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to conditions set forth in the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor, the securities (as defined in Section 239(1) of the SFA) of that corporation shall not be transferable for six months after that corporation has acquired the shares under Section 275 of the SFA except: (i) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (ii) where such transfer arises from an offer in that corporation's securities pursuant to Section 275(1A) of the SFA, (iii) where no consideration is or will be given for the transfer, (iv) where the transfer is by operation of law, (v) as specified in Section 276(7) of the SFA, or (vi) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore, or Regulation 32.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is a trust (where the trustee is not an accredited investor (as defined in Section 4A of the SFA)) whose sole purpose is to hold investments and each beneficiary of the trust is an accredited investor, the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferable for six months after that trust has acquired the shares under Section 275 of the SFA except: (i) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (ii) where such transfer arises from an offer that is made on terms that such rights or interest are acquired at a consideration of not less than $200,000 (or its equivalent in a foreign currency) for each transaction (whether such amount is to be paid for in cash or by exchange of securities or other assets), (iii) where no consideration is or will be given for the transfer, (iv) where the transfer is by operation of law, (v) as specified in Section 276(7) of the SFA, or (vi) as specified in Regulation 32.

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948, as amended), or the "FIEA." The securities may not be offered or sold, directly or indirectly, in Japan or to or for the benefit of any resident of Japan (including any person resident in Japan or any corporation or other entity organized under the laws of Japan) or to others for reoffering or resale, directly or indirectly, in Japan or to or for the benefit of any resident of Japan, except pursuant to an exemption from the registration requirements of the FIEA and otherwise in compliance with any relevant laws and regulations of Japan.

Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange ("SIX") or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA ("FINMA"), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes ("CISA"). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority ("DFSA"). This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

LEGAL MATTERS

The validity of the shares of Class B common stock will be passed upon for us by Simpson Thacher & Bartlett LLP, New York, New York. Certain legal matters in connection with this offering will be passed upon for the underwriters by Goodwin Procter LLP, Redwood City, California and for the selling stockholders by Whalen LLP, Newport Beach, California.

EXPERTS

The consolidated financial statements of Bentley Systems, Incorporated as of and for the years ended December 31, 2018 and 2019 have been included herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, appearing elsewhere herein, and upon the authority of said firm as experts in accounting and auditing. The audit report refers to changes in accounting principle for revenue from contracts with customers and sales commissions due to the adoption of new accounting standards as of January 1, 2019.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of Class B common stock covered by this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement, some of which is contained in exhibits to the registration statement as permitted by the rules and regulations of the SEC. For further information with respect to us and our Class B common stock, we refer you to the registration statement of which this prospectus forms a part, including the exhibits filed as a part of the registration statement. If a contract or document has been filed as an exhibit to the registration statement of which this prospectus forms a part, please see the copy of the contract or document that has been filed. The SEC maintains an Internet website that contains reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

Immediately upon the effectiveness of the registration statement of which this prospectus forms a part, we will become subject to the information and reporting requirements of the Exchange Act and, in accordance with this law, will file periodic reports, proxy statements, and other information with the SEC. These periodic reports, proxy statements, and other information will be available for inspection and copying at the website of the SEC referred to above. We also maintain a website at www.bentley.com. Upon the effectiveness of the registration statement of which this prospectus forms a part, you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Bentley Systems, Incorporated:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Bentley Systems, Incorporated and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company has changed its method of accounting for revenue from contracts with customers and sales commissions as of January 1, 2019 due to the adoption of Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers*, and Subtopic 340-40, *Other Assets and Deferred Costs—Contracts with Customers*.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2002.

Philadelphia, Pennsylvania
March 6, 2020

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Balance Sheets

(in thousands, except share and per share data)

	December 31, 2018	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 81,183	$ 121,101
Accounts receivable, net of allowances of $7,611 and $7,274, respectively	184,565	204,501
Prepaid income taxes	5,085	4,543
Prepaid and other current assets	12,390	23,413
Total current assets	283,223	353,558
Property and equipment, net	29,393	29,632
Intangible assets, net	54,001	46,313
Goodwill	446,318	480,065
Investment in joint venture	—	1,725
Deferred income taxes	81,066	51,068
Other assets	29,595	32,238
Total assets	$ 923,596	$ 994,599
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 8,567	$ 17,669
Accruals and other current liabilities	136,699	167,517
Deferred revenues	287,682	204,991
Income taxes payable	2,794	2,236
Total current liabilities	435,742	392,413
Long-term debt	258,750	233,750
Deferred revenues	49,769	8,154
Deferred income taxes	10,470	8,260
Income taxes payable	12,904	8,140
Other liabilities	8,530	9,263
Total liabilities	776,165	659,980
Commitments and contingencies (Note 17)		
Stockholders' equity:		
Class A Common Stock, $0.01 par value, authorized 320,000,000 shares; issued 11,601,757 shares as of December 31, 2018 and 2019 and Class B Common Stock, $0.01 par value, authorized 600,000,000 shares; issued 238,681,756 and 243,241,192 shares as of December 31, 2018 and 2019, respectively	2,502	2,548
Additional paid-in capital	392,896	408,667
Accumulated other comprehensive loss	(29,414)	(23,927)
Accumulated deficit	(218,553)	(52,669)
Total stockholders' equity	147,431	334,619
Total liabilities and stockholders' equity	$ 923,596	$ 994,599

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Operations

(in thousands, except share and per share data)

	Year Ended December 31,	
	2018	2019
Revenues:		
Subscriptions	$ 557,421	$ 608,300
Perpetual licenses	61,065	59,693
Subscriptions and licenses	618,486	667,993
Services	73,224	68,661
Total revenues	691,710	736,654
Cost of revenues:		
Cost of subscriptions and licenses	55,113	71,578
Cost of services	76,211	72,572
Total cost of revenues	131,324	144,150
Gross profit	560,386	592,504
Operating expenses:		
Research and development	175,032	183,552
Selling and marketing	160,635	155,294
General and administrative	89,328	97,580
Amortization of purchased intangibles	14,000	14,213
Total operating expenses	438,995	450,639
Income from operations	121,391	141,865
Interest expense, net	(8,765)	(8,199)
Other income (expense), net	236	(5,557)
Income before income taxes	112,862	128,109
Provision for income taxes	(29,250)	23,738
Equity in loss of joint venture, net of tax	—	1,275
Net income	142,112	103,096
Less: Net income attributable to participating securities	(4)	(8)
Net income attributable to Class A and Class B common stockholders	$ 142,108	$ 103,088
Per share information:		
Net income per share, basic	$ 0.50	$ 0.36
Net income per share, diluted	$ 0.49	$ 0.35
Weighted average shares outstanding, basic	285,805,096	284,625,642
Weighted average shares outstanding, diluted	292,624,496	293,796,707

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Comprehensive Income

(in thousands, except share and per share data)

	Year Ended December 31,	
	2018	2019
Net income	$ 142,112	$ 103,096
Other comprehensive income (loss), net of taxes:		
Foreign currency translation adjustments	(11,020)	5,959
Actuarial gain (loss) on retirement plan, net of tax effect of ($62) and $203	146	(472)
Total other comprehensive income (loss), net of taxes	(10,874)	5,487
Comprehensive income	$ 131,238	$ 108,583

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Stockholders' Equity

(in thousands, except share and per share data)

	Stockholders' Equity					
	Class A and Class B Common Stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
	Shares	Par value				
Balance as of December 31, 2017	247,465,176	$ 2,474	$ 377,809	$ (18,540)	$ (309,576)	$ 52,167
Net income	—	—	—	—	142,112	142,112
Other comprehensive income (loss)	—	—	—	(10,874)	—	(10,874)
Dividends declared	—	—	—	—	(20,005)	(20,005)
Profit sharing plan shares, net	(465,979)	(5)	—	—	(3,382)	(3,387)
Shares issued in connection with deferred compensation plan	2,332,585	23	—	—	(6,884)	(6,861)
Deferred compensation plan voluntary contributions and vesting of awards	—	—	4,504	—	—	4,504
Payment of shareholder Put and Call rights	(1,131,928)	(11)	—	—	(8,560)	(8,571)
Common Stock Purchase Agreement, net	(1,281,633)	(13)	13	—	(9,673)	(9,673)
Stock option exercises, net	2,812,998	28	2,151	—	(1,569)	610
Stock-based compensation expense	—	—	7,882	—	—	7,882
Shares related to restricted stock, net	546,783	6	494	—	(637)	(137)
Other	5,511	—	43	—	—	43
Cumulative effect adjustment on deferred tax expense	—	—	—	—	(379)	(379)
Balance as of December 31, 2018	250,283,513	2,502	392,896	(29,414)	(218,553)	147,431
Cumulative effect of accounting changes	—	—	—	—	107,822	107,822
Net income	—	—	—	—	103,096	103,096
Other comprehensive income (loss)	—	—	—	5,487	—	5,487
Dividends declared	—	—	—	—	(25,390)	(25,390)
Profit sharing plan shares, net	(318,203)	(3)	—	—	(2,414)	(2,417)
Shares issued in connection with deferred compensation plan	2,322,983	23	—	—	(5,632)	(5,609)
Deferred compensation plan voluntary contributions and vesting of awards	—	—	3,586	—	—	3,586
Payment of shareholder Put and Call rights	(1,126,747)	(11)	—	—	(8,827)	(8,838)
Common Stock Purchase Agreement, net	64,509	—	466	—	(48)	418
Stock option exercises, net	3,214,542	33	3,579	—	(2,309)	1,303
Stock-based compensation expense	—	—	8,091	—	—	8,091
Shares related to restricted stock, net	395,336	4	(4)	—	(399)	(399)
Other	7,016	—	53	—	(15)	38
Balance as of December 31, 2019	254,842,949	$ 2,548	$ 408,667	$ (23,927)	$ (52,669)	$ 334,619

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Cash Flows

(in thousands, except share and per share data)

	Year Ended December 31,	
	2018	2019
Cash flows from operating activities:		
Net income	$ 142,112	$ 103,096
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	29,200	32,160
Provision for accounts receivable allowance	2,393	862
Deferred income taxes	(60,060)	732
Deferred compensation plan activity	4,323	3,994
Stock-based compensation expense	7,882	8,091
Amortization of deferred debt issuance costs	552	553
Decrease in fair value of call options	487	159
Change in fair value of contingent consideration	272	62
Foreign currency remeasurement loss (gain)	(1,645)	5,311
Equity in loss of joint venture, net of tax	—	1,275
Changes in assets and liabilities, net of effect from acquisitions:		
Accounts receivable, net	(41,787)	(21,152)
Prepaid and other assets	2,831	(668)
Accounts payable, accruals and other liabilities	37,249	41,880
Deferred revenues	21,247	(268)
Income taxes payable	16,409	(5,314)
Net cash provided by operating activities	161,465	170,773
Cash flows from investing activities:		
Purchases of property and equipment and investment in capitalized software	(18,616)	(15,804)
Capitalization of costs to translate software products into foreign languages	(877)	(835)
Acquisitions, net of cash acquired of $7,774 and $2,523, respectively	(135,264)	(34,054)
Investment in joint venture	—	(3,000)
Net cash used in investing activities	(154,757)	(53,693)
Cash flows from financing activities:		
Proceeds from credit facilities	148,250	191,250
Payments of credit facilities	(159,500)	(216,250)
Payments of acquisition debt and other consideration	9	(11,029)
Payments of dividends	(20,059)	(24,989)
Payments for shares acquired including shares withheld for taxes	(46,451)	(24,166)
Proceeds from Common Stock Purchase Agreement	16,220	4,510
Net proceeds from exercise of common stock options and restricted stock	2,732	3,626
Net cash used in financing activities	(58,799)	(77,048)
Effect of exchange rate changes on cash and cash equivalents	(1,193)	(114)
Increase (decrease) in cash and cash equivalents	(53,284)	39,918
Cash and cash equivalents, beginning of year	134,467	81,183
Cash and cash equivalents, end of year	$ 81,183	$ 121,101
Supplemental information:		
Cash paid for income taxes	$ 25,782	$ 27,907
Income tax refunds	7,285	1,752
Interest paid	8,863	9,221
Non-cash contingent acquisition consideration	13,456	4,498
Non-cash deferred acquisition consideration	690	—

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements

(in thousands, except share and per share data)

Note 1: Basis of Presentation and Significant Accounting Policies

Description of Business and Operations—Bentley Systems, Incorporated ("Bentley" or the "Company") is a Delaware corporation that was founded in 1984 and is headquartered in Exton, Pennsylvania. The Company, together with its subsidiaries, is a leading global provider of infrastructure engineering software solutions for professionals and organizations involved in the project delivery and operational performance of infrastructure assets. The Company is dedicated to advancing infrastructure through its comprehensive software solutions that span engineering disciplines, assets, and lifecycle processes. The Company's integrated software platform encompasses both the design and construction of infrastructure, which the Company refers to as project delivery, and the operation of infrastructure assets, which the Company refers to as asset performance. The Company's software solutions are designed to enable information mobility for a more complete flow of information among applications, across distributed project teams, from offices to the field, and throughout the infrastructure lifecycle. The Company believes its solutions extend the reach and scope of digital engineering models from the project delivery phase into the asset performance phase of the infrastructure lifecycle, which enables engineers to make infrastructure assets more intelligent and sustainable. Users of the Company's solutions include engineers and construction professionals who collaborate on project delivery, and owner-operators who maintain, adapt, and optimize the performance of infrastructure assets.

Basis of Presentation and Consolidation—The consolidated financial statements and accompanying notes have been prepared in United States ("U.S.") dollars and in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

The Company's principal subsidiaries are Bentley Systems International Limited (Ireland), Bentley Software International, Limited (Bermuda), Bentley Canada Inc. (Canada), Bentley Systems Europe BV (the Netherlands), Bentley Systems Pty Ltd. (Australia), Bentley Systems Co., Ltd. (Japan), Bentley Systems Germany GmbH (Germany), Bentley Systems Ltd. (UK), and Bentley Systems India Private Limited (India).

Stock Dividend—On May 1, 2018, the Company paid a previously declared stock dividend (the "Dividend") to all holders of the Company's common stock as of April 30, 2018. Under the terms of the Dividend, each stockholder received one share of the Company's Class B Common Stock for each share of either Class A or Class B Common Stock then owned, including shares held in the Company's 401(k)/Profit Sharing plan. Because the Dividend had the economic effect of a 2-for-1 stock split (with twice as many shares issued, each worth half the original value of a share), all prior period share and per share amounts presented in the consolidated financial statements and notes have been adjusted on a retroactive basis to give effect to the Dividend.

In addition, under the terms of the Company's equity incentive plans and instruments, all outstanding awards and instruments were automatically adjusted as required by their terms to reflect the Dividend, including, as it relates to stock options, by doubling the number of outstanding options and reducing by one-half the exercise prices of all outstanding options.

Use of Estimates—The preparation of consolidated financial statements and related disclosures in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting periods. The Company's critical estimates and assumptions include revenue recognition, adequacy of allowance for accounts receivable, determination of the fair value of acquired assets and liabilities, the fair value of derivative financial instruments, the fair value of stock-based compensation, useful lives for depreciation and amortization, impairment of goodwill and intangible assets, and accounting for income taxes. Actual results could differ materially from these estimates.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 1: Basis of Presentation and Significant Accounting Policies (Continued)

Reclassifications—Certain prior year amounts have been reclassified for consistency with the current period presentation. These reclassifications had no effect on the reported results of operations.

Cash and Cash Equivalents—The Company considers all highly liquid investments with a maturity of three months or less at the date of purchase to be cash equivalents. At December 31, 2018 and 2019, all of the Company's cash and cash equivalents consisted of money market funds and cash held in checking accounts maintained at various financial institutions. Cash equivalents are recorded at cost, which approximates fair value.

Revenues—On January 1, 2019, the Company adopted Accounting Standards Update ("ASU") No. 2014-09, *Revenue from Contracts with Customers*, and related amendments ("Topic 606") as discussed further in Recently Adopted Accounting Guidance below. Results for reporting periods beginning on or after January 1, 2019 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with the guidance provided by Accounting Standards Codification ("ASC") 985-605, *Software-Revenue Recognition*, and revenues for non-software deliverables in accordance with Topic 605-25, *Revenue Recognition*, *Multiple-Element Arrangements*. The Company refers to ASC 985-605 and Topic 605-25 collectively as Topic 605.

The accounting policies for the Company's revenue recognition are explained in Note 3, Revenue from Contracts with Customers.

Cost of Revenues—Cost of subscriptions and licenses includes salaries and other related costs, including the depreciation of property and equipment and the amortization of capitalized software costs associated with servicing software subscriptions, the amortization of intangible assets associated with acquired software and technology, channel partner compensation for providing sales coverage to subscribers, as well as cloud-related costs incurred for servicing our customers using cloud deployed hosted solutions and those using our SELECT program. Cost of services includes salaries for internal and third-party personnel and related overhead costs, including depreciation of property and equipment, for providing training, implementation, configuration, and customization services to customers, amortization of capitalized software costs, and related out-of-pocket expenses incurred.

Property and Equipment—Property and equipment are recorded at cost less accumulated depreciation. Depreciation is calculated using the straight-line method over the estimated useful lives of the assets, which range from three to twenty-five years. Leasehold improvements are depreciated over the shorter of the estimated useful life of the leasehold improvements or the lease term. Land is not depreciated. Depreciation for equipment commences once it is placed in service and depreciation for buildings and leasehold improvements commences once they are ready for their intended use. Estimated useful lives of property and equipment are as follows:

	Useful life
Building and improvements	25 years
Computer equipment and software	3 years
Furniture, fixtures, and equipment	5 years
Aircraft	6 years
Automobiles	3 years

Cost of maintenance and repairs is charged to expense as incurred. Upon retirement or other disposition, the cost of the asset and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is reflected in the consolidated statements of operations.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 1: Basis of Presentation and Significant Accounting Policies (Continued)

Goodwill and Other Intangibles—Intangible assets arise from acquisitions and principally consist of goodwill, trademarks, customer relationships, in-process research and development, and acquired software and technology. Intangibles, other than goodwill and in-process research and development, are amortized on a straight-line basis over their estimated useful lives, which range from three to ten years (see Note 6).

Goodwill consists of the excess of cost over the fair value of net assets acquired in business combinations. Goodwill is not amortized, but instead is tested annually for impairment, or more frequently if events occur or circumstances change that would more likely than not reduce its fair value below its carrying amount. The Company operates as a single reporting unit.

The initial step in evaluating goodwill for impairment requires the Company to determine the reporting unit's fair value and compare it to the carrying value, including goodwill, of such reporting unit. As part of the assessment, the Company may first qualitatively assess whether it is more likely than not (a likelihood of more than 50 percent) that a goodwill impairment exists. In evaluating whether it is more likely than not that a goodwill impairment exists, the Company considers the factors identified in ASC 350, *Intangibles—Goodwill and Other*. The Company also considers whether there are significant differences between the carrying amount and the estimated fair value of its assets and liabilities, and the existence of significant unrecognized intangible assets. Based upon the Company's most recent annual impairment assessment completed as of October 1, 2019, it is not more likely than not that a goodwill impairment exists. There was no impairment of goodwill as a result of the Company's annual impairment assessments conducted during the years ended December 31, 2018 or 2019.

Long-Lived Assets—The Company evaluates the recoverability of long-lived assets, such as property and equipment and amortizable intangible assets, in accordance with authoritative guidance on accounting for the impairment or disposal of long-lived assets, which includes evaluating long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable. If circumstances require a long-lived asset to be tested for possible impairment, the Company first compares the undiscounted cash flows expected to be generated by that asset to its carrying value. If the carrying value of the long-lived asset is not recoverable on an undiscounted cash flow basis, an impairment is recognized to the extent that the carrying value exceeds its fair value. No impairment of long-lived assets occurred during the years ended December 31, 2018 or 2019.

Research and Development—Research and development expenses, which are generally expensed as incurred, primarily consist of personnel and related costs of our research and development staff, including salaries, benefits, bonuses, stock-based compensation, and costs of certain third-party contractors, as well as allocated overhead costs. The Company expenses software development costs, including costs to develop software products or the software component of products to be sold, leased, or marketed to external accounts, before technological feasibility is reached. Technological feasibility is typically reached shortly before the release of such products and as a result, development costs that meet the criteria for capitalization were not material for the periods presented.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 1: Basis of Presentation and Significant Accounting Policies (Continued)

The Company capitalizes certain development costs related to certain projects under its Accelerated Commercial Development Program (the Company's structured approach to an in-house business incubator function) once technological feasibility is established. Technological feasibility is established when a detailed program design has been completed and documented, the Company has established that the necessary skills, hardware, and software technology are available to produce the product, and there are no unresolved high-risk development issues. Once the software is ready for its intended use, amortization is recorded over the software's estimated useful life (generally three years). During the years ended December 31, 2018 and 2019, total costs capitalized under the Accelerated Commercial Development Program were $5,735 and $6,060, respectively. Additionally, during the years ended December 31, 2018 and 2019, total Accelerated Commercial Development Program related amortization recorded in *Costs of subscriptions and licenses* was $2,052 and $3,516, respectively.

Certain costs related to the creation of foreign language translations are capitalized and amortized over the economic life of the software.

Advertising Expense—The Company expenses advertising costs as incurred. Advertising expense of $2,378 and $1,579 is included in *Selling and marketing* expense in the accompanying consolidated statements of operations for the years ended December 31, 2018 and 2019, respectively.

Income Taxes—The Company recognizes deferred income tax assets and liabilities for the expected future tax consequences of net operating loss carryforwards, credit carryforwards, and temporary differences between financial statement carrying amounts of assets and liabilities and their respective tax bases, using enacted tax rates in effect for the year in which the items are expected to reverse.

The Company accounts for uncertain tax positions based on an evaluation as to whether it is more likely than not that a tax position will be sustained on audit, including resolution of any related appeals or litigation processes. This evaluation is based on all available evidence and assumes that the appropriate tax authorities have full knowledge of all relevant information concerning the tax position. The tax benefit recognized is based on the largest amount that is greater than 50% likely of being realized upon ultimate settlement. Interest expense and penalties are included in *Provision for income taxes* in the consolidated statements of operations.

U.S. Tax Reform—On December 22, 2017, the Tax Cuts and Jobs Act (the "Act" or "U.S. tax reform") was enacted. U.S. tax reform, among other things, reduces the U.S. federal income tax rate to 21% from 35% in 2018, institutes a dividends received deduction for foreign earnings with a related tax for the deemed repatriation of unremitted foreign earnings, and creates a new U.S. minimum tax on earnings of foreign subsidiaries. The Company has completed its accounting for the effects of the Act in 2018 and has included those effects in *Provision for income taxes* in the consolidated statements of operations.

Segment—Operating segments are defined as components of an enterprise about which separate financial information is evaluated regularly by the chief operating decision maker ("CODM") to allocate resources and assess performance. The Company defines its CODM to be its chief executive officer. The chief executive officer reviews the financial information presented on a consolidated basis for purposes of making operating decisions, allocating resources, and evaluating the Company's financial performance. Accordingly, the Company has determined it operates and manages its business in a single reportable operating segment, the development and marketing of computer software and related services. The Company markets its products and services through the Company's offices in the United States and its wholly-owned branches and subsidiaries internationally.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 1: Basis of Presentation and Significant Accounting Policies (Continued)

Foreign Currency Translation—Gains and losses resulting from foreign currency transactions denominated in currencies other than the functional currency are included in *Other income (expense), net* (see Note 20). The assets and liabilities of foreign subsidiaries are translated from their respective functional currencies into U.S. Dollars at the rates in effect at the balance sheet date, and revenue and expense amounts are translated at average rates during the period. Foreign currency translation adjustments are recorded as a component of *Other comprehensive income (loss), net of taxes* in the consolidated statements of comprehensive income.

Concentration of Credit Risk—Financial instruments that potentially subject the Company to concentration of credit risk consist primarily of its cash and cash equivalents and receivables. To reduce credit risk, the Company performs ongoing credit evaluations of its customers and limits the amount of credit extended when deemed necessary. Generally, the Company requires no collateral from its customers. The Company maintains an allowance for potential credit losses, but historically has not experienced any significant losses related to individual customers or groups of customers in any particular industry or geographic area. No single customer accounted for more than 2.5% of the Company's revenue in the years ended December 31, 2018 or 2019.

The Company's cash and cash equivalents are deposited with financial institutions and invested in money market funds that the Company believes are of high credit quality.

Investment in Joint Venture—The Company is party to a joint venture which is accounted for using the equity method. The Company applies the equity method to investments in which its ownership interest is 50 percent or less and in which it exercises significant influence over operating and financial policies of the investee. Under the equity method, original investments are recorded at cost and adjusted by the Company's share of undistributed earnings and losses of these investments. The joint venture is not material to the Company's financial results (see Note 7).

Accounts Receivable and Allowance for Doubtful Accounts— Accounts receivable represent receivables from customers for products and services invoiced by the Company for which payment is outstanding. Receivables are recorded at the invoiced amount and do not bear interest.

The Company establishes an allowance for doubtful accounts for estimated losses expected during the accounts receivable collection process. The allowance for doubtful accounts reduces the accounts receivable balance to the net realizable value of the outstanding accounts and installment receivables. The development of the allowance for doubtful accounts is based on a review of past due amounts, historical write-off and recovery experience, as well as aging trends affecting specific accounts and general operational factors affecting all accounts. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote.

The Company considers current economic trends when evaluating the adequacy of the allowance for doubtful accounts. If circumstances relating to specific customers change or unanticipated changes occur in the general business environment, the Company's estimate of the recoverability of receivables could be further adjusted.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 1: Basis of Presentation and Significant Accounting Policies (Continued)

Activity related to the Company's allowance for doubtful accounts was as follows:

	Year Ended December 31,	
	2018	2019
Balance, beginning of year	$ 5,669	$ 7,611
Allowances (recoveries) recorded	1,620	(452)
Foreign currency translation adjustments	322	115
Balance, end of year	$ 7,611	$ 7,274

Stock-Based Compensation—The Company records all stock-based compensation as an expense in the consolidated statements of operations measured at the grant date fair value of the award. The fair value of stock option awards is determined using the Black-Scholes option pricing model. For all other equity-based arrangements, the share-based compensation expense is based on the share price at the grant date (see Note 14).

Guarantees—The Company's software license agreements typically provide for indemnification of customers for intellectual property infringement claims. The Company also warrants to customers, when requested, that its software products operate substantially in accordance with standard specifications for a limited period of time. The Company has not incurred significant obligations under customer indemnification or warranty provisions historically and does not expect to incur significant obligations in the future. Accordingly, the Company does not maintain accruals for potential customer indemnification or warranty-related obligations.

Derivative Arrangements—The Company records derivative instruments as an asset or liability measured at fair value and depending on the nature of the hedge, the corresponding changes in the fair value of these instruments are recorded in the consolidated statements of operations or comprehensive income. If the derivative is determined to be a hedge, changes in the fair value of the derivative are offset against the change in the fair value of the hedged assets or liabilities through the consolidated statements of operations or recognized in *Other comprehensive income (loss), net of taxes* until the hedged item is recognized in the consolidated statements of operations. The ineffective portion of a derivative's change in fair value is recognized in earnings. Also, changes in the entire fair value of a derivative that is not designated as a hedge are recognized in earnings (see Note 16).

Fair Value Measurements—The Company categorizes its assets and liabilities measured at fair value into a three-level hierarchy, based on the priority of the inputs to the respective valuation technique. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). An asset or liability's classification within the fair value hierarchy is based on the lowest level of significant input to its valuation. The Company's assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation of fair value assets and liabilities and their placement within the fair value hierarchy levels (see Note 16).

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 2: Recent Accounting Pronouncements

In August 2018, the Financial Accounting Standards Board ("FASB") issued ASU No. 2018-15, Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract*, which clarifies the accounting for implementation costs in cloud computing arrangements. ASU 2018-15 is effective for the Company for the annual reporting period beginning after December 15, 2020, and interim periods beginning after December 15, 2021. Early adoption is permitted, including adoption in an interim period. The Company is currently evaluating the accounting, transition, and disclosure requirements of the standard and its impact on the Company's consolidated results of operations and financial position.

In August 2018, the FASB issued ASU No. 2018-13, Fair Value Measurement (Topic 820): *Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement*. ASU 2018-13 modifies certain required disclosures and establishes new requirements related to fair value measurement. Additionally, the disclosure requirement to state the reasons for transfers between Level 1 and Level 2, the policy for timing transfers between levels, and the valuation process for Level 3 measurements have been removed. The ASU is effective for the Company for the annual period beginning after December 15, 2019, including interim periods within that annual period. Early adoption is permitted. The Company does not believe the adoption of this guidance will have a material impact on the Company's consolidated results of operations and financial position.

In January 2017, the FASB issued ASU No. 2017-04, Intangibles-Goodwill and Other (Topic 350): *Simplifying the Test for Goodwill Impairment*, which removes Step 2 of the goodwill impairment test. A goodwill impairment will now be calculated as the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. This ASU is effective for the Company for the interim and annual reporting periods beginning after December 15, 2021. Early adoption is permitted, including adoption in an interim period. The Company does not believe that this ASU will have a material impact on the Company's consolidated results of operations and financial position.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments—Credit Losses (Topic 326): *Measurement of Credit Losses on Financial Instruments*. Current guidance requires the allowance for doubtful accounts to be estimated based on an incurred loss model, which considers past and current conditions. ASU 2016-13 requires companies to use an expected loss model that also considers reasonable and supportable forecasts of future conditions. ASU 2016-13 is effective for the Company for the annual period beginning after December 15, 2020, including interim periods within that annual period. Early adoption is permitted. The Company plans to adopt ASU 2016-13 as of January 1, 2020 and does not believe the adoption of this guidance will have a material impact on the Company's consolidated results of operations and financial position.

In February 2016, the FASB issued ASU No. 2016-02 regarding ASC Topic 842, *Leases* ("Topic 842"). This ASU requires balance sheet recognition of lease assets and lease liabilities by lessees for leases classified as operating leases, with an optional policy election to not recognize lease assets and lease liabilities for leases with a term of 12 months or less. The amendments also require new disclosures, including qualitative and quantitative requirements, providing additional information about the amounts recorded in the financial statements. The new standard is effective for the Company for the fiscal year beginning after December 15, 2020, including interim periods within the fiscal year beginning after December 15, 2020. Early adoption is permitted. Subsequent to the issuance of ASU 2016-02, the FASB issued ASU Nos. 2018-01, *Land Easement Practical Expedient for Transition to Topic 842*, 2018-10, *Codification Improvements to Topic 842, Leases*, 2018-11, Leases (Topic 842): *Targeted Improvements*, and 2018-20, *Narrow-Scope Improvements for Lessors*. These ASUs do not change the core principle of the guidance in ASU 2016-02. Instead, these amendments are intended to clarify and improve operability of certain topics included within the lease standard. These ASUs will have the same effective date and transition requirements as ASU 2016-02.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 2: Recent Accounting Pronouncements (Continued)

The Company will adopt Topic 842 as of January 1, 2020 using the modified retrospective method for all existing leases. Upon adoption, the Company is required to recognize its lease assets and its lease liabilities measured by taking the present value of all future fixed lease payments discounted using the Company's incremental borrowing rate.

The Company has elected to opt for the package of practical expedients and to not reassess whether any existing contracts are leases or contain a lease, the lease classification of existing leases, and initial direct costs for existing leases. Additionally, the Company has elected the practical expedients to combine lease and non-lease components for new leases post adoption and to not recognize lease assets and lease liabilities for leases with a term of 12 months or less.

The adoption of Topic 842 will materially increase the Company's total assets and total liabilities as compared to amounts reported prior to adoption. Upon adoption, the Company expects to recognize right of use assets of approximately $46,000 and lease liabilities of approximately $48,000 calculated based on the present value of the remaining minimum lease payments as of the adoption date. Topic 842 is not expected to have a material impact to the Company's consolidated statement of operations.

Recently Adopted Accounting Guidance

ASU 2016-15—In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): *Classification of Certain Cash Receipts and Cash Payments*. ASU 2016-15 addresses eight specific cash flow issues with the objective of reducing diversity in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The Company adopted the standard effective January 1, 2019. The adoption of this ASU did not have a material impact on the Company's consolidated statements of cash flows.

ASU 2016-16—In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfer of Assets Other than Inventory*, which requires the recognition of the income tax effects of an intra-entity transfer of an asset, other than inventory, when the transfer occurs, eliminating an exception under previous U.S. GAAP in which the tax effects of intra-entity asset transfers were deferred until the transferred asset is sold to a third party or otherwise recovered through use. The Company adopted this standard effective January 1, 2018 by applying the required modified retrospective approach with a cumulative-effect adjustment to retained earnings of certain previously deferred tax benefits. Accordingly, a cumulative-effect adjustment on deferred tax expense of $379 was recorded in *Accumulated deficit* during the year ended December 31, 2018.

During 2018, the Company had intercompany sales of certain intangible operating assets between its foreign subsidiaries. The sales resulted in a 2018 net tax benefit of $46,369. For the year ended December 31, 2018, the impact of adopting ASU 2016-16 resulted in a reduction of $45,596 in *Provision of income taxes*, as well as a $45,596 increase in *Deferred income taxes* (asset) and *Net income*, compared to what the Company would have recognized under previous U.S. GAAP. Furthermore, the impact of adoption resulted in a $0.16 increase in both basic and diluted earnings per share for the year ended December 31, 2018.

Revenue Recognition—On January 1, 2019, the Company adopted Topic 606, which supersedes substantially all existing revenue recognition guidance under U.S. GAAP. The Company adopted Topic 606 using the modified retrospective method, under which the cumulative effect of initially applying Topic 606 of $125,464 ($101,489, net of tax) was recorded as a cumulative decrease to the opening balance of *Accumulated deficit* as of January 1, 2019. The Company applied the standard only to contracts that were not completed as of the date of initial application. The comparative information has not been adjusted and continues to be reported under Topic 605.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 2: Recent Accounting Pronouncements (Continued)

The core principle of Topic 606 is to recognize revenue when promised goods or services are transferred to a customer in an amount that reflects the consideration that is expected to be received for those goods or services. Under the new guidance, the Company is required to evaluate revenue recognition through a five-step process: (1) identify a contract with a customer; (2) identify the performance obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligations in the contract; and (5) recognize revenue when (or as) the Company satisfies a performance obligation. The standard also requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. In applying the principles of Topic 606, more judgment and estimates are required within the revenue recognition process than was required under previous U.S. GAAP, including identifying performance obligations, estimating the amount of variable consideration to include in the transaction price, and estimating the value of each performance obligation to allocate the total transaction price to each separate performance obligation.

The most significant impact to the Company resulting from the adoption of Topic 606 relates to timing of revenue recognition for perpetual licenses and the accounting for certain of the Company's subscription arrangements that include term-based software licenses bundled with support. Under prior guidance, revenue for perpetual licenses was recognized ratably over a three-year period, while revenue attributable to the term-based software licenses was recognized ratably over the term. Under Topic 606, both perpetual license and term-based software license revenue will be recognized up-front upon delivery of the software license. Revenue recognition related to support, hosting, usage-based offerings, and services is substantially unchanged, with support and hosting revenue recorded ratably over the contract term, usage-based revenue recognized upon usage or delivery, and services revenue as delivered.

Costs to Obtain a Contract with a Customer—With the adoption of Topic 606, the Company also adopted ASC Topic 340-40, *Other Assets and Deferred Costs-Contracts with Customers* (Topic 340-40). Prior to the adoption of Topic 340-40, the Company previously recognized compensation paid to sales employees and certain channel partners related to obtaining customer contracts when incurred. Under Topic 340-40, the Company recognizes an asset for the incremental costs of obtaining a contract with a customer if the Company expects the benefit of those costs to be longer than one year. The contract costs are amortized based on the economic life of the goods and services to which the contract costs relate. The Company has determined that certain sales incentive programs meet the requirements to be capitalized. The Company applies a practical expedient to expense costs as incurred for costs to obtain a contract with a customer when the amortization period would have been one year or less. These costs include the Company's internal sales force compensation program and certain channel partner sales incentive programs for which the annual compensation is commensurate with annual sales activities. Under the modified retrospective method, the Company recorded a cumulative decrease of $7,734 ($6,333, net of tax) to the opening balance of *Accumulated deficit* as of January 1, 2019. The comparative information has not been adjusted and continues to be reported as incurred.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 2: Recent Accounting Pronouncements (Continued)

Quantitative Effect of Topics 606 and 340-40 Adoption

The following tables compare the reported consolidated balance sheet and statements of operations, as of and for the year ended December 31, 2019, to the amounts had Topic 605 been in effect.

	As of December 31,			
	2018	2019		
	As reported Topic 605	As adjusted Topic 605	Impact from the adoption of Topic 606 and Topic 340-40	As reported Topic 606
Assets				
Current assets				
Cash and cash equivalents	$ 81,183	$ 121,101	$ —	$ 121,101
Accounts receivable, net	184,565	204,268	233	204,501
Prepaid income taxes	5,085	6,732	(2,189)	4,543
Prepaid and other current assets[1]	12,390	20,080	3,333	23,413
Total current assets	283,223	352,181	1,377	353,558
Property and equipment, net	29,393	29,632	—	29,632
Intangible assets, net	54,001	46,313	—	46,313
Goodwill	446,318	480,065	—	480,065
Investment in joint venture	—	1,725	—	1,725
Deferred income taxes	81,066	72,611	(21,543)	51,068
Other assets[1]	29,595	26,517	5,721	32,238
Total assets	$ 923,596	$ 1,009,044	$ (14,445)	$ 994,599
Liabilities and Stockholders' Equity				
Current liabilities				
Accounts payable	$ 8,567	$ 17,669	$ —	$ 17,669
Accruals and other current liabilities	136,699	167,225	292	167,517
Deferred revenues	287,682	282,070	(77,079)	204,991
Income taxes payable	2,794	1,030	1,206	2,236
Total current liabilities	435,742	467,994	(75,581)	392,413
Long-term debt	258,750	233,750	—	233,750
Deferred revenues	49,769	56,121	(47,967)	8,154
Deferred income taxes	10,470	7,627	633	8,260
Income taxes payable	12,904	6,321	1,819	8,140
Other liabilities	8,530	9,263	—	9,263
Total liabilities	776,165	781,076	(121,096)	659,980
Stockholders' equity				
Common stock	2,502	2,548	—	2,548
Additional paid-in capital	392,896	408,667	—	408,667
Accumulated other comprehensive loss	(29,414)	(23,086)	(841)	(23,927)
Accumulated deficit[2]	(218,553)	(160,161)	107,492	(52,669)
Total stockholders' equity	$ 147,431	$ 227,968	$ 106,651	$ 334,619
Total liabilities and stockholders' equity	$ 923,596	$ 1,009,044	$ (14,445)	$ 994,599

(1) As of December 31, 2019, contract cost assets of $2,690 were included in *Prepaid and other current assets* and $5,235 were included in *Other assets*.

(2) Included in *Accumulated deficit* on the opening balance of January 1, 2019 is $107,822, net of tax, for the cumulative effect adjustment of adopting Topics 606 and 340-40.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 2: Recent Accounting Pronouncements (Continued)

	Year Ended December 31,			
	2018	2019		
	As reported Topic 605	As adjusted Topic 605	Impact from the adoption of Topics 606 and 340-40	As reported Topic 606
Revenues:				
Subscriptions	$ 557,421	$ 613,925	$ (5,625)	$ 608,300
Perpetual licenses	61,065	52,519	7,174	59,693
Subscriptions and licenses	618,486	666,444	1,549	667,993
Services	73,224	68,405	256	68,661
Total revenues	691,710	734,849	1,805	736,654
Cost of revenues:				
Cost of subscriptions and licenses	55,113	71,439	139	71,578
Cost of services	76,211	72,572	—	72,572
Total cost of revenues	131,324	144,011	139	144,150
Gross profit	560,386	590,838	1,666	592,504
Operating expenses:				
Research and development	175,032	183,552	—	183,552
Selling and marketing	160,635	155,274	20	155,294
General and administrative	89,328	97,580	—	97,580
Amortization of purchased intangibles	14,000	14,213	—	14,213
Total operating expenses	438,995	450,619	20	450,639
Income from operations	121,391	140,219	1,646	141,865
Interest expense, net	(8,765)	(8,199)	—	(8,199)
Other income (expense), net	236	(5,557)	—	(5,557)
Income before income taxes	112,862	126,463	1,646	128,109
Provision for income taxes	(29,250)	21,762	1,976	23,738
Equity in loss of joint venture, net of tax	—	1,275	—	1,275
Net income	$ 142,112	$ 103,426	$ (330)	$ 103,096

Note 3: Revenue from Contracts with Customers

On January 1, 2019, the Company adopted Topic 606 using the modified retrospective method, under which the cumulative effect of initially applying Topic 606 of $125,464 ($101,489, net of tax) was recorded as a reduction to the opening balance of *Accumulated deficit*. The impact from adoption was primarily derived from the timing of revenue recognition for perpetual licenses and the accounting for certain of the Company's subscription arrangements that include term-based software licenses bundled with support. Under prior guidance, revenue for perpetual licenses was recognized over a three-year period, while revenue attributable to the term-based software licenses was recognized ratably over the term. Under Topic 606, both perpetual license and term-based software license revenue will be recognized up-front upon delivery of the software license. The comparative information has not been adjusted and continues to be reported under Topic 605. Refer to Note 2, Recent Accounting Pronouncements, for a qualitative and quantitative discussion of the adoption impact.

Topic 606 establishes a principle for recognizing revenue upon the transfer of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 3: Revenue from Contracts with Customers (Continued)

Nature of Products and Services

The Company generates revenues from subscriptions, perpetual licenses, and professional services.

Subscriptions

SELECT subscriptions—A prepaid annual recurring subscription that accounts can elect to add to a new or previously purchased perpetual license. SELECT provides accounts with benefits, including upgrades, comprehensive technical support, pooled licensing benefits, annual portfolio balancing exchange rights, learning benefits, certain Azure-based collaboration services, mobility advantages, and access to other available benefits. Under Topic 606, SELECT subscription revenues are recognized as distinct performance obligations are satisfied. The performance obligations within the SELECT offering, outside of the portfolio balancing exchange right, are concurrently delivered and have the same pattern of recognition. These performance obligations are accounted for ratably over the term as a single performance obligation. Under Topic 605, SELECT subscriptions revenue was recognized on a ratable basis, over the subscription term.

Enterprise subscriptions—The Company also provides Enterprise subscription offerings which provide its largest accounts with complete and unlimited global access to the Company's comprehensive portfolio of solutions. Enterprise License Subscriptions ("ELS") provide access for a prepaid fee, which is based on the account's usage of software in the preceding year, effectively a fee-certain consumption-based arrangement. ELS contain a term license component, SELECT maintenance and support, and performance consulting days. The SELECT maintenance and support benefits under ELS do not include a portfolio balancing performance obligation. Revenue is allocated to the various performance obligations based on their respective standalone selling price ("SSP"). Revenue allocated to the term license component is recognized upon delivery at the start of the subscription term while revenues for the SELECT maintenance and support and the performance consulting days are recognized as delivered over the subscription term. Billings in advance are recorded as *Deferred revenues* in the consolidated balance sheets. Under Topic 605, ELS revenue was recognized on a ratable basis, over the subscription term.

E365 subscriptions ("E365"), which were introduced during the fourth quarter of 2018, provide unrestricted access to the Company's comprehensive software portfolio, similar to ELS, however are charged based upon daily usage. The daily usage fee includes a term license component, SELECT maintenance and support, and Success Plan services, which are designed to achieve business outcomes through more efficient and effective use of our software. E365 revenues are recognized based upon usage incurred by the account under both Topics 606 and 605. Usage is defined as distinct user access on a daily basis. The term of E365 subscriptions aligns with calendar quarters and revenue is recognized based on actual usage.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 3: Revenue from Contracts with Customers (Continued)

Term license subscriptions—The Company provides annual, quarterly, and monthly term licenses for its software products. Term license subscriptions contain a term license component and SELECT maintenance and support. Revenue is allocated to the various performance obligations based on their SSP. Annual term licenses ("ATL") are generally prepaid annually for named user access to specific products. Quarterly term license ("QTL") subscriptions allow accounts to pay quarterly in arrears for license usage that is beyond their prepaid subscriptions. Monthly term license ("MTL") subscriptions are identical to QTL subscriptions, except for the term of the license, and the manner in which they are monetized. MTL subscriptions require a Cloud Services Subscription ("CSS"), which is described below. For ATL, revenue allocated to the term license component is recognized upon delivery at the start of the subscription term while revenue for the SELECT maintenance and support is recognized as delivered over the subscription term. Billings in advance are recorded as *Deferred revenues* in the consolidated balance sheets. Under Topic 605, ATL revenues were recognized on a ratable basis, over the subscription term. For usage-based QTL and MTL subscriptions, revenues are recognized based upon usage incurred by the account under both Topics 606 and 605. Usage is defined as peak usage over the respective terms. The terms of QTL and MTL subscriptions align with calendar quarters and calendar months, respectively, and revenue is recognized based on actual usage.

Visas and Passports are quarterly or annual term licenses enabling users to access specific project or enterprise information and entitle certain functionality of the Company's ProjectWise and AssetWise systems. The Company's standard offerings are usage based with monetization through the Company's CSS program.

CSS is a program designed to streamline the procurement, administration, and payment process. The program requires an account to estimate their annual usage for CSS eligible offerings and deposit funds in advance. Actual consumption is monitored and invoiced against the deposit on a calendar quarter basis. CSS balances not utilized for eligible products or services may roll over to future periods or are refundable. Paid and unconsumed CSS balances are recorded in *Accruals and other current liabilities* in the consolidated balance sheets. Software and services consumed under CSS are recognized pursuant to the applicable revenue recognition guidance for the respective software or service and classified as subscriptions or services based on their respective nature.

Perpetual licenses

Perpetual licenses may be sold with or without attaching a SELECT subscription. Historically, attachment and retention of the SELECT subscription has been high given the benefits of the SELECT subscription. Perpetual license revenue is recognized upon delivery of the license to the user under Topic 606. Under Topic 605, the Company recognized perpetual licenses revenue ratably over a three-year term due to the portfolio balancing feature users obtain through their SELECT subscriptions.

Services

The Company provides professional services including training, implementation, configuration, customization, and strategic consulting services. The Company performs projects on both a time and materials and a fixed fee basis. The Company's recent and preferred contractual structures for delivering professional services include (i) delivery of the services in the form of subscription-like, packaged offerings which are annually recurring in nature, and (ii) delivery of the Company's growing portfolio of Success Plans in standard offerings which offer a level of subscription service over and above the standard technical support offered to all accounts as part of their SELECT or Enterprise agreement. Revenues are recognized as services are performed under both Topic 606 and 605.

The Company primarily utilizes its direct internal sales force and also has arrangements through independent channel partners to promote and sell Bentley products and subscriptions to end-users. Channel partners are authorized to promote the sale of an authorized set of Bentley products and subscriptions within an authorized geography under a Channel Partner Agreement.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 3: Revenue from Contracts with Customers (Continued)

Significant Judgments and Estimates

The Company's contracts with customers may include promises to transfer licenses (perpetual or term-based), maintenance, and services to a user. Judgment is required to determine if the promises are separate performance obligations, and if so, the allocation of the transaction price to each performance obligation. When an arrangement includes multiple performance obligations which are concurrently delivered and have the same pattern of transfer to the customer, the Company accounts for those performance obligations as a single performance obligation. For contracts with more than one performance obligation, the transaction price is allocated among the performance obligations in an amount that depicts the relative SSP of each obligation. Judgment is required to determine the SSP for each distinct performance obligation. In instances where SSP is not directly observable, such as when the Company does not sell the product or service separately, the Company determines the SSP using information that may include market conditions and other observable inputs. The Company uses a range of amounts to estimate SSP when it sells each of the products and services separately and needs to determine whether there is a discount that should be allocated based on the relative SSP of the various products and services.

The Company's SELECT agreement provides users with perpetual licenses a right to exchange software for other eligible perpetual licenses on an annual basis upon renewal. The Company refers to this option as portfolio balancing and concluded that the portfolio balancing feature represents a material right resulting in the deferral of the associated revenue. Judgment is required to estimate the percentage of users who may elect to portfolio balance and considers inputs such as historical user elections. This feature is available once per term and must be exercised prior to the respective renewal term. The Company recognizes the associated revenue upon election or when the portfolio balancing right expires. This right is included in the initial and subsequent renewal terms and the Company reestablishes the revenue deferral for the material right upon the beginning of the renewal term. As of December 31, 2019, the Company has deferred $18,060 related to portfolio balancing exchange rights which is included in *Deferred revenues* on the consolidated balance sheet.

Contract Assets and Contract Liabilities

	January 1, 2019	December 31, 2019
Contract assets	$ 173	$ 644
Deferred revenues	212,529	213,145

As of December 31, 2019, the Company's contract assets relate to performance obligations completed in advance of the right to invoice and are included in *Prepaid and other current assets*. Contract assets were not impaired as of December 31, 2019.

Deferred revenues consist of billings made or payments received in advance of revenue recognition from subscriptions, SELECT, and professional services. The timing of revenue recognition may differ from the timing of billings to users.

During the year ended December 31, 2019, $202,354 of revenue that was included in the January 1, 2019 deferred revenue opening balance was recognized. There were additional deferrals of $202,806, which were primarily related to new billings.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 3: Revenue from Contracts with Customers (Continued)

Remaining Performance Obligations

The Company's contracts with customers include amounts allocated to performance obligations that will be satisfied at a later date. As of December 31, 2019, amounts allocated to these remaining performance obligations are $213,145, of which the Company expects to recognize 96.2% over the next 12 months with the remaining amount thereafter.

Disaggregation of Revenues

The following table details revenues:

	Year Ended December 31,		
	2018	2019	
	Topic 605	Topic 605	Topic 606
Revenues:			
Subscriptions:			
SELECT subscription revenues	$ 273,745	$ 267,340	$ 267,249
Enterprise license subscriptions	182,816	196,081	184,833
Term license subscriptions	100,860	150,504	156,218
Subscriptions	557,421	613,925	608,300
Perpetual licenses:			
Perpetual licenses	61,065	52,519	59,693
Subscriptions and licenses	618,486	666,444	667,993
Services:			
Professional services (recurring)	25,981	22,974	22,797
Professional services (all other)	47,243	45,431	45,864
Services	73,224	68,405	68,661
Total revenues	$ 691,710	$ 734,849	$ 736,654

The Company recognizes perpetual licenses and the term license component of subscriptions as revenue when either the licenses are delivered or at the start of the subscription term. For the year ended December 31, 2019, the Company recognized $311,689 of license related revenues, of which $251,996 was attributable to the term license component of the Company's subscription based commercial offerings recorded in Subscriptions.

Under Topic 606, the Company derived 8% of its total revenues through channel partners for the year ended December 31, 2019.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 3: Revenue from Contracts with Customers (Continued)

Revenue to external customers is attributed to individual countries based upon the location of the customer.

	Year Ended December 31,		
	2018	2019	
	Topic 605	Topic 605	Topic 606
Revenues:			
Americas[1]	$ 328,749	$ 360,934	$ 356,331
Europe, the Middle East, and Africa[2]	231,486	235,254	236,602
Asia Pacific	131,475	138,661	143,721
Total Revenues	$ 691,710	$ 734,849	$ 736,654

(1) Americas includes the United States, Canada, and Latin America (including the Caribbean). Revenue attributable to the United States totaled $277,706 (Topic 605) for the year ended December 31, 2018 and $307,259 (Topic 605) and $306,493 (Topic 606) for the year ended December 31, 2019.

(2) Revenue attributable to the United Kingdom totaled $59,086 (Topic 605) for the year ended December 31, 2018 and $59,524 (Topic 605) and $57,321 (Topic 606) for the year ended December 31, 2019.

Adoption of the standards had no impact to net cash provided by or used in operating, financing, or investing activities on the Company's consolidated statement of cash flows.

Note 4: Acquisitions

During the years ended December 31, 2018 and 2019, the Company completed a number of acquisitions, none of which were material, individually or in the aggregate, to the Company's consolidated statements of operations. The aggregate details of the Company's acquisition activity are as follows:

	Acquisitions Completed in Year Ended December 31,	
	2018	2019
Number of acquisitions	7	4
Cash paid at closing	$ 143,038	$ 36,577
Cash acquired	(7,774)	(2,523)
Net cash paid	$ 135,264	$ 34,054

As of December 31, 2018, the fair value of the contingent consideration related to acquisitions totaled $4,316, of which $2,390 is included in *Accruals and other current liabilities* and $1,926 is included in *Other liabilities* on the consolidated balance sheet.

As of December 31, 2019, the fair value of the contingent consideration related to acquisitions totaled $6,599, of which $5,100 is included in *Accruals and other current liabilities* and $1,499 is included in *Other liabilities* on the consolidated balance sheet.

One of the 2018 acquisitions required the Company to pay former shareholders a revenue based earn-out contingent on meeting certain 2018 revenue targets. As of December 31, 2018, such revenue targets were met and as a consequence $8,516 was reclassified to non-contingent consideration from acquisitions within *Accruals and other current liabilities*. The remaining contingent consideration as of December 31, 2018 was payable to former shareholders across 2017 and 2018 acquisitions if certain acquisition related key employees remained employed with the Company through certain periods.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 4: Acquisitions (Continued)

As of December 31, 2018 and 2019, total current deferred payment obligations including contingent consideration for all acquisitions were $11,019 and $5,999, respectively and are included in *Accruals and other current liabilities* on the consolidated balance sheet.

As of December 31, 2018 and 2019, total long-term deferred payment obligations including contingent consideration for all acquisitions were $2,826 and $1,499, respectively and are included in *Other liabilities* on the consolidated balance sheets.

The operating results of the acquired businesses are included in the Company's consolidated financial statements from the closing date of each respective acquisition. The purchase price for each acquisition has been allocated to the net tangible and intangible assets and liabilities based on their estimated fair values at the acquisition date. Independent valuations are obtained to support purchase price allocations when deemed appropriate.

In connection with the purchase price allocations related to the Company's acquisitions, the Company has estimated the fair values of the support obligations assumed relative to acquired deferred revenue. The estimated fair values of the support obligations assumed were determined using a cost-build-up approach. The cost-build-up approach determines fair value by estimating the costs related to fulfilling the obligations plus a normal profit margin. For accounting purposes, the sum of the costs and operating profit approximates the amount that the Company would be required to pay a third party to assume the support obligations. These fair value adjustments reduce the revenues recognized over the remaining support contract term of the Company's acquired contracts. During the years ended December 31, 2018 and 2019, the fair value adjustments to reduce revenue were $2,469 and $553, respectively.

The purchase accounting for three of our acquisitions, which were completed during the year ended December 31, 2019, is not yet finalized. Identifiable assets acquired and liabilities assumed were provisionally recorded at their estimated fair values on the acquisition date. The initial accounting for these business combinations is not complete because the evaluation necessary to assess the fair values of certain net assets acquired is still in process. The provisional amounts are subject to revision until the evaluations are completed to the extent that additional information is obtained about the facts and circumstances that existed as of the acquisition date. The allocation of the purchase price may be modified from the date of the acquisition as more information is obtained about the fair values of assets acquired and liabilities assumed, however such measurement period cannot exceed one year.

Acquisition and integration costs are expensed as incurred. During the years ended December 31, 2018 and 2019, the Company incurred acquisition and integration costs of $1,361 and $950, respectively, which include costs related to legal, accounting, valuation, general administrative, and other consulting fees. Such costs are recorded in *General and administrative* in the Company's consolidated statements of operations.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 4: Acquisitions (Continued)

The following summarizes the fair values of the assets acquired and liabilities assumed as well as the weighted average useful lives assigned to acquired intangible assets at the respective date of each acquisition (including contingent consideration):

	Acquisitions Completed in Year Ended December 31,	
	2018	2019
Consideration:		
Cash paid at closing	$ 143,038	$ 36,577
Contingent consideration	13,456	4,498
Deferred payment obligations to sellers	690	—
Total consideration	$ 157,184	$ 41,075
Assets acquired and liabilities assumed:		
Cash	$ 7,774	$ 2,523
Prepaid and other current assets	4,790	1,782
Property and equipment	340	411
Other assets	—	84
Customer relationship asset (weighted average useful life of 5 and 7 years, respectively)	27,294	6,534
Software and technology (weighted average useful life of 3 years)	9,332	2,423
In-process research and development	1,366	—
Non-compete agreement (useful life of 5 years)	—	150
Trademarks (weighted average useful life of 7 and 5 years)	2,090	1,431
Total identifiable assets acquired excluding goodwill	52,986	15,338
Deferred tax liability	(8,917)	(1,869)
Other current liabilities	(3,848)	(3,538)
Deferred revenues	(6,181)	(2,897)
Total liabilities assumed	(18,946)	(8,304)
Net identifiable assets acquired excluding goodwill	34,040	7,034
Goodwill	123,144	34,041
Net assets acquired	$ 157,184	$ 41,075

The fair values of the working capital, other assets (liabilities), and property and equipment approximated their respective carrying values as of the acquisition date.

As discussed above, the fair values of deferred revenues were determined using the cost-build-up approach.

The fair values of the intangible assets were primarily determined using the income approach. When applying the income approach, indications of fair values were developed by discounting future net cash flows to their present values at market-based rates of return. The cash flows were based on estimates used to price the acquisitions and the discount rates applied were benchmarked with reference to the implied rate of return from the Company’s pricing model and the weighted average cost of capital.

Goodwill recorded in connection with the acquisition was attributable to synergies expected to arise from cost saving opportunities as well as future expected cash flows. Of the goodwill recorded, $6,501 is expected to be deductible for tax purposes.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 5: Property and Equipment, Net

Property and equipment, net consist of the following at December 31, 2018 and 2019:

	As of December 31,	
	2018	2019
Land	$ 2,811	$ 2,811
Building and improvements	30,585	31,619
Computer equipment and software	46,938	47,472
Furniture, fixtures, and equipment	11,595	12,593
Aircraft	3,910	3,910
Other	61	79
Property and equipment, at cost	95,900	98,484
Less accumulated depreciation	(66,507)	(68,852)
Total property and equipment, net	$ 29,393	$ 29,632

Depreciation expense for the years ended December 31, 2018 and 2019 was $9,300 and $9,813, respectively.

Note 6: Goodwill and Other Intangible Assets

The changes in the carrying amount of goodwill for the years ended December 31, 2018 and 2019 are as follows:

Balance, December 31, 2017	$ 336,982
Acquisitions	123,144
Foreign currency translation adjustments	(13,808)
Balance, December 31, 2018	446,318
Acquisitions	34,041
Foreign currency translation adjustments	(321)
Other adjustments	27
Balance, December 31, 2019	$ 480,065

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 6: Goodwill and Other Intangible Assets (Continued)

Details of intangible assets other than goodwill as of December 31, 2018 and 2019 are as follows:

		As of December 31, 2018			As of December 31, 2019		
	Estimated Useful Life	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Intangible assets subject to amortization							
Software and technology	3 years	$ 66,251	$ (57,937)	$ 8,314	$ 66,063	$ (58,866)	$ 7,197
Customer relationships	3 - 10 years	86,364	(52,753)	33,611	88,904	(59,744)	29,160
Trademarks	3 - 10 years	20,799	(8,952)	11,847	22,278	(12,461)	9,817
Non-compete agreements	5 years	—	—	—	150	(11)	139
		173,414	(119,642)	53,772	177,395	(131,082)	46,313
Intangible assets not subject to amortization							
In-process research and development		229	—	229	—	—	—
Total intangible assets		$ 173,643	$ (119,642)	$ 54,001	$ 177,395	$ (131,082)	$ 46,313

The aggregate amortization expense for purchased intangible assets with finite lives recorded for the years ended December 31, 2018 and 2019 was reflected in our consolidated statements of operations as follows:

	Year Ended December 31,	
	2018	2019
Cost of subscriptions and licenses	$ 2,840	$ 3,795
Amortization of purchased intangibles	14,000	14,213
Total amortization expense	$ 16,840	$ 18,008

Amortization expense for the years following December 31, 2019 are estimated as follows:

2020	$ 17,422
2021	11,963
2022	8,543
2023	3,798
2024	2,058
Thereafter	2,529
	$ 46,313

Note 7: Investment in Joint Venture

In September 2019, the Company and Topcon Positioning Systems, Inc. formed Digital Construction Works, Inc. (“DCW”), a joint venture which operates as a digital integrator of software and cloud services for the construction industry. DCW’s focus is to transform the construction industry from its legacy document-centric paradigm by simplifying and enabling digital automated workflows and processes, technology integration, and digital twinning services for infrastructure.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 7: Investment in Joint Venture (Continued)

The Company and Topcon each have a 50% ownership in DCW and as such, the Company applies the equity method of accounting for its investment in DCW. Under the equity method, the Company recorded its initial investment in the joint venture at cost and subsequently adjusts that investment by the Company's proportional share of income or losses in DCW. As of December 31, 2019, the aggregate carrying amount of the Company's investment in the joint venture was $1,725. The Company tests this investment for impairment whenever circumstances indicate that the carrying value of the investment may not be recoverable.

Pursuant to ASC 850-10-20, *Related Party Disclosures*, the Company has determined that DCW is a related party. For the year ended December 31, 2019, transactions between the Company and DCW were immaterial to the Company's consolidated financial statements.

Note 8: Accruals and Other Current Liabilities

Accruals and other current liabilities consist of the following:

	As of December 31,	
	2018	2019
Cloud Services Subscription deposits	$ 25,541	$ 54,688
Accrued benefits	25,863	33,184
Accrued compensation	30,484	31,537
Due to customers	8,467	8,945
Contingent consideration from acquisitions	2,390	5,100
Sales taxes payable	3,467	5,287
Accrued professional fees	2,347	4,382
Accrued acquisition stay bonuses	1,650	4,143
Accrued hosting costs	6,740	2,215
Accrued facility costs	2,269	2,168
Accrued rent	2,574	1,909
Accrued severance and realignment costs	6,555	1,688
Non-contingent consideration from acquisitions	8,629	900
Other accrued and current liabilities	9,723	11,371
Total accruals and other current liabilities	$ 136,699	$ 167,517

Note 9: Long-Term Debt

Long-term debt consists of the following at December 31, 2018 and 2019:

	As of December 31,	
	2018	2019
Bank credit facility:		
Senior secured revolver	$ 258,750	$ 233,750
Total long-term debt	$ 258,750	$ 233,750

Bank Credit Facility—On December 19, 2017, the Company entered into an amended and restated credit agreement (the "Credit Facility"), which matures on December 18, 2022. Upon entry into the Credit Facility, the Company obtained a $500,000 senior secured revolving facility and refinanced all indebtedness outstanding under its prior facility.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 9: Long-Term Debt (Continued)

In addition to the revolving line of credit, the Credit Facility also provides up to $50,000 of letters of credit and other incremental borrowings subject to availability, including a $50,000 multi-currency swing-line sub-facility and a $100,000 incremental "accordion" sub-facility. The Company had $631 and $546 of letters of credit and surety bonds outstanding as of December 31, 2018 and 2019, respectively. As of December 31, 2018 and 2019, the Company had $240,619 and $265,704 available under the Credit Facility.

Under the Credit Facility, the Company may make either Euro currency or non-Euro currency interest rate elections. Interest on the Euro currency borrowings is at the one-month London Interbank Offered Rate ("LIBOR") plus a spread ranging from 100 basis points ("bps") to 225 bps as determined by the Company's net leverage ratio. Under non-Euro currency elections, Credit Facility borrowings bear a base interest rate of the greater of (i) the prime rate, (ii) the overnight bank funding effective rate plus 50 bps, or (iii) LIBOR plus 100 bps, plus a spread ranging from 0 bps to 125 bps as determined by the Company's leverage ratio. In addition, a commitment fee for the unused Credit Facility ranges from 15 bps to 30 bps as determined by the Company's net leverage ratio.

Borrowings under the Credit Facility are guaranteed by all of the Company's first tier domestic subsidiaries and are secured by a first priority security interest in substantially all of the Company's and the guarantors' U.S. assets and 65% of the stock of their directly owned foreign subsidiaries. The Credit Facility contains both affirmative and negative covenants, including maximum leverage ratios. At December 31, 2018 and 2019, the Company was in compliance with all covenants in its debt agreements.

For the years ended December 31, 2018 and 2019, the weighted average interest rate under the Credit Facility was 3.28% and 3.47%, respectively. There was no accrued interest or fees as of December 31, 2019. As of December 31, 2018, accrued interest and fees was $31. Interest expense was $8,800 and $8,971 for the years ended December 31, 2018 and 2019, respectively.

In addition, interest expense includes amortization of deferred financing costs of $552 and $553 for the years ended December 31, 2018 and 2019.

Other—Interest expense related to other obligations was $255 and $207 for the years ended December 31, 2018 and 2019, respectively.

Note 10: Executive Bonus Plan

The Company has an incentive compensation program under which up to 20% of the Company's adjusted operating profits, as defined in the plan agreement and before deductions for such plan payments, may be paid to plan participants in the form of cash bonuses, subject to approval by the Company's board of directors and certain limitations imposed by the Company's Credit Facility. The plan permits the deduction of certain holdback amounts from the plan's pool, from which amounts can then be allocated to fund items including equity and/or cash incentive compensation for non-plan participants and participant charitable contributions. During the years ended December 31, 2018 and 2019, the incentive compensation, including cash payments and deferred compensation to plan participants, recognized under this plan (net of all applicable holdbacks) was $27,641 and $31,061, respectively.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 11: Retirement Plans

The Company maintains a qualified 401(k) profit sharing plan (the Plan) for the benefit of substantially all U.S.-based full-time colleagues. The Company may make discretionary profit-sharing contributions to the Plan up to a maximum of 5% of "qualified cash compensation" for each eligible participating colleague. Non-discretionary (matching) 401(k) contributions to the Plan, for full-time U.S. colleagues, were $3,337 and $3,311, for the years ended December 31, 2018 and 2019, respectively. The Company also maintains various retirement benefit plans (primarily defined contribution plans) for colleagues of its international subsidiaries. Contributions to these plans were $7,613 and $8,070, for the years ended December 31, 2018 and 2019, respectively.

The Company also has a nonqualified deferred compensation plan (the "DCP"), under which certain officers and key colleagues may elect to defer the receipt of all or a portion of their bonus compensation. In addition, the Company may make discretionary awards under the DCP on behalf of the participants. Elective participant deferrals and discretionary Company awards are required to be in the form of phantom shares of the Company's Class B Non-Voting Common Stock ("Class B Common Stock"), which are valued for tax and accounting purposes in the same manner as actual shares of Class B Common Stock. All DCP distributions to current colleague participants are made in the form of shares of Class B Common Stock. The Company's discretionary awards made prior to January 1, 2016 vest 20% on the date of grant and 20% on each of the four subsequent anniversary dates. The Company's discretionary awards made on or after January 1, 2016 are 100% vested at the time of grant. No discretionary contributions were made to the DCP during the years ended December 31, 2018 or 2019.

Amounts in the DCP attributable to certain non-colleague participants are settled in cash and are classified as liabilities which are marked to market at the end of each reporting period. The total liability related to the DCP for non-colleague participants was $2,275 and $2,544 as of December 31, 2018 and 2019, respectively.

The table below shows compensation (income) expense related to the DCP recorded during the years ended December 31, 2018 and 2019:

	Year Ended December 31,	
	2018	2019
DCP related compensation (income) expense	$ (75)	$ 408

Note 12: Common Stock

Authorized Common Shares—The Company amended and restated its Certificate of Incorporation on April 20, 2018 to authorize 320,000,000 shares of Class A Voting Common Stock ("Class A Common Stock") and 600,000,000 shares of Class B Common Stock. As of December 31, 2018 and 2019, outstanding shares of Class A Common Stock totaled 11,601,757 and outstanding shares of Class B Common Stock totaled 238,681,756 and 243,241,192, respectively.

Sales, Repurchases, and Issuances of Company Capital Stock

In September 2016, the Company entered into a Class B Common Stock Purchase Agreement with a strategic investor (the "Common Stock Purchase Agreement"), pursuant to which the investor could acquire in a series of transactions up to $200,000 of the Company's Class B Common Stock at the then prevailing fair market value, either directly from selling stockholders, in which case the Company would act as pass through agent, or by funding the Company's repurchase and subsequent sale to the investor of shares acquired by the Company from existing Company stockholders.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 12: Common Stock (Continued)

The Common Stock Purchase Agreement grants to the strategic investor certain informational and protective rights, including, for so long as the Company remains party to a long-term strategic collaboration agreement with the investor, a pre-initial public offering ("IPO") right of first refusal on any sale of the Company and a post-IPO right to participate in any sale process the Company may undertake.

On April 23, 2018, the Company entered into an amendment to the Common Stock Purchase Agreement, which (i) increased the maximum purchase amount from $200,000 to $250,000 thereunder, (ii) extended the expiration of the agreement from 2026 to 2030, and (iii) granted the Company the right to retain a portion of the shares that would otherwise be sold to the investor.

During the year ended December 31, 2018, the investor acquired 5,151,019 shares of Class B Common Stock, with 2,139,466 of such shares having been repurchased by the Company and re-sold to the investor for consideration of $16,220 and 3,011,553 shares were acquired directly by the investor for consideration of $22,792.

During the year ended December 31, 2019, the investor purchased 791,873 shares under the Common Stock Purchase Agreement, with 622,873 of such shares having been repurchased by the Company and re-sold to the investor for consideration of $4,510 and 169,000 shares acquired directly by the investor for consideration of $1,224.

During the year ended December 31, 2018, the Company issued net 2,812,998 shares of Class B Common Stock to colleagues who exercised their stock options. Of the total options exercised for 3,726,606 shares, 1,235,204 shares were issued for cash totaling $2,187, and the remaining options for 2,491,402 shares were exercised on a cashless basis, and accordingly, 913,608 shares were sold back to the Company to pay for the cost of the options as well as applicable income tax withholdings of $1,577. During 2018, the Company paid $8,571 for 1,131,928 shares sold back to the Company upon exercise of the Put and Call provisions under the amended option plan (see Note 14).

During the year ended December 31, 2019, the Company issued net 3,214,542 shares of Class B Common Stock to colleagues who exercised their stock options. Of the total options exercised for 4,731,158 shares, 1,273,271 shares were issued for cash totaling $3,627, and the remaining options for 3,457,887 shares were exercised on a cashless basis, and accordingly, 1,516,616 shares were sold back to the Company to pay for the cost of the options as well as applicable income tax withholdings of $2,324. During the year ended December 31, 2019, the Company paid $8,838 for 1,126,747 shares sold back to the Company upon exercise of the Put and Call provisions under the amended option plan (see Note 14).

During the years ended December 31, 2018 and December 31, 2019, the Company issued 2,332,585 and 2,322,983, respectively, of shares of Class B Common Stock to DCP participants for their distribution. The distribution in shares for the year ended December 31, 2018 totaled 3,340,904 of which 1,008,319 shares were sold back to the Company to pay for the cost of applicable income tax withholding of $6,861. The distribution in shares for the year ended December 31, 2019 totaled 3,082,607 shares of which 759,624 shares were sold back to the Company in the same period to pay for applicable income tax withholdings of $5,609.

During 2018 and 2019, the Company repurchased 465,979 and 318,203 shares from its profit sharing plan for $3,387 and $2,417, respectively.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 12: Common Stock (Continued)

Selected Terms of Class B Common Stock—Pursuant to the terms of the Company's amended and restated Certificate of Incorporation in effect for the periods reported, each share of Class B Common Stock has the same rights and privileges as each share of Class A Common Stock, except that the holders of outstanding shares of Class B Common Stock do not have any right to vote on, or consent with respect to, any matters to be voted on or consented to by the stockholders of the Company except as required by law, and the shares of Class B Common Stock are not included in determining the number of shares voting or entitled to vote on any such matters. Each outstanding share of Class B Common Stock may be converted into one share of Class A Common Stock upon the determination of the Company's board of directors. Additionally, absent a conversion by the board of directors, upon an IPO by the Company, each outstanding share of Class B Common Stock may be automatically converted into the class of common stock being offered.

Dividends—The Company declared cash dividends during the periods presented as follows:

	Dividend Per Share	Amount
2018:		
Fourth quarter	$ 0.020	$ 4,990
Third quarter	0.020	5,016
Second quarter	0.020	5,020
First quarter	0.020	4,979
Total	$ 0.080	$ 20,005
2019:		
Fourth quarter	$ 0.025	$ 6,367
Third quarter	0.025	6,380
Second quarter	0.025	6,375
First quarter	0.025	6,268
Total	$ 0.100	$ 25,390

Note 13: Accumulated Other Comprehensive Loss

Accumulated other comprehensive loss consists of the following:

	Foreign Currency Translation	Actuarial (Loss) Gain on Retirement Plan	Total
Balance, December 31, 2017	$ (17,847)	$ (693)	$ (18,540)
Other comprehensive income (loss), before taxes	(11,020)	208	(10,812)
Tax expense	—	(62)	(62)
Other comprehensive income (loss), net of taxes	(11,020)	146	(10,874)
Balance, December 31, 2018	(28,867)	(547)	(29,414)
Other comprehensive income (loss), before taxes	5,959	(675)	5,284
Tax expense	—	203	203
Other comprehensive income (loss), net of taxes	5,959	(472)	5,487
Balance, December 31, 2019	$ (22,908)	$ (1,019)	$ (23,927)

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 14: Equity Awards and Instruments

The Company has equity awards outstanding under its 2005 Stock Option Plan and 2015 Equity Incentive Plan. The 2015 Equity Incentive Plan provides for the granting of awards in the form of stock options, stock appreciation rights, dividend equivalent rights, restricted stock, restricted stock units, and stock grants. The 2005 Stock Option Plan expired in April 2015, and no further options may be granted thereunder. The 2015 Equity Incentive Plan, which has substantially similar terms to the 2005 Stock Option Plan as it relates to options, has 50,000,000 shares of Class B Common Stock reserved for issuance and terminates in November 2024.

The following is a summary of activity under these two stockholder-approved plans.

Stock Options—The Company has stock options outstanding under its 2005 Stock Option Plan and 2015 Equity Incentive Plan. Stock options generally vest ratably on each of the first four anniversaries of the grant date. Stock options granted under these plans include Put and Call provisions that allow colleagues who have exercised an option to sell all or part of their shares acquired upon such exercise to the Company at the fair market value at the time of the sale. The exercise period for the Put right begins on the second day after the six-month anniversary of the date the option was exercised and ends after an additional 30 days. The Call right provision allows the Company to purchase all or a part of the shares acquired by a colleague upon exercise of an option, at the fair market value at the time of such purchase. The Company may exercise the Call right at any time within seven months of the later of i) the optionee's termination of service with the Company, or ii) the optionee's (or his or her beneficiary's) exercise of such option after a termination of service.

The Company granted a total of 20,000 options on March 22, 2018, 5,096,000 options on May 29, 2018, and 10,000 options on September 6, 2018. The fair value of the awards was estimated on the date of grant using the Black-Scholes option pricing model. The grant date fair value of each option was $1.43, $1.46, and $1.96, respectively.

The Company granted a total of 4,816,000 options on March 22, 2019 and 10,000 options on May 15, 2019. The fair value of the awards was estimated on the date of grant using the Black-Scholes option pricing model. The grant date fair value of each option was $1.66 and $1.65, respectively.

Acquisition Options—In connection with an acquisition completed in March 2018, the Company issued to certain selling shareholder entities options to acquire an aggregate of up to 900,000 shares of Class B Common Stock. The options have a five-year term, vest on the fourth anniversary of the closing of the acquisition, and an initial exercise price of $6.805 per share. The exercise price of the options is subject to a cap and collar adjustment mechanism that automatically reduces (but not to less than $0.01) or increases the exercise price based on the difference between the exercise price and the fair market value of the Company's Class B Common Stock on the exercise date. The fair value of the awards was estimated on the date of grant using the Black-Scholes option pricing model. The grant date fair value of each option was $3.44. Any shares of Class B Common Stock acquired upon exercise of the options are generally entitled to the Put and Call rights summarized above under "Stock Options," and the options contain customary adjustment provisions in case of stock splits, stock dividends, or other corporate transactions (see Note 1 regarding the Dividend). As of December 31, 2019, all 900,000 options remain outstanding.

Stock Grants—Under the 2015 Equity Incentive Plan, the Company may grant unrestricted, fully vested shares of Class B Common Stock to eligible colleagues. Any such shares awarded have Put and Call rights similar to those described above with respect to stock options.

The Company did not grant fully vested shares of Class B Common Stock during 2018 or 2019.

Restricted Stock—Under the 2015 Equity Incentive Plan, the Company may grant both time and performance-based shares of restricted Class B Common Stock to eligible colleagues.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 14: Equity Awards and Instruments (Continued)

During the year ended December 31, 2018, the Company granted 512,616 shares of restricted stock, all of which were subject to performance-based vesting as determined by the achievement of business growth targets, which included growth in annual recurring revenues as well as actual bookings for perpetual licenses and non-recurring services. Annual performance targets were seasonalized and targets were set for quarterly and annual performance periods ending on December 31, 2018. These restricted shares carried dividend, but not voting rights. During the year ended December 31, 2018, the performance conditions to vesting were satisfied in respect of 451,784 of these shares, of which 76,375 shares were sold back to the Company to settle applicable income tax withholdings of $610. An additional 4,798 shares were sold back to the Company to settle applicable income tax withholdings of $27, related to performance shares that were vested in 2017 and delivered to participants in the year ended December 31, 2018. Additionally, during the year ended December 31, 2018, the Company granted 57,670 shares of restricted stock to a colleague. These restricted shares carry dividend but not voting rights, and are subject to a three-year service condition.

For the year ended December 31, 2019, the Company granted 493,840 shares of restricted stock, all of which were subject to performance-based vesting as determined by the achievement of business growth targets which included growth in annual recurring revenues as well as actual bookings for perpetual licenses and non-recurring services. Annual performance targets were seasonalized and targets were set for quarterly and annual performance periods ending on December 31, 2019. These restricted shares carried dividend, but not voting rights. During the year ended December 31, 2019, the performance conditions to vesting were satisfied in respect of 241,709 of these shares, of which 25,677 shares were sold back to the Company to settle applicable income tax withholdings of $192. An additional 23,343 shares were sold back to the Company to settle applicable income tax withholdings of $169, related to performance shares that were vested in 2018 and delivered to participants in the year ended December 31, 2019.

Restricted Stock Units—Under the 2015 Equity Incentive Plan, the Company may grant both time and performance based restricted stock units (“RSUs”) to eligible colleagues, which entitle the grantee to receive a specific number of shares of our Class B Common Stock upon vesting. These shares also have dividend equivalent rights.

No restricted stock units were granted during the years ended December 31, 2018 or 2019. In 2016, the Company granted RSUs subject to performance-based vesting as determined by the achievement of business growth targets which included growth in annual recurring revenues as well as actual bookings for perpetual licenses and non-recurring services. Annual performance targets were seasonalized and targets were set for quarterly and annual performance periods ending on December 31, 2016. Certain colleagues elected to defer delivery of such shares upon vesting. During the year ended December 31, 2019, 16,746 shares were delivered to colleagues and 5,398 shares were sold back to the Company to settle income tax withholdings of $39. As of December 31, 2018 and 2019, 70,687 and 54,771, respectively, of these RSUs remained outstanding.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 14: Equity Awards and Instruments (Continued)

The following is a summary of option activity under the Company's equity incentive plans:

	Options Outstanding	Exercise Price Per Share	
		Range	Weighted Average
Balance, December 31, 2017	18,629,380	$0.31 - $5.38	$ 3.72
Option activity:			
Granted	5,126,000	6.81 - 8.67	6.81
Exercised	(3,738,182)	0.31 - 5.38	1.89
Canceled	(502,750)	0.31 - 8.67	5.04
Balance, December 31, 2018	19,514,448	$1.79 - $6.81	$ 4.85
Option activity:			
Granted	4,826,000	7.24	7.24
Exercised	(4,731,158)	1.79 - 6.81	2.68
Canceled	(917,623)	1.79 - 7.24	5.82
Balance, December 31, 2019	18,691,667	$3.50 - $7.24	$ 5.97

As of December 31, 2018 and 2019, options and other equity awards available for future grants under the 2015 Equity Incentive Plan were 30,607,529 and 28,101,504, respectively.

The following is a summary of options outstanding and exercisable by exercise price as of December 31, 2019:

Exercise Prices	Number of Options Outstanding	Weighted Remaining Contractual Life (in years)	Exercisable
$3.50 - $4.00	1,978,256	0.39	1,978,256
4.01 - 6.00	7,450,203	1.78	4,469,866
$6.01 - $7.24	9,263,208	3.82	1,125,708
Total	18,691,667		7,573,830

During the years ended December 31, 2018 and 2019, the Company received cash proceeds of $2,179 and $3,612, respectively, related to the exercise of stock options.

The following is a summary of the intrinsic value of options outstanding and exercisable as of December 31, 2019:

	Number of Options	Weighted Average Exercise Price	Aggregate Intrinsic Value	Weighted Remaining Contractual Life (in years)
Options as of December 31, 2019				
Outstanding	18,691,667	$ 5.97	$ 91,028	2.6
Exercisable	7,573,830	$ 5.05	$ 43,852	1.6

Compensation expense is recognized on a straight-line basis over the vesting period during which colleagues perform related services. In the years ended December 31, 2018 and 2019, the Company recorded $4,808 and $6,342, respectively, of stock-based compensation expense related to stock options and $3,074 and $1,749, respectively, of compensation expense in connection with restricted stock. As of December 31, 2019, there was $11,911 of unrecognized compensation cost related to unvested stock options, which is expected to be recognized over a weighted average period of approximately 2.6 years.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 14: Equity Awards and Instruments (Continued)

The total intrinsic value of stock options exercised in the years ended December 31, 2018 and 2019 was $18,291 and $22,914, respectively.

The value of each stock option award was estimated on the date of grant using the Black-Scholes option pricing model. The determination of the fair value of share-based payment awards using an option pricing model is affected by the Company's stock price as well as assumptions regarding a number of complex and subjective variables. These variables include the Company's expected stock price volatility over the term of the awards, actual and projected colleague stock option exercise behaviors, risk-free interest rates, and expected dividends, which are estimated as follows:

Expected volatility. The expected stock price volatility for the Company's common stock was estimated by taking the average historic price volatility for industry peers based on daily price observations over a period equivalent to the expected term of the stock option grants. The Company intends to continue to consistently apply this process using the same or similar public companies until a sufficient amount of historical information regarding the volatility of the Company's own common stock share price becomes available.

Expected dividend yield. Prior to 2015, the Company had never declared or paid a cash dividend. Consequently, the Company used an expected dividend yield of zero for all option grants prior to 2015. In February 2015, the Company's board of directors established a policy to pay a quarterly dividend with the first such quarterly dividend paid in June 2015. While the Company intends to continue paying quarterly dividends, any future determination and amount per share will be subject to the discretion of the Company's board of directors and will be dependent on a number of factors, including the Company's operating results, capital requirements, restrictions under Delaware law, and overall financial conditions, as well as any other factors the Company's board of directors considers relevant.

Expected term. The expected term represents the period that the Company's stock-based awards are expected to be outstanding. The expected term is based on the simplified method, which represents the average period from vesting to the expiration of the award.

Risk-free rate. The risk-free interest rate is based on the yields of U.S. Treasury securities with maturities similar to the expected term of the options for each option group.

	Year Ended December 31,	
	2018	2019
Expected volatility	26.32% - 27.18%	29.57 %
Expected dividend yield	1.18 %	1.38 %
Risk-free interest rate	2.40 %	2.48 %
Expected term (in years)	3.75	3.75
Weighted average grant date fair value of options issued	$ 1.46	$ 1.66

The fair value of the common stock was determined by the board of directors at each award grant date based upon a variety of factors, including the results obtained from independent third-party valuations, the Company's financial position, and historical financial performance.

The Company paid $8,571 and $8,838 during the years ended December 31, 2018 and 2019, respectively, to stockholders who exercised their options and elected to sell the shares back to the Company after the mandatory six-month holding period.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 15: Income Taxes

The components of income before income taxes consist of the following:

	Year Ended December 31,	
	2018	2019
Domestic	$ 56,426	$ 61,691
International	56,436	66,418
Income before income taxes	$ 112,862	$ 128,109

The provision for income taxes consists of the following at December 31, 2018 and 2019:

	Year Ended December 31,	
	2018	2019
Current:		
Federal	$ 18,634	$ 7,696
State	873	2,486
Foreign	11,303	12,824
	30,810	23,006
Deferred:		
Federal	(7,655)	2,389
State	508	412
Foreign	(52,913)	(2,069)
	(60,060)	732
Provision for income taxes	$ (29,250)	$ 23,738

A reconciliation of the statutory federal income tax rate to the Company's effective income tax rate is as follows:

	Year Ended December 31,	
	2018	2019
Federal statutory rate	21.0 %	21.0 %
State income taxes, net of federal benefit	0.9	2.0
Permanent book/tax differences	(0.2)	0.2
Stock-based compensation	(2.4)	(2.3)
Tax credits	(3.3)	(3.6)
Foreign tax rate differential	(4.2)	(2.8)
Income tax reserves	(0.2)	0.9
Intercompany sales of certain operating assets	(41.1)	—
Net tax on foreign earnings (GILTI and FDII)	—	6.1
Other	(0.2)	(3.0)
U.S. tax reform	3.8	—
Effective income tax rate	(25.9)%	18.5 %

During 2018, the Company had intercompany sales of certain intangible operating assets between its foreign subsidiaries. The sales resulted in a 2018 net tax benefit of $46,369. The Company early adopted ASU 2016-16 as of January 1, 2018. Refer to Recently Adopted Accounting Guidance in Note 2.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 15: Income Taxes (Continued)

The following is a summary of the significant components of the Company's deferred tax assets and liabilities:

	As of December 31,	
	2018	2019
Deferred tax assets:		
Compensation accruals and DCP	$ 37,816	$ 36,195
NOL and credit carryforwards	10,013	11,544
Intangible assets including goodwill	15,199	10,371
Expenses not currently deductible	581	960
Allowance for accounts receivable	345	472
Other comprehensive income	195	394
Deferred revenue	8,185	—
Valuation allowance	(2,082)	(2,329)
Other	615	40
	70,867	57,647
Deferred tax liabilities:		
Deferred revenue	—	12,830
Depreciation	240	707
Other	31	1,302
	271	14,839
Net deferred tax assets	$ 70,596	$ 42,808

The federal net operating loss ("NOL") carryforwards with a future benefit of $424 expire in 2033 through 2036. The Canadian credit carryforwards of $801 have an indefinite carryforward. The Company's state NOL carryforwards and state credit carryforwards with a future benefit of $867 expire in 2020 through 2039. In addition, the Company has foreign NOL and credit carryforwards with a future benefit of $7,436 (net of a $2,016 valuation allowance), which predominately have indefinite expirations.

Some transactions can change the aggregate ownership of certain stockholders, which could cause a shift in the ownership of the Company, which pursuant to Internal Revenue Code ("IRC") Section 382 could then limit on an annual basis the Company's ability to utilize its U.S. federal NOL carryforwards (and possibly its state NOL carryforwards as well). If that occurred, the Company's NOL carryforwards would continue to be available to offset taxable income and tax liabilities in future years (until such NOL carryforwards are either used or expire) subject to any IRC Section 382 annual limitation.

The Company regularly assesses the need for a valuation allowance against its deferred tax assets by considering both positive and negative evidence related to whether it is more likely than not that the deferred tax assets will be realized. In evaluating the need for a valuation allowance, the Company considers a cumulative loss in recent years as a significant piece of negative evidence.

As of December 31, 2018 and 2019, the Company has recorded a valuation allowance against its net deferred tax assets of $2,082 and $2,329, respectively. The valuation allowance is principally related to the U.K. net operating losses for which the Company has determined that realization is not more likely than not.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 15: Income Taxes (Continued)

On December 22, 2017, the Act was enacted. U.S. tax reform, among other things, reduces the U.S. federal income tax rate to 21% from 35% in 2018, institutes a dividends received deduction for foreign earnings with a related tax for the deemed repatriation of unremitted foreign earnings, and creates a new U.S. minimum tax on earnings of foreign subsidiaries. The Company completed its accounting for the effects of the Act in 2018 and has included those effects in *Provision for income taxes* in the consolidated statement of operations. The Company will elect to pay the liability for the deemed repatriation of foreign earnings in installments, as specified by the Act.

Additionally, the Act requires certain Global Intangible Low-Taxed Income ("GILTI") earned by a controlled foreign corporation ("CFC") to be included in the gross income of the CFC's U.S. shareholder. The Company has elected the "period cost method" and treats taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred. The Act allows a U.S. corporation a deduction equal to a certain percentage of its foreign-derived intangible income ("FDII"). The Company estimated the impact of the GILTI tax and FDII deduction in determining its 2019 annual effective tax rate that is reflected in its provision for income taxes for the year ended December 31, 2019.

As of December 31, 2019, the Company has accumulated undistributed earnings generated by its foreign subsidiaries of approximately $408,582, of which $359,724 was subject to the one-time transition tax on foreign earnings required by the Act and the tax on GILTI. The Company intends to indefinitely reinvest these earnings, as well as future earnings from its foreign subsidiaries, in order to fund its international operations. In addition, the Company expects future U.S. cash generation will be sufficient to meet future U.S. cash needs. The Company has not provided for any additional outside basis difference inherent in its foreign subsidiaries, as these amounts continue to be indefinitely reinvested in foreign operations. Determining the amount of unrecognized deferred tax liability related to any additional outside basis difference in these entities is not practicable.

In accordance with the indefinite reversal criteria, the foreign currency translation adjustments recorded in other comprehensive loss related to the foreign currency translations have not been tax effected.

The following is a reconciliation of the total amounts of unrecognized tax benefits:

	Year Ended December 31,	
	2018	2019
Unrecognized tax benefit, beginning of year	$ 872	$ 638
Additions based on tax positions related to:		
Prior years	80	1,222
Reductions for tax positions related to prior years	(39)	(86)
Lapse of statute of limitations	(275)	(11)
Unrecognized tax benefit, end of year	$ 638	$ 1,763

The amount of unrecognized tax benefits at December 31, 2018 and 2019 was $638 and $1,763, respectively, of which $627 and $1,733 would impact the Company's effective tax rate if recognized. In the years ended December 31, 2018 and 2019, interest expense and penalties related to income taxes resulted in an income tax expense of $8 and $101, respectively. Interest expense and penalties are included in *Provision for income taxes* in the consolidated statements of operations. Accrued interest and penalties as of December 31, 2018 and 2019 totaled $252 and $362, respectively. The Company records the amount of uncertain taxes expected to be paid in the next 12 months as a current liability and records the remaining amount as a non-current liability in the accompanying consolidated balance sheets.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 15: Income Taxes (Continued)

The Company is subject to income tax in the United States as well as numerous state and foreign jurisdictions. The Company is currently under audit in the U.K. for years 2014 through 2017. The Company believes that an adequate provision has been made for any adjustment that may result from the tax examination. The Company's 2017 through 2019 tax years remain subject to examination by the Irish Revenue Commissioners for Irish tax purposes. The Company's 2017 through 2019 tax years remain subject to examination by the IRS. In addition, the Company is under audit in various other foreign taxing jurisdictions that are not material to the consolidated financial statements.

Note 16: Fair Value of Financial Instruments

Derivatives Not Designated As Hedging Instrument

In November 2018, the Company entered into an agreement with financial institutions to purchase call options to buy British pounds ("GBP") with a notional amount of 65,000 GBP at a strike price of $1.375. The call options were purchased at a premium of $645. These derivative instruments do not qualify for hedge accounting and as such, are not designated as hedges. The gains or losses from changes in the fair value of such derivative instruments are recognized in *Other income (expense), net* in the consolidated statements of operations. The fair value of the call options in the accompanying consolidated balance sheets was $158 and $0 as of December 31, 2018 and 2019, respectively. The call options had an expiration date of February 28, 2019.

Fair Value

The Company applies the provisions of ASC Topic 820, *Fair Value Measurement*, for fair value measurements of financial assets and financial liabilities and for fair value measurements of non-financial items that are recognized or disclosed at fair value in the consolidated financial statements.

The Company's financial instruments include cash equivalents, account receivables, certain other assets, accounts payable, accruals, other current liabilities, and long-term debt.

The carrying values of the Company's financial instruments excluding long-term debt approximate their fair value due to the short-term nature of those instruments. Additionally, as of December 31, 2018 and 2019, the fair value of the Company's long-term debt approximated its carrying value based upon discounted cash flows at current market rates for instruments with similar remaining terms. The Company considers these valuation inputs to be Level 2 inputs in the fair value hierarchy. Considerable judgment is necessary to interpret the market data and develop estimates of fair values. Accordingly, the estimates presented are not necessarily indicative of the amounts at which these instruments could be purchased, sold, or settled.

A financial asset or liability classification is determined based on the lowest level input that is significant to the fair value measurement. The fair value hierarchy consists of the following three levels:

Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument.

Level 3 inputs are unobservable inputs based on management's own assumptions used to measure assets and liabilities at fair value.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 16: Fair Value of Financial Instruments (Continued)

The following tables provide the financial assets and financial liabilities carried at fair value measured on a recurring basis:

December 31, 2018	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds[1]	$ 30,197	$ —	$ —	$ 30,197
Call options[2]	—	158	—	158
Total assets	$ 30,197	$ 158	$ —	$ 30,355
Liabilities:				
Acquisition contingent consideration[3]	$ —	$ —	$ 4,316	$ 4,316
Deferred compensation plan[4]	2,275	—	—	2,275
Total liabilities	$ 2,275	$ —	$ 4,316	$ 6,591

December 31, 2019	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds[1]	$ 70,000	$ —	$ —	$ 70,000
Total assets	$ 70,000	$ —	$ —	$ 70,000
Liabilities:				
Acquisition contingent consideration[3]	$ —	$ —	$ 6,599	$ 6,599
Deferred compensation plan[4]	2,544	—	—	2,544
Total liabilities	$ 2,544	$ —	$ 6,599	$ 9,143

(1) Included in *Cash and cash equivalents* in the accompanying consolidated balance sheets.

(2) Included in *Other assets* in the accompanying consolidated balance sheets.

(3) Included in *Accruals and other current liabilities* and *Other liabilities* in the accompanying consolidated balance sheets. Acquisition contingent consideration liability is measured at fair value and is based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. The valuation of contingent consideration uses assumptions the Company believes would be made by a market participant.

(4) Included in *Other liabilities*, except for current liabilities of $115 and $153 as of December 31, 2018 and 2019, respectively, which is included in *Accruals and other current liabilities* in the accompanying consolidated balance sheets.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 16: Fair Value of Financial Instruments (Continued)

The following table is a reconciliation of the changes in fair value of the Company's financial liabilities which have been classified as Level 3 in the fair value hierarchy for the years ended December 31, 2018 and 2019.

	Year Ended December 31,	
	2018	2019
Balance, beginning of year	$ 241	$ 4,316
Payments	(9)	(2,513)
Addition	13,206	4,498
Reclassification[(1)]	(8,516)	180
Change in fair value	167	62
Foreign currency translation adjustments	(773)	56
Balance, end of year	$ 4,316	$ 6,599

(1) One of the 2018 acquisitions requires the Company to pay former shareholders a revenue based earn-out contingent on meeting certain 2018 revenue targets. As of December 31, 2018, such revenue targets were met and as a consequence $8,516 was reclassified to non-contingent consideration from acquisitions within *Accruals and other current liabilities*.

The Company did not have any transfers between levels within the fair value hierarchy.

Note 17: Commitments and Contingencies

Purchase Commitment—In the normal course of business, the Company enters into various purchase commitments for goods and services. As of December 31, 2018, the non-cancellable future cash purchase commitment for services related to the provisioning of our software solutions was $15,377 through June 2020. As of December 31, 2019, such commitment was fully consumed.

Operating Leases—The Company leases certain facilities, cars, and equipment under operating leases having initial or remaining non-cancellable terms in excess of one year.

The future minimum lease payments for the years following December 31, 2019 are as follows:

2020	$ 15,886
2021	13,186
2022	10,385
2023	6,572
2024	3,216
Thereafter	2,771
	$ 52,016

Rent expense is recorded on straight-line basis over the life of the lease. During the years ended December 31, 2018 and 2019, total rent expense was $16,726 and $17,036, respectively.

Litigation—From time to time, the Company is involved in certain legal actions arising in the ordinary course of business. In management's opinion, based upon the advice of counsel, the outcome of such actions is not expected to have a material adverse effect on the Company's future financial position or results of operations.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 18: Geographic Data

Revenues by geographic area are presented as part of the discussion in Note 3. The following table presents the Company's long-lived assets, net of depreciation and amortization by geographic region. See Note 5 and Note 6.

	Year Ended December 31,	
	2018	2019
Long-lived assets:		
Americas[1]	$ 32,490	$ 34,758
Europe, the Middle East, and Africa	43,933	34,039
Asia/Pacific	6,971	7,148
Total long-lived assets	$ 83,394	$ 75,945

(1) Americas includes the United States, Canada, and Latin America (including the Caribbean).

Note 19: Interest Expense, Net

Interest expense, net is comprised of the following:

	Year Ended December 31,	
	2018	2019
Interest expense	$ (9,607)	$ (9,731)
Interest income	842	1,532
Total interest expense, net	$ (8,765)	$ (8,199)

Note 20: Other Income (Expense), Net

Other income (expense), net is comprised of the following:

	Year Ended December 31,	
	2018	2019
Foreign exchange loss[1]	$ (418)	$ (5,591)
Other income (expense), net[2]	654	34
Total other income (expense), net	$ 236	$ (5,557)

(1) Foreign exchange loss is primarily attributable to foreign currency translation losses derived primarily from U.S. Dollar denominated cash and cash equivalents, account receivables, and intercompany balances held by foreign subsidiaries. For the year ended December 31, 2018, the foreign exchange loss includes a loss of $487 relating to the remeasurement of a derivative instrument (see Note 16). In October 2018, the Company had intercompany sales of certain intangible operating assets between foreign subsidiaries, which resulted in significant U.S. dollar denominated finance transactions and balances between certain of its foreign subsidiaries. For the year ended December 31, 2019, such finance transactions resulted in unrealized foreign currency translation losses of $5,270.

(2) For the year ended December 31, 2018, other income (expense), net includes a gain of $707 relating to insurance proceeds received in excess of the net book value of the replaced assets.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 21: Realignment Costs

During 2015, the Company initiated a strategic realignment program in order to better serve the Company's users and to better align resources with the evolving needs of the business. The Company incurred total realignment costs of $6,778 and $(584) for the years ended December 31, 2018 and 2019, respectively. As of December 31, 2018 and 2019, accrued realignment costs totaled $6,437 and $491 and are included in *Accruals and other current liabilities* in the consolidated balance sheets.

The following table sets forth realignment activity during the years ended December 31, 2018 and 2019:

	Year Ended December 31,	
	2018	2019
Balance, beginning of year	$ 1,458	$ 6,437
Realignment costs	6,778	(584)
Payments	(1,640)	(5,326)
Adjustments[1]	(159)	(36)
Balance, end of year	$ 6,437	$ 491

(1) Adjustments includes foreign currency translation.

The following table sets forth the realignment costs by expense classification for the years ended December 31, 2018 and 2019:

	Year Ended December 31,	
	2018	2019
Cost of revenues:		
Cost of subscriptions and licenses	$ 256	$ (51)
Cost of services	845	(185)
Total cost of revenues	1,101	(236)
Operating expenses:		
Research and development	3,380	(171)
Selling and marketing	2,252	(263)
General and administrative	45	86
Total operating expenses	5,677	(348)
Total realignment costs	$ 6,778	$ (584)

Note 22: Earnings Per Share

Earnings per share ("EPS") of Class A and Class B Common Stock amounts are computed using the two-class method required for participating securities. The Company issues certain restricted stock awards determined to be participating securities because holders of such shares have non-forfeitable dividend rights in the event of the Company's declaration of a dividend for common shares.

Undistributed earnings allocated to participating securities are subtracted from net income in determining net income attributable to common stockholders. Basic EPS is computed by dividing net income attributable to common stockholders by the weighted-average number of shares of Class A and Class B Common Stock outstanding.

For the calculation of diluted EPS, net income attributable to common stockholders for basic EPS is adjusted by the effect of dilutive securities, including awards under the Company's equity compensation plans. Diluted EPS attributable to common stockholders is computed by dividing the resulting net income attributable to common stockholders by the weighted-average number of fully diluted common shares outstanding.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data)

Note 22: Earnings Per Share (Continued)

Except with respect to voting and conversion, the rights of the holders of the Company's Class A Common Stock and the Company's Class B Common Stock are identical. Each class of shares has the same rights to dividends and allocation of income (loss) and therefore, earnings per share would not differ under the two-class method. The details of basic and diluted EPS are as follows (in thousands, except per share amounts):

	Year Ended December 31,	
	2018	2019
Numerator:		
Net income	$ 142,112	$ 103,096
Less: Net income attributable to participating securities	(4)	(8)
Net income attributable to Class A and Class B common stockholders	$ 142,108	$ 103,088
Denominator:		
Denominator for basic net income per share—weighted average shares	285,805,096	284,625,642
Effect of dilutive securities:		
Stock options	6,819,400	9,171,065
Denominator for dilutive net income per share	292,624,496	293,796,707
Net income per share, basic	$ 0.50	$ 0.36
Net income per share, diluted	$ 0.49	$ 0.35

No shares were excluded from the computation of diluted net income per share attributable to common stockholders for the periods presented.

Note 23: Subsequent Events

In preparing the consolidated financial statements as of and for the years ended December 31, 2018 and 2019, the Company evaluated subsequent events for recognition and measurement through March 6, 2020, the date when the consolidated financial statements were issued.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Balance Sheets

(in thousands, except share and per share data) (unaudited)

	December 31, 2019	June 30, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 121,101	$ 125,516
Accounts receivable	211,775	169,778
Allowance for doubtful accounts	(7,274)	(7,272)
Prepaid income taxes	4,543	6,501
Prepaid and other current assets	23,413	23,560
Total current assets	353,558	318,083
Property and equipment, net	29,632	30,303
Operating lease right-of-use assets	—	48,134
Intangible assets, net	46,313	50,008
Goodwill	480,065	529,759
Investment in joint venture	1,725	859
Deferred income taxes	51,068	45,218
Other assets	32,238	36,805
Total assets	$ 994,599	$ 1,059,169
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 17,669	$ 19,294
Accruals and other current liabilities	167,517	174,889
Deferred revenues	204,991	180,130
Operating lease liabilities	—	15,959
Income taxes payable	2,236	3,666
Total current liabilities	392,413	393,938
Long-term debt	233,750	207,000
Long-term operating lease liabilities	—	34,182
Deferred revenues	8,154	6,326
Deferred income taxes	8,260	9,228
Income taxes payable	8,140	8,140
Other liabilities	9,263	20,611
Total liabilities	659,980	679,425
Commitments and contingencies (Note 18)		
Stockholders' equity:		
Class A Common Stock, $0.01 par value, authorized 320,000,000 shares; issued 11,601,757 shares as of December 31, 2019 and June 30, 2020 and Class B Common Stock, $0.01 par value, authorized 600,000,000 shares; issued 243,241,192 and 247,607,598 shares as of December 31, 2019 and June 30, 2020, respectively	2,548	2,592
Additional paid-in capital	408,667	415,883
Accumulated other comprehensive loss	(23,927)	(28,404)
Accumulated deficit	(52,669)	(10,327)
Total stockholders' equity	334,619	379,744
Total liabilities and stockholders' equity	$ 994,599	$ 1,059,169

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Operations

(in thousands, except share and per share data) (unaudited)

	Six Months Ended June 30,	
	2019	2020
Revenues:		
Subscriptions	$ 290,147	$ 327,837
Perpetual licenses	24,468	23,193
Subscriptions and licenses	314,615	351,030
Services	32,529	27,950
Total revenues	347,144	378,980
Cost of revenues:		
Cost of subscriptions and licenses	30,831	43,128
Cost of services	38,367	30,836
Total cost of revenues	69,198	73,964
Gross profit	277,946	305,016
Operating expenses:		
Research and development	91,861	89,353
Selling and marketing	75,168	65,727
General and administrative	46,307	52,269
Amortization of purchased intangibles	6,852	7,115
Total operating expenses	220,188	214,464
Income from operations	57,758	90,552
Interest expense, net	(4,474)	(2,516)
Other income (expense), net	(1,747)	(6,985)
Income before income taxes	51,537	81,051
Provision for income taxes	5,119	11,440
Equity in loss of joint venture, net of tax	—	866
Net income	46,418	68,745
Less: Net income attributable to participating securities	(12)	—
Net income attributable to Class A and Class B common stockholders	$ 46,406	$ 68,745
Per share information:		
Net income per share, basic	$ 0.16	$ 0.24
Net income per share, diluted	$ 0.16	$ 0.23
Weighted average shares outstanding, basic	285,529,476	286,068,766
Weighted average shares outstanding, diluted	293,633,255	295,595,234

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Comprehensive Income

(in thousands) (unaudited)

	Six Months Ended June 30,	
	2019	2020
Net income	$ 46,418	$ 68,745
Other comprehensive income (loss), net of taxes:		
Foreign currency translation adjustments	2,406	(4,503)
Actuarial gain on retirement plan, net of tax effect of ($6) and ($15), respectively	10	26
Total other comprehensive income (loss), net of taxes	2,416	(4,477)
Comprehensive income	$ 48,834	$ 64,268

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Stockholders' Equity

(in thousands, except share and per share data) (unaudited)

	Stockholders' Equity					
	Class A and Class B Common Stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
	Shares	Par value				
Balance as of December 31, 2018	250,283,513	$ 2,502	$ 392,896	$ (29,414)	$ (218,553)	$ 147,431
Cumulative effect of accounting changes	—	—	—	—	107,822	107,822
Net income	—	—	—	—	46,418	46,418
Other comprehensive income (loss)	—	—	—	2,416	—	2,416
Dividends declared	—	—	—	—	(12,643)	(12,643)
Profit sharing plan shares, net	(160,963)	(2)	—	—	(1,211)	(1,213)
Shares issued in connection with deferred compensation plan, net	2,230,430	22	—	—	(4,975)	(4,953)
Deferred compensation plan voluntary contributions and vesting of awards	—	—	1,876	—	—	1,876
Payment of shareholder Put and Call rights	(401,352)	(4)	—	—	(3,145)	(3,149)
Common Stock Purchase Agreement, net	64,509	1	466	—	(47)	420
Stock option exercises, net	2,657,027	27	2,154	—	(2,150)	31
Stock-based compensation expense	—	—	4,025	—	—	4,025
Shares related to restricted stock, net	409,665	4	(4)	—	(169)	(169)
Other	3,563	—	26	—	(17)	9
Balance as of June 30, 2019	255,086,392	$ 2,550	$ 401,439	$ (26,998)	$ (88,670)	$ 288,321

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Stockholders' Equity

(in thousands, except share and per share data) (unaudited)

	Stockholders' Equity					
	Class A and Class B Common Stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
	Shares	Par value				
Balance as of December 31, 2019	254,842,949	$ 2,548	$ 408,667	$ (23,927)	$ (52,669)	$ 334,619
Net income	—	—	—	—	68,745	68,745
Other comprehensive income (loss)	—	—	—	(4,477)	—	(4,477)
Dividends declared	—	—	—	—	(15,437)	(15,437)
Profit sharing plan shares, net	(385,568)	(4)	—	—	(4,424)	(4,428)
Shares issued in connection with deferred compensation plan, net	2,959,731	30	—	—	(1,860)	(1,830)
Deferred compensation plan voluntary contributions	—	—	1,798	—	—	1,798
Payment of shareholder Put and Call rights	(128,176)	(1)	—	—	(1,453)	(1,454)
Common Stock Purchase Agreement, net	169	—	—	—	(57)	(57)
Stock option exercises, net	2,184,628	22	2,203	—	(3,052)	(827)
Shares issued for stock grants, net	17,411	—	219	—	—	219
Stock-based compensation expense	—	—	2,993	—	—	2,993
Shares related to restricted stock, net	(281,789)	(3)	3	—	(120)	(120)
Balance as of June 30, 2020	259,209,355	$ 2,592	$ 415,883	$ (28,404)	$ (10,327)	$ 379,744

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Consolidated Statements of Cash Flows

(in thousands, except share and per share data) (unaudited)

	Six Months Ended June 30,	
	2019	2020
Cash flows from operating activities:		
Net income	$ 46,418	$ 68,745
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	15,366	16,664
Provision for accounts receivable allowance	1,088	293
Deferred income taxes	(2,354)	5,284
Deferred compensation plan activity	2,171	1,633
Stock-based compensation expense	4,025	3,212
Amortization of deferred debt issuance costs	277	277
Change in fair value of derivative	159	4,174
Change in fair value of contingent consideration	62	(1,390)
Foreign currency remeasurement loss	1,230	3,538
Equity in loss of joint venture, net of tax	—	866
Changes in assets and liabilities, net of effect from acquisitions:		
Accounts receivable, net	39,856	44,263
Prepaid and other assets	(7,497)	9,089
Accounts payable, accruals and other liabilities	19,447	11,208
Deferred revenues	(25,326)	(29,500)
Income taxes payable	(12,164)	(2,174)
Net cash provided by operating activities	82,758	136,182
Cash flows from investing activities:		
Purchases of property and equipment and investment in capitalized software	(8,123)	(9,419)
Capitalization of costs to translate software products into foreign languages	(372)	(551)
Acquisitions, net of cash acquired of $980 and $2,064, respectively	(9,662)	(67,595)
Other investing activities	—	(1,414)
Net cash used in investing activities	(18,157)	(78,979)
Cash flows from financing activities:		
Proceeds from credit facilities	84,000	164,375
Payments of credit facilities	(95,750)	(191,125)
Payments of financing leases	—	(93)
Payments of acquisition debt and other consideration	(8,273)	(1,091)
Payments of dividends	(12,641)	(15,901)
Payments for shares acquired including shares withheld for taxes	(16,027)	(69,307)
Proceeds from Common Stock Purchase Agreement	4,510	58,349
Net proceeds from exercise of common stock options and restricted stock	2,177	2,237
Net cash used in financing activities	(42,004)	(52,556)
Effect of exchange rate changes on cash and cash equivalents	(346)	(232)
Increase in cash and cash equivalents	22,251	4,415
Cash and cash equivalents, beginning of year	81,183	121,101
Cash and cash equivalents, end of period	$ 103,434	$ 125,516
Supplemental information:		
Cash paid for income taxes	$ 21,931	$ 7,180
Income tax refunds	1,000	298
Interest paid	4,909	3,162
Non-cash contingent acquisition consideration	50	1,706
Non-cash deferred acquisition consideration	—	1,069

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements

(in thousands, except share and per share data) (unaudited)

Note 1: Basis of Presentation and Significant Accounting Policies

Description of Business and Operations **—** Bentley Systems, Incorporated ("Bentley" or the "Company") is a Delaware corporation that was founded in 1984 and is headquartered in Exton, Pennsylvania. The Company, together with its subsidiaries, is a leading global provider of infrastructure engineering software solutions for professionals and organizations involved in the project delivery and operational performance of infrastructure assets. The Company is dedicated to advancing infrastructure through its comprehensive software solutions that span engineering disciplines, assets, and lifecycle processes. The Company's integrated software platform encompasses both the design and construction of infrastructure, which the Company refers to as project delivery, and the operation of infrastructure assets, which the Company refers to as asset performance. The Company's software solutions are designed to enable information mobility for a more complete flow of information among applications, across distributed project teams, from offices to the field, and throughout the infrastructure lifecycle. The Company believes its solutions extend the reach and scope of digital engineering models from the project delivery phase into the asset performance phase of the infrastructure lifecycle, which enables engineers to make infrastructure assets more intelligent and sustainable. Users of the Company's solutions include engineers and construction professionals who collaborate on project delivery, and owner-operators who maintain, adapt, and optimize the performance of infrastructure assets.

Basis of Presentation and Consolidation **—** The unaudited consolidated financial statements and accompanying notes have been prepared in United States ("U.S.") dollars and in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. The Company is party to a joint venture which is accounted for using the equity method. All significant intercompany accounts and transactions have been eliminated in consolidation. In the opinion of management, the accompanying unaudited consolidated financial statements contain all adjustments, consisting only of those of a normal recurring nature, necessary for a fair statement of our financial position, results of operations, and cash flows at the dates and for the periods indicated. The December 31, 2019 consolidated balance sheet included herein is derived from our audited consolidated financial statements. The results of operations for the six months ended June 30, 2020 are not necessarily indicative of the results expected for the remainder of the fiscal year.

The Company's principal subsidiaries are Bentley Systems International Limited (Ireland), Bentley Software International, Limited (Bermuda), Bentley Canada Inc. (Canada), Bentley Systems Europe BV (the Netherlands), Bentley Systems Pty Ltd. (Australia), Bentley Systems Co., Ltd. (Japan), Bentley Systems Germany GmbH (Germany), Bentley Systems Ltd. (UK), and Bentley Systems India Private Limited (India).

Use of Estimates **—**The preparation of consolidated financial statements and related disclosures in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting periods. The Company's significant estimates and assumptions include revenue recognition, adequacy of allowance for accounts receivable, determination of the fair value of acquired assets and liabilities, the fair value of derivative financial instruments, the fair value of common stock and stock-based compensation, operating lease assets and liabilities, useful lives for depreciation and amortization, impairment of goodwill and intangible assets, and accounting for income taxes. Actual results could differ materially from these estimates.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 1: Basis of Presentation and Significant Accounting Policies (Continued)

Derivatives Not Designated As Hedging Instruments **—** On March 31, 2020, the Company entered into an interest rate swap with a notional amount of $200,000 and a ten-year term to reduce the interest rate risk associated with the Company's Credit Facility (see Note 10). The interest rate swap is not designated as a hedging instrument for accounting purposes. The Company accounts for the swap as either an asset or a liability on the consolidated balance sheet and carries the derivative at fair value. Gains and losses from the change in fair value are recognized in *Other income (expense), net* and payments related to the swap are recognized in *Interest expense, net* in the consolidated statements of operations. The bank counterparty to the derivative potentially exposes the Company to credit-related losses in the event of nonperformance. To mitigate that risk, the Company only contracts with counterparties who meet the Company's minimum requirements under its counterparty risk assessment process. The Company monitors counterparty risk on at least a quarterly basis and adjusts its exposure as necessary. The Company does not enter into derivative instrument transactions for trading or speculative purposes.

Leases **—** The Company determines if an arrangement is a lease at inception. Operating leases are included in *Operating lease right-of-use assets*, *Operating lease liabilities*, and *Long-term operating lease liabilities* in the Company's consolidated balance sheets. Operating lease right-of-use assets represent the Company's right to use an underlying asset for the lease term and operating lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease right-of-use assets and operating lease liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. The Company uses its incremental borrowing rate, if the Company's leases do not provide an implicit rate, based on the information available at the commencement date in determining the present value of lease payments. The incremental borrowing rate is determined based on the Company's estimated credit rating, the term of the lease, economic environment where the asset resides, and full collateralization. The operating lease right-of-use assets also include any lease payments made and are reduced by any lease incentives. Options to extend or terminate the lease are considered in determining the lease term when it is reasonably certain that the option will be exercised. Lease expense for lease payments is recognized on a straight- line basis over the lease term. The Company's operating leases are primarily for office space, cars, and office equipment. Finance leases are included in *Property and equipment, net*, *Accruals and other current liabilities*, and *Other liabilities* in the Company's consolidated balance sheet.

Significant Accounting Policies**—**There have been no changes other than what is discussed herein to the Company's significant accounting policies as compared to the significant accounting policies described in Note 1 to the Company's consolidated financial statements as of and for the year ended December 31, 2019. These unaudited consolidated financial statements should be read in conjunction with the consolidated financial statements and related notes as of and for the year ended December 31, 2019.

Note 2: Recent Accounting Pronouncements

In August 2018, the Financial Accounting Standards Board ("FASB") issued ASU No. 2018-15, Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract*, which clarifies the accounting for implementation costs in cloud computing arrangements. ASU 2018-15 is effective for the Company for the annual reporting period beginning after December 15, 2020, and interim periods beginning after December 15, 2021. Early adoption is permitted, including adoption in an interim period. The Company is currently evaluating the accounting, transition, and disclosure requirements of the standard and its impact on the Company's consolidated results of operations and financial position.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 2: Recent Accounting Pronouncements (Continued)

In January 2017, the FASB issued ASU No. 2017-04, Intangibles-Goodwill and Other (Topic 350): *Simplifying the Test for Goodwill Impairment*, which removes Step 2 of the goodwill impairment test. A goodwill impairment will now be calculated as the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. This ASU is effective for the Company for the interim and annual reporting periods beginning after December 15, 2021. Early adoption is permitted, including adoption in an interim period. The Company does not believe that this ASU will have a material impact on the Company's consolidated results of operations and financial position.

Recently Adopted Accounting Guidance

In February 2016, the FASB issued ASU No. 2016-02 regarding ASC Topic 842, *Leases* ("Topic 842"). This ASU requires balance sheet recognition of lease assets and lease liabilities by lessees for leases classified as operating leases, with an optional policy election to not recognize lease assets and lease liabilities for leases with a term of 12 months or less. The amendments also require new disclosures, including qualitative and quantitative requirements, providing additional information about the amounts recorded in the financial statements. Subsequent to the issuance of ASU 2016-02, the FASB issued ASU Nos. 2018-01, *Land Easement Practical Expedient for Transition to Topic 842*, 2018-10, *Codification Improvements to Topic 842, Leases*, 2018-11, Leases (Topic 842): *Targeted Improvements*, and 2018-20, *Narrow-Scope Improvements for Lessors*. These ASUs do not change the core principle of the guidance in ASU 2016-02. Instead, these amendments are intended to clarify and improve operability of certain topics included within the lease standard.

The Company adopted Topic 842 as of January 1, 2020 using the modified retrospective method for all existing leases. Upon adoption, the Company recognized its lease assets and lease liabilities measured at the present value of all future fixed lease payments, discounted using the Company's incremental borrowing rate.

The Company elected the package of practical expedients as permitted under the transition guidance, which allows the Company: (1) to not reassess whether any existing contracts are leases or contain a lease; (2) to not reassess the lease classification of existing leases; and (3) to not reassess treatment of initial direct costs for existing leases. Additionally, the Company elected the practical expedients to combine lease and non-lease components for new leases post adoption and to not recognize lease assets and lease liabilities for leases with a term of 12 months or less.

Upon adoption of Topic 842, the Company recognized right of use assets of $45,850 and lease liabilities of $47,666 calculated based on the present value of the remaining minimum lease payments as of the adoption date. Topic 842 did not have a material impact to the Company's consolidated statement of operations (see Note 8).

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments–Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments.* Current guidance requires the allowance for doubtful accounts to be estimated based on an incurred loss model, which considers past and current conditions. Topic 326 requires companies to use an expected loss model that also considers reasonable and supportable forecasts of future conditions. Additionally, Topic 326 requires the allowance for doubtful accounts balance (contra-asset) to be presented separately in the consolidated balance sheets. Topic 326 is effective for the Company for the annual period beginning after December 15, 2020, including interim periods within that annual period. The Company adopted ASU 2016-13 as of January 1, 2020 using the modified retrospective method of adoption. The adoption of the ASU did not have a material impact on the Company's consolidated results of operations and financial position.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 2: Recent Accounting Pronouncements (Continued)

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement*. ASU 2018-13 modifies certain required disclosures and establishes new requirements related to fair value measurement. Additionally, the disclosure requirement to state the reasons for transfers between Level 1 and Level 2, the policy for timing transfers between levels, and the valuation process for Level 3 measurements have been removed. ASU 2018-13 is effective for the Company for the annual period beginning after December 15, 2019, including interim periods within that annual period. The Company adopted the ASU effective January 1, 2020. The adoption of this ASU did not have a material impact on the Company's consolidated results of operations and financial position.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Tax*, which is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and clarifies and amends existing guidance to improve consistent application. ASU 2019-12 is effective for the Company for the annual period beginning after December 15, 2021, including interim periods within that annual period. The Company adopted the ASU effective January 1, 2020. The adoption of this ASU did not have a material impact on the Company's consolidated results of operations and financial position.

Note 3: Revenue from Contracts with Customers

The Company recognizes revenue upon the transfer of promised goods or services to customers in an amount that reflects the expected consideration received in exchange for those goods or services.

Nature of Products and Services

The Company generates revenues from subscriptions, perpetual licenses, and professional services.

Subscriptions

SELECT subscriptions—A prepaid annual recurring subscription that accounts (which are based on distinct contractual and billing relationships with the Company, where affiliated entities of a single parent company may each have an independent account with the Company) can elect to add to a new or previously purchased perpetual license. SELECT provides accounts with benefits, including upgrades, comprehensive technical support, pooled licensing benefits, annual portfolio balancing exchange rights, learning benefits, certain Azure-based cloud collaboration services, mobility advantages, and access to other available benefits. SELECT subscription revenues are recognized as distinct performance obligations are satisfied. The performance obligations within the SELECT offering, outside of the portfolio balancing exchange right, are concurrently delivered and have the same pattern of recognition. These performance obligations are accounted for ratably over the term as a single performance obligation.

Enterprise subscriptions—The Company also provides Enterprise subscription offerings which provide its largest accounts with complete and unlimited global access to the Company's comprehensive portfolio of solutions. Enterprise License Subscriptions (“ELS”) provide access for a prepaid fee, which is based on the account’s usage of software in the preceding year, effectively a fee-certain consumption-based arrangement. ELS contain a term license component, SELECT maintenance and support, and performance consulting days. The SELECT maintenance and support benefits under ELS do not include a portfolio balancing performance obligation. Revenue is allocated to the various performance obligations based on their respective standalone selling price (“SSP”). Revenue allocated to the term license component is recognized upon delivery at the start of the subscription term while revenues for the SELECT maintenance and support and the performance consulting days are recognized as delivered over the subscription term. Billings in advance are recorded as *Deferred revenues* in the consolidated balance sheets.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 3: Revenue from Contracts with Customers (Continued)

E365 subscriptions ("E365"), which were introduced during the fourth quarter of 2018, provide unrestricted access to the Company's comprehensive software portfolio, similar to ELS, however, the accounts are charged based upon daily usage. The daily usage fee includes a term license component, SELECT maintenance and support, and Success Plan services, which are designed to achieve business outcomes through more efficient and effective use of the Company's software. E365 revenues are recognized based upon usage incurred by the account. Usage is defined as distinct user access on a daily basis. The term of E365 subscriptions aligns with calendar quarters and revenue is recognized based on actual usage.

Term license subscriptions—The Company provides annual, quarterly, and monthly term licenses for its software products. Term license subscriptions contain a term license component and SELECT maintenance and support. Revenue is allocated to the various performance obligations based on their SSP. Annual term licenses ("ATL") are generally prepaid annually for named user access to specific products. Quarterly term license ("QTL") subscriptions allow accounts to pay quarterly in arrears for license usage that is beyond their prepaid subscriptions. Monthly term license ("MTL") subscriptions are identical to QTL subscriptions, except for the term of the license, and the manner in which they are monetized. MTL subscriptions require a Cloud Services Subscription ("CSS"), which is described below. For ATL, revenue allocated to the term license component is recognized upon delivery at the start of the subscription term while revenue for the SELECT maintenance and support is recognized as delivered over the subscription term. Billings in advance are recorded as *Deferred revenues* in the consolidated balance sheets. For usage-based QTL and MTL subscriptions, revenues are recognized based upon usage incurred by the account. Usage is defined as peak usage over the respective terms. The terms of QTL and MTL subscriptions align with calendar quarters and calendar months, respectively, and revenue is recognized based on actual usage.

Visas and Passports are quarterly or annual term licenses enabling users to access specific project or enterprise information and entitle certain functionality of the Company's ProjectWise and AssetWise systems. The Company's standard offerings are usage based with monetization through the Company's CSS program as described below.

CSS is a program designed to streamline the procurement, administration, and payment process. The program requires an account to estimate their annual usage for CSS eligible offerings and deposit funds in advance. Actual consumption is monitored and invoiced against the deposit on a calendar quarter basis. CSS balances not utilized for eligible products or services may roll over to future periods or are refundable. Paid and unconsumed CSS balances are recorded in *Accruals and other current liabilities* in the consolidated balance sheets. Software and services consumed under CSS are recognized pursuant to the applicable revenue recognition guidance for the respective software or service and classified as subscriptions or services based on their respective nature.

Perpetual licenses

Perpetual licenses may be sold with or without attaching a SELECT subscription. Historically, attachment and retention of the SELECT subscription has been high given the benefits of the SELECT subscription. Perpetual license revenue is recognized upon delivery of the license to the user.

Services

The Company provides professional services including training, implementation, configuration, customization, and strategic consulting services. The Company performs projects on both a time and materials and a fixed fee basis. The Company's recent and preferred contractual structures for delivering professional services include (i) delivery of the services in the form of subscription-like, packaged offerings which are annually recurring in nature, and (ii) delivery of the Company's growing portfolio of Success Plans in standard offerings which offer a level of subscription service over and above the standard technical support offered to all accounts as part of their SELECT or Enterprise agreement. Revenues are recognized as services are performed.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 3: Revenue from Contracts with Customers (Continued)

The Company primarily utilizes its direct internal sales force and also has arrangements through independent channel partners to promote and sell Bentley products and subscriptions to end-users. Channel partners are authorized to promote the sale of an authorized set of Bentley products and subscriptions within an authorized geography under a Channel Partner Agreement.

Significant Judgments and Estimates

The Company's contracts with customers may include promises to transfer licenses (perpetual or term-based), maintenance, and services to a user. Judgment is required to determine if the promises are separate performance obligations, and if so, the allocation of the transaction price to each performance obligation. When an arrangement includes multiple performance obligations which are concurrently delivered and have the same pattern of transfer to the customer, the Company accounts for those performance obligations as a single performance obligation. For contracts with more than one performance obligation, the transaction price is allocated among the performance obligations in an amount that depicts the relative SSP of each obligation. Judgment is required to determine the SSP for each distinct performance obligation. In instances where SSP is not directly observable, such as when the Company does not sell the product or service separately, the Company determines the SSP using information that may include market conditions and other observable inputs. The Company uses a range of amounts to estimate SSP when it sells each of the products and services separately and needs to determine whether there is a discount that should be allocated based on the relative SSP of the various products and services.

The Company's SELECT agreement provides users with perpetual licenses a right to exchange software for other eligible perpetual licenses on an annual basis upon renewal. The Company refers to this option as portfolio balancing and concluded that the portfolio balancing feature represents a material right resulting in the deferral of the associated revenue. Judgment is required to estimate the percentage of users who may elect to portfolio balance and considers inputs such as historical user elections. This feature is available once per term and must be exercised prior to the respective renewal term. The Company recognizes the associated revenue upon election or when the portfolio balancing right expires. This right is included in the initial and subsequent renewal terms and the Company reestablishes the revenue deferral for the material right upon the beginning of the renewal term. As of June 30, 2020, the Company has deferred $17,522 related to portfolio balancing exchange rights which is included in *Deferred revenues* in the consolidated balance sheet.

Contract Assets and Contract Liabilities

	December 31, 2019	June 30, 2020
Contract assets	$ 644	$ 344
Deferred revenues	213,145	186,456

As of June 30, 2020, the Company's contract assets relate to performance obligations completed in advance of the right to invoice and are included in *Prepaid and other current assets*. Contract assets were not impaired as of June 30, 2020.

Deferred revenues consist of billings made or payments received in advance of revenue recognition from subscriptions and professional services. The timing of revenue recognition may differ from the timing of billings to users.

During the six months ended June 30, 2020, $144,391 of revenue that was included in the December 31, 2019 deferred revenue balance was recognized. There were additional deferrals of $118,767, which were primarily related to new billings.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 3: Revenue from Contracts with Customers (Continued)

Remaining Performance Obligations

The Company's contracts with customers include amounts allocated to performance obligations that will be satisfied at a later date. As of June 30, 2020, amounts allocated to these remaining performance obligations are $186,456, of which the Company expects to recognize 96.6% over the next 12 months with the remaining amount thereafter.

Disaggregation of Revenues

The following table details revenues:

	Six Months Ended June 30,	
	2019	2020
Revenues:		
Subscriptions:		
SELECT subscriptions	$ 131,114	$ 132,339
Enterprise license subscriptions	87,639	109,290
Term license subscriptions	71,394	86,208
Subscriptions	290,147	327,837
Perpetual licenses:		
Perpetual licenses	24,468	23,193
Subscriptions and licenses	314,615	351,030
Services:		
Professional services (recurring)	10,444	7,316
Professional services (other)	22,085	20,634
Services	32,529	27,950
Total revenues	$ 347,144	$ 378,980

The Company recognizes perpetual licenses and the term license component of subscriptions as revenue when either the licenses are delivered or at the start of the subscription term. For the six months ended June 30, 2019 and 2020, the Company recognized $143,742 and $160,270 of license related revenues, respectively, of which $119,274 and $137,077, respectively, was attributable to the term license component of the Company's subscription based commercial offerings recorded in Subscriptions.

The Company derived 7% and 8% of its total revenues through channel partners for the six months ended June 30, 2019 and 2020, respectively.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 3: Revenue from Contracts with Customers (Continued)

Revenue to external customers is attributed to individual countries based upon the location of the customer.

	Six Months Ended June 30,	
	2019	2020
Revenues:		
Americas [1]	$ 167,440	$ 185,838
Europe, the Middle East, and Africa [2]	115,811	121,578
Asia Pacific	63,893	71,564
Total Revenues	$ 347,144	$ 378,980

(1) Americas includes the United States, Canada, and Latin America (including the Caribbean). Revenue attributable to the United States totaled $142,795 and $159,201 for the six months ended June 30, 2019 and 2020, respectively.

(2) Revenue attributable to the United Kingdom totaled $27,297 and $27,885 for the six months ended June 30, 2019 and 2020, respectively.

Note 4: Acquisitions

During the year ended December 31, 2019 and the six months ended June 30, 2020, the Company completed a number of acquisitions, none of which were material, individually or in the aggregate, to the Company's consolidated statements of operations and financial position. The aggregate details of the Company's acquisition activity are as follows:

	Acquisitions Completed in	
	Year Ended December 31, 2019	Six Months Ended June 30, 2020
Number of acquisitions	4	3
Cash paid at closing [1]	$ 36,577	$ 69,659
Cash acquired	(2,523)	(2,064)
Net cash paid	$ 34,054	$ 67,595

(1) Of the cash paid at closing during the six months ended June 30, 2020, $3,413 was deposited into an escrow account to secure any potential indemnification and other obligations of the seller.

As of December 31, 2019, the fair value of the contingent consideration related to acquisitions totaled $6,599, of which $5,100 is included in *Accruals and other current liabilities* and $1,499 is included in *Other liabilities* in the consolidated balance sheet.

As of June 30, 2020, the fair value of the contingent consideration related to acquisitions totaled $5,761, of which $4,223 is included in *Accruals and other current liabilities* and $1,538 is included in *Other liabilities* in the consolidated balance sheet.

As of December 31, 2019 and June 30, 2020, respectively, total current deferred payment obligations including contingent consideration for all acquisitions were $5,999 and $4,954, respectively and are included in *Accruals and other current liabilities* in the consolidated balance sheet.

As of December 31, 2019 and June 30, 2020, respectively, total long-term deferred payment obligations including contingent consideration for all acquisitions were $1,499 and $1,538 and are included in *Other liabilities* in the consolidated balance sheets.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 4: Acquisitions (Continued)

As of June 30, 2020, there is $891 due to the Company related to subsequent net working capital adjustments from a 2020 acquisition, which is included in *Accounts receivable* in the consolidated balance sheet.

The operating results of the acquired businesses are included in the Company's consolidated financial statements from the closing date of each respective acquisition. The purchase price for each acquisition has been allocated to the net tangible and intangible assets and liabilities based on their estimated fair values at the acquisition date. Independent valuations are obtained to support purchase price allocations when deemed appropriate.

In connection with the purchase price allocations related to the Company's acquisitions, the Company has estimated the fair values of the support obligations assumed relative to acquired deferred revenue. The estimated fair values of the support obligations assumed were determined using a cost-build-up approach. The cost-build-up approach determines fair value by estimating the costs related to fulfilling the obligations plus a normal profit margin. For accounting purposes, the sum of the costs and operating profit approximates the amount that the Company would be required to pay a third party to assume the support obligations. These fair value adjustments reduce the revenues recognized over the remaining support contract term of the Company's acquired contracts. During the year ended December 31, 2019 and the six months ended June 30, 2020, the fair value adjustments to reduce revenue were $553 and $195, respectively.

The purchase accounting for two acquisitions completed during the year ended December 31, 2019 and three acquisitions completed during the six months ended June 30, 2020, are not yet completed. Identifiable assets acquired and liabilities assumed were provisionally recorded at their estimated fair values on the acquisition date. The initial accounting for these business combinations is not complete because the evaluation necessary to assess the fair values of certain net assets acquired is still in process. The provisional amounts are subject to revision until the evaluations are completed to the extent that additional information is obtained about the facts and circumstances that existed as of the acquisition date. The allocation of the purchase price may be modified from the date of the acquisition as more information is obtained about the fair values of assets acquired and liabilities assumed, however such measurement period cannot exceed one year.

Acquisition and integration costs are expensed as incurred. During the six months ended June 30, 2019 and 2020, the Company incurred acquisition and integration costs of $251 and $1,078, respectively, which include costs related to legal, accounting, valuation, general administrative, and other consulting fees. Such costs are recorded in *General and administrative* in the Company's consolidated statements of operations.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 4: Acquisitions (Continued)

The following summarizes the fair values of the assets acquired and liabilities assumed as well as the weighted average useful lives assigned to acquired intangible assets at the respective date of each acquisition (including contingent consideration):

	Acquisitions Completed in	
	Year Ended December 31, 2019	Six Months Ended June 30, 2020
Consideration:		
Cash paid at closing	$ 36,577	$ 69,659
Contingent consideration	4,498	1,706
Deferred payment obligations to (from) sellers	—	(1,069)
Total consideration	$ 41,075	$ 70,296
Assets acquired and liabilities assumed:		
Cash	$ 2,523	$ 2,064
Prepaid and other current assets	1,782	5,697
Right-of-use assets	—	1,668
Property and equipment	411	172
Other assets	84	—
Customer relationship asset (weighted average useful life of 7 years)	6,534	8,941
Software and technology (weighted average useful life of 3 years)	2,423	1,751
Non-compete agreement (useful life of 5 years)	150	200
Trademarks (weighted average useful life of 5 and 9 years, respectively)	1,431	3,010
Total identifiable assets acquired excluding goodwill	15,338	23,503
Deferred revenues	(2,897)	(4,274)
Other current liabilities	(3,538)	(2,504)
Operating lease liabilities	—	(1,668)
Non-current liabilities	—	(41)
Deferred income taxes	(1,869)	(978)
Total liabilities assumed	(8,304)	(9,465)
Net identifiable assets acquired excluding goodwill	7,034	14,038
Goodwill	34,041	56,258
Net assets acquired	$ 41,075	$ 70,296

The fair values of the working capital, other assets (liabilities), and property and equipment approximated their respective carrying values as of the acquisition date.

As discussed above, the fair values of deferred revenues were determined using the cost-build-up approach.

The fair values of the intangible assets were primarily determined using the income approach. When applying the income approach, indications of fair values were developed by discounting future net cash flows to their present values at market-based rates of return. The cash flows were based on estimates used to price the acquisitions and the discount rates applied were benchmarked with reference to the implied rate of return from the Company’s pricing model and the weighted average cost of capital.

Goodwill recorded in connection with the acquisitions was attributable to synergies expected to arise from cost saving opportunities as well as future expected cash flows. Of the goodwill recorded as of June 30, 2020, $23,267 is expected to be deductible for tax purposes.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 5: Property and Equipment, Net

Property and equipment, net consist of the following at December 31, 2019 and June 30, 2020:

	December 31, 2019	June 30, 2020
Land	$ 2,811	$ 2,811
Building and improvements	31,619	32,435
Computer equipment and software	47,472	50,637
Furniture, fixtures, and equipment	12,593	12,730
Aircraft	3,910	4,075
Other	79	79
Property and equipment, at cost	98,484	102,767
Less accumulated depreciation	(68,852)	(72,464)
Total property and equipment, net	$ 29,632	$ 30,303

Depreciation expense for the six months ended June 30, 2019 and 2020 was $4,799 and $4,926, respectively.

Note 6: Goodwill and Other Intangible Assets

The changes in the carrying amount of goodwill for the six months ended June 30, 2020 are as follows:

Balance, December 31, 2019	$ 480,065
Acquisitions	56,258
Foreign currency translation adjustments	(6,712)
Other adjustments	148
Balance, June 30, 2020	$ 529,759

Details of intangible assets other than goodwill as of December 31, 2019 and June 30, 2020 are as follows:

		As of December 31, 2019			As of June 30, 2020		
	Estimated Useful Life	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Intangible assets subject to amortization							
Software and technology	3 years	$ 66,063	$ (58,866)	$ 7,197	$ 67,222	$ (60,648)	$ 6,574
Customer relationships	3-10 years	88,904	(59,744)	29,160	96,801	(64,451)	32,350
Trademarks	3-10 years	22,278	(12,461)	9,817	25,084	(14,317)	10,767
Non-compete agreements	5 years	150	(11)	139	350	(33)	317
Total intangible assets		$ 177,395	$ (131,082)	$ 46,313	$ 189,457	$ (139,449)	$ 50,008

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 6: Goodwill and Other Intangible Assets (Continued)

The aggregate amortization expense for purchased intangible assets with finite lives recorded for the six months ended June 30, 2019 and 2020 was reflected in our consolidated statements of operations as follows:

	Six Months Ended June 30,	
	2019	2020
Cost of subscriptions and licenses	$ 1,846	$ 2,161
Amortization of purchased intangibles	6,851	7,115
Total amortization expense	$ 8,697	$ 9,276

Note 7: Investment in Joint Venture

In September 2019, the Company and Topcon Positioning Systems, Inc. formed Digital Construction Works, Inc. (“DCW”), a joint venture which operates as a digital integrator of software and cloud services for the construction industry. DCW’s focus is to transform the construction industry from its legacy document-centric paradigm by simplifying and enabling digital automated workflows and processes, technology integration, and digital twinning services for infrastructure.

The Company and Topcon each have a 50% ownership in DCW. The Company applies the equity method of accounting for its investment in DCW. Under the equity method, the Company recorded its initial investment in the joint venture at cost and subsequently adjusts that investment by the Company’s proportional share of income or losses in DCW. As of December 31, 2019 and June 30, 2020, the aggregate carrying amount of the Company’s investment in the joint venture was $1,725 and $859, respectively. The Company tests this investment for impairment whenever circumstances indicate that the carrying value of the investment may not be recoverable.

Pursuant to ASC 850-10-20, *Related Party Disclosures*, the Company has determined that DCW is a related party. For the six months ended June 30, 2020, transactions between the Company and DCW were immaterial to the Company’s consolidated financial statements.

Note 8: Leases

The Company's operating leases consist of office facilities, office equipment, and cars, and the Company's finance leases consist of office equipment. Finance leases are not material for the periods presented. The Company's leases have remaining terms of less than one year to 7.3 years, some of which include one or more options to renew, with renewal terms of up to six years and some of which include options to terminate the leases within the next four years.

For contracts with lease and non-lease components, the Company has elected not to allocate the contract consideration, and account for the lease and non-lease components as a single lease component. Payments under the Company’s lease arrangements are primarily fixed, however, certain lease agreements contain variable payments, which are expensed as incurred and not included in the operating lease assets and liabilities. Variable lease cost may include common area maintenance, property taxes, utilities, and fluctuations in rent due to a change in an index or rate. The Company has elected not to recognize a right-of-use asset or lease liability for short-term leases (leases with a term of twelve months or less). Short-term leases are recognized in the consolidated statement of operations on a straight-line basis over the lease term. Short-term lease expense was not material for the periods presented.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 8: Leases (Continued)

The components of operating lease cost reflected in the consolidated statement of operations for the six months ended June 30, 2020 were as follows:

	Six Months Ended June 30, 2020
Operating lease cost [1]	$ 8,859
Variable lease cost	1,882
Short-term lease cost	7
Total operating lease cost	$ 10,748

(1) Operating lease cost includes rent cost related to operating leases for office facilities of $8,471 for the six months ended June 30, 2020.

Other information related to leases for the six months ended June 30, 2020 was as follows:

	Six Months Ended June 30, 2020
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 9,003
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 13,118
Weighted-average remaining lease term - operating leases (in years)	3.83
Weighted-average discount rate - operating leases	2.26%

Maturities of operating lease liabilities as of June 30, 2020 are as follows:

	As of June 30, 2020
Remainder of 2020	$ 9,094
2021	15,875
2022	12,215
2023	7,886
2024	4,115
Thereafter	4,523
Total future lease payments	53,708
Less: imputed interest	(3,567)
Total operating lease liabilities	$ 50,141

As of June 30, 2020, the Company had additional operating lease minimum lease payments of $213 for executed leases that have not yet commenced, primarily for office locations.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 8: Leases (Continued)

Total financing lease liabilities as of June 30, 2020 were $354. Supplemental balance sheet information related to financing leases as of June 30, 2020 are as follows:

	As of June 30, 2020
Property and equipment	$ 520
Accumulated depreciation	(108)
Property and equipment, net	$ 412
Accruals and other current liabilities	$ 176
Other liabilities	178
Total financing lease liabilities	$ 354

As of December 31, 2019, under the prior lease standard (Topic 840), future minimum lease payments under noncancellable operating leases are as follows:

	As of December 31, 2019
2020	$ 15,886
2021	13,186
2022	10,385
2023	6,572
2024	3,216
Thereafter	2,771
Total minimum lease payments	$ 52,016

Note 9: Accruals and Other Current Liabilities

Accruals and other current liabilities consist of the following:

	December 31, 2019	June 30, 2020
Cloud Services Subscription deposits	$ 54,688	$ 84,180
Accrued benefits	33,184	26,763
Accrued compensation	31,537	21,353
Due to customers	8,945	10,526
Accrued acquisition stay bonuses	4,143	5,058
Contingent consideration from acquisitions	5,100	4,223
Sales taxes payable	5,287	4,110
Accrued professional fees	4,382	2,591
Accrued hosting costs	2,215	2,121
Accrued facility costs	2,168	1,908
Accrued severance and realignment costs	1,688	825
Non-contingent consideration from acquisitions	900	731
Accrued rent	1,909	—
Other accrued and current liabilities	11,371	10,500
Total accruals and other current liabilities	$ 167,517	$ 174,889

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 10: Long-Term Debt

Long-term debt consists of the following at December 31, 2019 and June 30, 2020:

	December 31, 2019	June 30, 2020
Bank credit facility:		
Senior secured revolver	$ 233,750	$ 207,000
Total long-term debt	$ 233,750	$ 207,000

Bank Credit Facility —On December 19, 2017, the Company entered into an amended and restated credit agreement (the "Credit Facility"), which matures on December 18, 2022. Upon entry into the Credit Facility, the Company obtained a $500,000 senior secured revolving facility and refinanced all indebtedness outstanding under its prior facility.

In addition to the revolving line of credit, the Credit Facility also provides up to $50,000 of letters of credit and other incremental borrowings subject to availability, including a $50,000 multi-currency swing-line sub-facility and a $100,000 incremental "accordion" sub-facility. The Company had $546 and $150 of letters of credit and surety bonds outstanding as of December 31, 2019 and June 30, 2020, respectively. As of December 31, 2019 and June 30, 2020, the Company had $265,704 and $292,850 available under the Credit Facility.

Under the Credit Facility, the Company may make either Euro currency or non-Euro currency interest rate elections. Interest on the Euro currency borrowings is at the one-month London Interbank Offered Rate ("LIBOR") plus a spread ranging from 100 basis points ("bps") to 225 bps as determined by the Company's net leverage ratio. Under the non-Euro currency elections, Credit Facility borrowings bear a base interest rate of the greater of (i) the prime rate, (ii) the overnight bank funding effective rate plus 50 bps, or (iii) LIBOR plus 100 bps, plus a spread ranging from 0 bps to 125 bps as determined by the Company's leverage ratio. In addition, a commitment fee for the unused Credit Facility ranges from 15 bps to 30 bps as determined by the Company's net leverage ratio.

Borrowings under the Credit Facility are guaranteed by all of the Company's first tier domestic subsidiaries and are secured by a first priority security interest in substantially all of the Company's and the guarantors' U.S. assets and 65% of the stock of their directly owned foreign subsidiaries. The Credit Facility contains both affirmative and negative covenants, including maximum leverage ratios. At December 31, 2019 and June 30, 2020, the Company was in compliance with all covenants in its debt agreements.

Interest rate risk associated with the Credit Facility is managed through an interest rate swap which the Company executed on March 31, 2020. The swap has an effective date of April 2, 2020 and a termination date of April 2, 2030. Under the terms of the swap, the Company fixed its LIBOR borrowing rate at 0.73% on a notional amount of $200,000. The interest rate swap is not designated as a hedging instrument for accounting purposes. The Company accounts for the swap as either an asset or a liability on the balance sheet and carries the derivative at fair value. Gains and losses from the change in fair value are recognized in *Other income (expense), net* in the consolidated statements of operations. At June 30, 2020, the fair value of the swap was $4,174.

For the six months ended June 30, 2019 and 2020, the weighted average interest rate under the Credit Facility was 3.73% and 2.18%, respectively. There was no accrued interest or fees as of December 31, 2019. As of June 30, 2020, accrued interest and fees was $33. Interest expense was $4,600 and $2,544 for the six months ended June 30, 2019 and 2020, respectively.

In addition, interest expense includes amortization of deferred financing costs of $277 for the six months ended June 30, 2019 and 2020.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 10: Long-Term Debt (Continued)

***Other*—**Interest expense related to other obligations was $144 and $25 for the six months ended June 30, 2019 and 2020, respectively.

Note 11: Executive Bonus Plan

The Company has an incentive compensation program under which up to 20% of the Company's adjusted operating profits, as defined in the plan agreement and before deductions for such plan payments, may be paid to plan participants in the form of cash bonuses, subject to approval by the Company's board of directors and certain limitations imposed by the Company's Credit Facility. The plan permits the deduction of certain holdback amounts from the plan's pool, from which amounts can then be allocated to fund items including equity and/or cash incentive compensation for non-plan participants and participant charitable contributions. During the six months ended June 30, 2019 and 2020, the incentive compensation, including cash payments and deferred compensation to plan participants, recognized under this plan (net of all applicable holdbacks) was $13,639 and $16,564, respectively.

Note 12: Retirement Plans

The Company maintains a qualified 401(k) profit sharing plan (the Plan) for the benefit of substantially all U.S.-based full-time colleagues. The Company may make discretionary profit-sharing contributions to the Plan up to a maximum of 5% of "qualified cash compensation" for each eligible participating colleague. Non-discretionary (matching) 401(k) contributions to the Plan, for full-time U.S. colleagues, were $1,843 and $1,950, for the six months ended June 30, 2019 and 2020, respectively. The Company also maintains various retirement benefit plans (primarily defined contribution plans) for colleagues of its international subsidiaries. Contributions to these plans were $4,075 and $3,764, for the six months ended June 30, 2019 and 2020, respectively.

The Company also has a nonqualified deferred compensation plan (the "DCP"), under which certain officers and key colleagues may elect to defer the receipt of all or a portion of their bonus compensation. In addition, the Company may make discretionary awards under the DCP on behalf of the participants. Elective participant deferrals and discretionary Company awards are required to be in the form of phantom shares of the Company's Class B Non-Voting Common Stock ("Class B Common Stock"), which are valued for tax and accounting purposes in the same manner as actual shares of Class B Common Stock. All DCP distributions to current colleague participants are made in the form of shares of Class B Common Stock. The Company's discretionary awards made prior to January 1, 2016 vest 20% on the date of grant and 20% on each of the four subsequent anniversary dates. The Company's discretionary awards made on or after January 1, 2016 are 100% vested at the time of grant. No discretionary contributions were made to the DCP during the six months ended June 30, 2019 and 2020.

Amounts in the DCP attributable to certain non-colleague participants are settled in cash and are classified as liabilities which are marked to market at the end of each reporting period. The total liability related to the DCP for non-colleague participants was $2,544 and $2,250 as of December 31, 2019 and June 30, 2020, respectively.

The table below shows compensation (income) expense related to the DCP recorded during the six months ended June 30, 2019 and 2020, respectively:

	Six Months Ended June 30,	
	2019	2020
DCP related compensation (income) expense	$ 295	$ (165)

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 13: Common Stock

***Authorized Common Shares*—**The Company amended and restated its Certificate of Incorporation on April 20, 2018 to authorize 320,000,000 shares of Class A Voting Common Stock ("Class A Common Stock") and 600,000,000 shares of Class B Common Stock. As of December 31, 2019 and June 30, 2020, outstanding shares of Class A Common Stock totaled 11,601,757 and outstanding shares of Class B Common Stock totaled 243,241,192 and 247,607,598, respectively.

Sales, Repurchases, and Issuances of Company Capital Stock

In September 2016, the Company entered into a Class B Common Stock Purchase Agreement with a strategic investor (the "Common Stock Purchase Agreement"), pursuant to which the investor could acquire in a series of transactions up to $200,000 of the Company's Class B Common Stock at the then prevailing fair market value, either directly from selling stockholders, in which case the Company would act as pass through agent, or by funding the Company's repurchase and subsequent sale to the investor of shares acquired by the Company from existing Company stockholders.

The Common Stock Purchase Agreement grants to the strategic investor certain informational and protective rights, including, for so long as the Company remains party to a long-term strategic collaboration agreement with the investor, a pre-initial public offering ("IPO") right of first refusal on any sale of the Company and a post-IPO right to participate in any sale process the Company may undertake.

On April 23, 2018, the Company entered into an amendment to the Common Stock Purchase Agreement, which (i) increased the maximum purchase amount from $200,000 to $250,000 thereunder, (ii) extended the expiration of the agreement from 2026 to 2030, and (iii) granted the Company the right to retain a portion of the shares that would otherwise be sold to the investor.

During the six months ended June 30, 2019, the investor purchased 791,873 shares under the Common Stock Purchase Agreement, with 622,873 of such shares having been repurchased by the Company and re-sold to the investor for consideration of $4,510 and 169,000 shares acquired directly by the investor for consideration of $1,224.

During the six months ended June 30, 2020, the investor purchased 4,574,567 shares under the Common Stock Purchase Agreement, with 3,769,346 of such shares having been repurchased by the Company and re-sold to the investor for consideration of $58,349 and 805,053 shares acquired directly by the investor for consideration of $12,462.

During the six months ended June 30, 2019, the Company issued net 2,657,027 shares of Class B Common Stock to colleagues who exercised their stock options. Of the total options exercised for 3,805,781 shares, 916,965 shares were issued for cash totaling $2,192, and the remaining options for 2,888,816 shares were exercised on a cashless basis, and accordingly, 1,148,754 shares were sold back to the Company to pay for the cost of the options as well as applicable income tax withholdings of $2,161. During the six months ended June 30, 2019, the Company paid $3,149 for 401,352 shares sold back to the Company upon exercise of the Put and Call provisions under the amended option plan (see Note 15).

During the six months ended June 30, 2020, the Company issued net 2,184,628 shares of Class B Common Stock to colleagues who exercised their stock options. Of the total options exercised for 3,410,554 shares, 566,362 shares were issued for cash totaling $2,237, and the remaining options for 2,844,192 shares were exercised on a cashless basis, and accordingly, 1,225,926 shares were sold back to the Company to pay for the cost of the options as well as applicable income tax withholdings of $3,064. During the six months ended June 30, 2020, the Company paid $1,454 for 128,176 shares sold back to the Company upon exercise of the Put and Call provisions under the amended option plan (see Note 15).

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 13: Common Stock (Continued)

During the six months ended June 30, 2019 and 2020, the Company issued 2,230,430 and 2,959,731, respectively, of shares of Class B Common Stock to DCP participants for their distribution. The distribution in shares for the six months ended June 30, 2019 totaled 2,907,630 of which 677,200 shares were sold back to the Company to pay for the cost of applicable income tax withholding of $4,953. The distribution in shares for the six months ended June 30, 2020 totaled 3,137,961 shares of which 178,230 shares were sold back to the Company in the same period to pay for applicable income tax withholdings of $1,830.

During the six months ended June 30, 2019 and 2020, the Company did not award Class B Common Stock in conjunction with profit sharing plan contributions. During the six months ended June 30, 2019 and 2020, the Company repurchased 160,963 and 385,568 shares from its profit sharing plan for $1,213 and $4,428, respectively.

***Selected Terms of Class B Common Stock*—**Pursuant to the terms of the Company's amended and restated Certificate of Incorporation in effect for the periods reported, each share of Class B Common Stock has the same rights and privileges as each share of Class A Common Stock, except that the holders of outstanding shares of Class B Common Stock do not have any right to vote on, or consent with respect to, any matters to be voted on or consented to by the stockholders of the Company except as required by law, and the shares of Class B Common Stock are not included in determining the number of shares voting or entitled to vote on any such matters. Each outstanding share of Class B Common Stock may be converted into one share of Class A Common Stock upon the determination of the Company's board of directors. Additionally, absent a conversion by the board of directors, upon an IPO by the Company, each outstanding share of Class B Common Stock may be automatically converted into the class of common stock being offered.

***Dividends*—**The Company declared cash dividends during the periods presented as follows:

	Dividend Per Share	Amount
2019:		
Second quarter	$ 0.025	$ 6,375
First quarter	0.025	6,268
Total	$ 0.050	$ 12,643
2020:		
Second quarter	$ 0.030	$ 7,771
First quarter	0.030	7,666
Total	$ 0.060	$ 15,437

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 14: Accumulated Other Comprehensive Loss

Accumulated other comprehensive loss consists of the following:

	Foreign Currency Translation	Actuarial (Loss) Gain on Retirement Plan	Total
Balance, December 31, 2018	$ (28,867)	$ (547)	$ (29,414)
Other comprehensive income (loss), before taxes	2,406	16	2,422
Tax expense	—	(6)	(6)
Other comprehensive income (loss), net of taxes	2,406	10	2,416
Balance, June 30, 2019	$ (26,461)	$ (537)	$ (26,998)

	Foreign Currency Translation	Actuarial (Loss) Gain on Retirement Plan	Total
Balance, December 31, 2019	$ (22,908)	$ (1,019)	$ (23,927)
Other comprehensive income (loss), before taxes	(4,503)	41	(4,462)
Tax expense	—	(15)	(15)
Other comprehensive income (loss), net of taxes	(4,503)	26	(4,477)
Balance, June 30, 2020	$ (27,411)	$ (993)	$ (28,404)

Note 15: Equity Awards and Instruments

The Company has equity awards outstanding under its Amended and Restated 2015 Equity Incentive Plan (the "Equity Incentive Plan") which provides for the granting of awards in the form of stock options, stock appreciation rights, dividend equivalent rights, restricted stock, restricted stock units, and stock grants. The Equity Incentive Plan has 50,000,000 shares of Class B Common Stock reserved for issuance and terminates in November 2024.

The following is a summary of activity under the stockholder-approved plan.

Stock Options— Stock options generally vest ratably on each of the first four anniversaries of the grant date. Stock options granted under this plan include Put and Call provisions that allow colleagues who have exercised an option to sell all or part of their shares acquired upon such exercise to the Company at the fair market value at the time of the sale. The exercise period for the Put right begins on the second day after the six-month anniversary of the date the option was exercised and ends after an additional 30 days. The Call right provision allows the Company to purchase all or a part of the shares acquired by a colleague upon exercise of an option, at the fair market value at the time of such purchase. The Company may exercise the Call right at any time within seven months of the later of i) the optionee's termination of service with the Company, or ii) the optionee's (or his or her beneficiary's) exercise of such option after a termination of service.

The Company granted options for a total of 4,816,000 shares on March 22, 2019 and 10,000 shares on May 15, 2019. The fair value of the awards was estimated on the date of grant using the Black-Scholes option pricing model. The grant date fair value of each option to acquire a share of Class B Common Stock was $1.66 and $1.65, respectively.

The Company granted options for a total of 10,000 shares on March 12, 2020. The fair value of the awards was estimated on the date of grant using the Black-Scholes option pricing model. The grant date fair value of each option to acquire a share of Class B Common Stock was $2.49.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 15: Equity Awards and Instruments (Continued)

***Stock Grants*—**Under the Equity Incentive Plan, the Company may grant unrestricted, fully vested shares of Class B Common Stock to eligible colleagues. Any such shares awarded have Put and Call rights similar to those described above with respect to stock options.

The Company did not grant fully vested shares of Class B Common Stock during the six months ended June 30, 2019. The Company granted 17,411 fully vested shares of Class B Common Stock during the six months ended June 30, 2020.

***Restricted Stock*—**Under the Equity Incentive Plan, the Company may grant both time and performance-based shares of restricted Class B Common Stock to eligible colleagues.

For the six months ended June 30, 2019, the Company granted 493,840 shares of restricted stock, all of which were subject to performance-based vesting as determined by the achievement of business growth targets which included growth in annual recurring revenues as well as actual bookings for perpetual licenses and non-recurring services. Annual performance targets were seasonalized and targets were set for quarterly and annual performance periods ending on December 31, 2019. These restricted shares carried dividend, but not voting rights. During the six months ended June 30, 2019, the performance conditions to vesting were satisfied in respect of 111,224 of these shares, of which 18,763 shares were sold back to the Company to settle applicable income tax withholdings of $136.

For the six months ended June 30, 2020, the Company granted 12,454 shares of restricted stock, which are subject to a quarterly time-based vesting schedule ending March 31, 2021. No performance shares were granted during the six months ended June 30, 2020. Of the performance shares that vested in 2019, 8,774 shares were sold back to the Company to settle applicable income tax withholdings of $95, with the remaining shares delivered to participants in the six months ended June 30, 2020. Of the performance shares granted in 2019, 292,131 did not vest and were canceled during the six months ended June 30, 2020.

***Restricted Stock Units*—**Under the Equity Incentive Plan, the Company may grant both time and performance based restricted stock units (“RSUs”) to eligible colleagues, which entitle the grantee to receive a specific number of shares of our Class B Common Stock upon vesting. These shares also have dividend equivalent rights.

No restricted stock units were granted during the six months ended June 30, 2019 or 2020. In 2016, the Company granted RSUs subject to performance-based vesting as determined by the achievement of business growth targets which included growth in annual recurring revenues as well as actual bookings for perpetual licenses and non-recurring services. Annual performance targets were seasonalized and targets were set for quarterly and annual performance periods ending on December 31, 2016. Certain colleagues elected to defer delivery of such shares upon vesting. During the six months ended June 30, 2020, 9,830 shares were delivered to colleagues and 3,168 shares were sold back to the Company to settle income tax withholdings of $26. As of December 31, 2019 and June 30, 2020, 54,770 and 45,151, respectively, of these RSUs remained outstanding.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 15: Equity Awards and Instruments (Continued)

The following is a summary of option activity under the Company's Equity Incentive Plan:

	Options Outstanding	Exercise Price Per Share	
		Range	Weighted Average
Balance, December 31, 2019	18,691,667	$3.50 - $7.24	$ 5.97
Option activity:			
Granted	10,000	10.84	10.84
Exercised	(3,410,554)	3.50 - 7.24	4.43
Canceled	(191,750)	3.50 - 7.24	6.47
Balance, June 30, 2020	15,099,363	$5.23 - $10.84	$ 6.31

The following is a summary of options outstanding and exercisable by exercise price under the Company's Equity Incentive Plan as of June 30, 2020:

Exercise Prices	Number of Options Outstanding	Weighted Remaining Contractual Life (in years)	Exercisable
$5.23 - $6.00	6,328,614	1.30	5,343,930
6.01 - 8.00	8,760,749	3.32	3,068,999
8.01 - 10.84	10,000	4.70	—
Total	15,099,363		8,412,929

For the year ended December 31, 2019 and the six months ended June 30, 2020, the Company received cash proceeds of $3,612 and $2,237, respectively, related to the exercise of stock options.

The following is a summary of the intrinsic value of options outstanding and exercisable under the Company's Equity Incentive Plan as of June 30, 2020:

	Number of Options	Weighted Average Exercise Price	Aggregate Intrinsic Value	Weighted Remaining Contractual Life (in years)
Options as of June 30, 2020				
Outstanding	15,099,363	$ 6.31	$ 138,476	2.5
Exercisable	8,412,929	$ 5.90	$ 80,584	1.9

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 15: Equity Awards and Instruments (Continued)

***Acquisition Options*—**In addition to options granted under the Company's Equity Incentive Plan, in connection with an acquisition completed in March 2018, the Company issued to certain selling shareholder entities options to acquire an aggregate of up to 900,000 shares of Class B Common Stock. The options have a five-year term, vest on the fourth anniversary of the closing of the acquisition, and an initial exercise price of $6.805 per share. The exercise price of the options is subject to a cap and collar adjustment mechanism that automatically reduces (but not to less than $0.01) or increases the exercise price based on the difference between the exercise price and the fair market value of the Company's Class B Common Stock on the exercise date. The fair value of the awards was estimated on the date of grant using the Black-Scholes option pricing model. The grant date fair value of each option was $3.44. Any shares of Class B Common Stock acquired upon exercise of the options are generally entitled to the Put and Call rights summarized above under "Stock Options," and the options contain customary adjustment provisions in case of stock splits, stock dividends, or other corporate transactions. As of December 31, 2019 and June 30, 2020, all options to acquire 900,000 shares remain outstanding. As of June 30, 2020, these options are non-exercisable and have an aggregate intrinsic value of $7,808.

Compensation expense is recognized on a straight-line basis over the vesting period during which colleagues perform related services. During the six months ended June 30, 2019 and 2020, the Company recorded $3,220 and $2,956, respectively, of stock-based compensation expense related to stock options, $805 and $37, respectively, of compensation expense related to restricted stock, and $0 and $219, respectively, of stock-based compensation expense related to grants of fully vested shares.

As of June 30, 2020, there was $9,036 of unrecognized compensation cost related to unvested stock options, which is expected to be recognized over a weighted average period of approximately 2.3 years.

The total intrinsic value of stock options exercised in the six months ended June 30, 2019 and 2020 was $19,995 and $30,536, respectively.

The value of each stock option award was estimated on the date of grant using the Black-Scholes option pricing model. The determination of the fair value of share-based payment awards using an option pricing model is affected by the Company's stock price as well as assumptions regarding a number of complex and subjective variables. These variables include the Company's expected stock price volatility over the term of the awards, actual and projected colleague stock option exercise behaviors, risk-free interest rates, and expected dividends, which are estimated as follows:

Expected volatility. The expected stock price volatility for the Company's common stock was estimated by taking the average historic price volatility for industry peers based on daily price observations over a period equivalent to the expected term of the stock option grants. The Company intends to continue to consistently apply this process using the same or similar public companies until a sufficient amount of historical information regarding the volatility of the Company's own common stock share price becomes available.

Expected dividend yield. Prior to 2015, the Company had never declared or paid a cash dividend. Consequently, the Company used an expected dividend yield of zero for all option grants prior to 2015. In February 2015, the Company's board of directors established a policy to pay a quarterly dividend with the first such quarterly dividend paid in June 2015. While the Company intends to continue paying quarterly dividends, any future determination and amount per share will be subject to the discretion of the Company's board of directors and will be dependent on a number of factors, including the Company's operating results, capital requirements, restrictions under Delaware law, and overall financial conditions, as well as any other factors the Company's board of directors considers relevant.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 15: Equity Awards and Instruments (Continued)

Expected term. The expected term represents the period that the Company's stock-based awards are expected to be outstanding. The expected term is based on the simplified method, which represents the average period from vesting to the expiration of the award.

Risk-free rate. The risk-free interest rate is based on the yields of U.S. Treasury securities with maturities similar to the expected term of the options for each option group.

	Year Ended December 31, 2019	Six Months Ended June 30, 2020
Expected volatility	29.57 %	31.04 %
Expected dividend yield	1.38 %	1.11 %
Risk-free interest rate	2.48 %	1.31 %
Expected term (in years)	3.75	3.75
Weighted average grant date fair value of options issued	$ 1.66	$ 2.49

The fair value of the common stock was determined by the board of directors at each award grant date based upon a variety of factors, including the results obtained from independent third-party valuations, the Company's financial position, and historical financial performance.

The Company paid $3,149 and $1,454 during the six months ended June 30, 2019 and 2020, respectively, to stockholders who exercised their options and elected to sell the shares back to the Company after the mandatory six-month holding period as well as for shares acquired by the Company exercising its call rights.

Note 16: Income Taxes

The Company calculates its interim income tax provision in accordance with FASB ASC Topics 270, *Interim Reporting*, and 740, *Income Taxes*. At the end of each interim period, the Company makes an estimate of the annual United States domestic and foreign jurisdictions' expected effective tax rates and applies these rates to its respective year-to-date taxable income or loss. The computation of the estimated effective tax rates at each interim period requires certain estimates and assumptions including, but not limited to, the expected operating income for the fiscal year, projections of the proportion of income (or loss) earned and taxed in the United States and foreign tax jurisdictions, along with permanent differences, and the likelihood of deferred tax asset utilization. The Company's estimates and assumptions may change as new events occur, additional information is obtained, or as the tax environment changes. Should facts and circumstances change during a period causing a material change to the estimated effective income tax rate, a cumulative adjustment will be recorded.

The income tax provisions for the six months ended June 30, 2019 and 2020 were based on the estimated annual effective income tax rates adjusted for discrete items occurring during the periods presented. During the six months ended June 30, 2019 and 2020, the Company recognized an aggregate consolidated income tax expense of $5,119 and $11,440, respectively, for U.S. domestic and foreign income taxes. During the six months ended June 30, 2019 and 2020, the Company recorded a discrete tax benefit of $3,653 and $6,423, respectively, associated with stock-based compensation. The effective income tax rate of 9.9% for the six months ended June 30, 2019 was lower than the effective income tax rate of 14.1% for the same period in the current year primarily as a result of a change in the timing and mix of U.S. and foreign income.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 17: Fair Value of Financial Instruments

Derivatives Not Designated As Hedging Instrument

On March 31, 2020, the Company entered into an interest rate swap with a notional amount of $200,000 and a ten-year term to reduce the interest rate risk associated with the Company's Credit Facility. The interest rate swap is not designated as a hedging instrument for accounting purposes. The Company accounts for the swap as either an asset or a liability on the balance sheet and carries the derivative at fair value. Gains and losses from the change in fair value are recognized in *Other income (expense), net* and payments related to the swap are recognized in *Interest expense, net* in the consolidated statements of operations. For the six months ended June 30, 2020, the Company recorded a loss of $4,174 in *Other income (expense), net*, and total payments recognized in *Interest expense, net* related to the swap were $110.

Fair Value

The Company applies the provisions of ASC Topic 820, *Fair Value Measurement*, for fair value measurements of financial assets and financial liabilities and for fair value measurements of non-financial items that are recognized or disclosed at fair value in the consolidated financial statements.

The Company's financial instruments include cash equivalents, account receivables, certain other assets, accounts payable, accruals, other current liabilities, and long-term debt.

The carrying values of the Company's financial instruments excluding long-term debt approximate their fair value due to the short-term nature of those instruments. Additionally, as of December 31, 2019 and June 30, 2020, the fair value of the Company's long-term debt approximated its carrying value based upon discounted cash flows at current market rates for instruments with similar remaining terms. The Company considers these valuation inputs to be Level 2 inputs in the fair value hierarchy. Considerable judgment is necessary to interpret the market data and develop estimates of fair values. Accordingly, the estimates presented are not necessarily indicative of the amounts at which these instruments could be purchased, sold, or settled.

A financial asset or liability classification is determined based on the lowest level input that is significant to the fair value measurement. The fair value hierarchy consists of the following three levels:

Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument.

Level 3 inputs are unobservable inputs based on management's own assumptions used to measure assets and liabilities at fair value.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 17: Fair Value of Financial Instruments (Continued)

The following tables provide the financial assets and financial liabilities carried at fair value measured on a recurring basis:

December 31, 2019	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds [1]	$ 70,000	$ —	$ —	$ 70,000
Total assets	$ 70,000	$ —	$ —	$ 70,000
Liabilities:				
Acquisition contingent consideration [2]	$ —	$ —	$ 6,599	$ 6,599
Deferred compensation plan [3]	2,544	—	—	2,544
Total liabilities	$ 2,544	$ —	$ 6,599	$ 9,143

June 30, 2020	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds [1]	$ 61	$ —	$ —	$ 61
Total assets	$ 61	$ —	$ —	$ 61
Liabilities:				
Acquisition contingent consideration [2]	$ —	$ —	$ 5,761	$ 5,761
Interest rate swap [4]	—	4,174	—	4,174
Deferred compensation plan [3]	2,250	—	—	2,250
Total liabilities	$ 2,250	$ 4,174	$ 5,761	$ 12,185

(1) Included in *Cash and cash equivalents* in the accompanying consolidated balance sheets.

(2) Included in *Accruals and other current liabilities* and *Other liabilities* in the accompanying consolidated balance sheets. Acquisition contingent consideration liability is measured at fair value and is based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. The valuation of contingent consideration uses assumptions the Company believes would be made by a market participant.

(3) Included in *Other liabilities*, except for current liabilities of $153 and $99 as of December 31, 2019 and June 30, 2020, respectively, which are included in *Accruals and other current liabilities* in the accompanying consolidated balance sheets.

(4) Included in *Other liabilities* in the accompanying consolidated balance sheets.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 17: Fair Value of Financial Instruments (Continued)

The following table is a reconciliation of the changes in fair value of the Company's financial liabilities which have been classified as Level 3 in the fair value hierarchy for the year ended December 31, 2019 and the six months ended June 30, 2020.

	Year Ended December 31, 2019	Six Months Ended June 30, 2020
Balance, beginning of year	$ 4,316	$ 6,599
Payments	(2,513)	(1,091)
Addition	4,498	1,706
Reclassification	180	—
Change in fair value	62	(1,390)
Foreign currency translation adjustments	56	(63)
Balance, end of period	$ 6,599	$ 5,761

The Company did not have any transfers between levels within the fair value hierarchy.

Note 18: Commitments and Contingencies

Purchase Commitment—In the normal course of business, the Company enters into various purchase commitments for goods and services. As of June 30, 2020, the non-cancelable future cash purchase commitment for services related to the provisioning of the Company's software solutions was $93,400 through May 2023. The Company expects to fully consume its contractual commitment in the ordinary course of operations.

Operating Leases—The Company leases certain facilities, cars, and equipment under operating leases having initial or remaining non-cancellable terms in excess of one year. For details, see Note 8.

Litigation—From time to time, the Company is involved in certain legal actions arising in the ordinary course of business. In management's opinion, based upon the advice of counsel, the outcome of such actions is not expected to have a material adverse effect on the Company's future financial position or results of operations.

Note 19: Geographic Data

Revenues by geographic area are presented as part of the discussion in Note 3. The following table presents the Company's long-lived assets, net of depreciation and amortization by geographic region. See Note 5, Note 6, and Note 8 for further detail around these assets.

	As of December 31, 2019	As of June 30, 2020
Long-lived assets:		
Americas [1]	$ 34,758	$ 56,345
Europe, the Middle East, and Africa	34,039	56,889
Asia/Pacific	7,148	15,211
Total long-lived assets	$ 75,945	$ 128,445

(1) Americas includes the United States, Canada, and Latin America (including the Caribbean).

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 20: Interest Expense, Net

Interest expense, net is comprised of the following:

	Six Months Ended June 30,	
	2019	2020
Interest expense	$(5,021)	$(2,846)
Interest income	547	330
Total interest expense, net	$(4,474)	$(2,516)

Note 21: Other Income (Expense), Net

Other income (expense), net is comprised of the following:

	Six Months Ended June 30,	
	2019	2020
Foreign exchange loss [1]	$(1,588)	$(4,263)
Other income (expense), net [2]	(159)	(2,722)
Total other income (expense), net	$(1,747)	$(6,985)

(1) Foreign exchange loss is primarily attributable to foreign currency translation losses derived primarily from U.S. Dollar denominated cash and cash equivalents, account receivables, and intercompany balances held by foreign subsidiaries. For the six months ended June 30, 2019 and 2020, intercompany finance transactions denominated in U.S. dollars resulted in unrealized foreign currency translation losses of $1,680 and $1,765, respectively.

(2) Other income (expense), net includes a loss from the change in fair value of the Company's interest rate swap of $4,174, partly offset by a gain from the change in fair value of acquisition contingent consideration of $1,390 for the six months ended June 30, 2020 (see Note 17).

Note 22: Earnings Per Share

Earnings per share ("EPS") of Class A and Class B Common Stock amounts are computed using the two-class method required for participating securities. The Company issues certain restricted stock awards determined to be participating securities because holders of such shares have non-forfeitable dividend rights in the event of the Company's declaration of a dividend for common shares. For the six months ended June 30, 2020, there were no participating securities outstanding.

Undistributed earnings allocated to participating securities are subtracted from net income in determining net income attributable to common stockholders. Basic EPS is computed by dividing net income attributable to common stockholders by the weighted-average number of shares of Class A and Class B Common Stock outstanding.

For the calculation of diluted EPS, net income attributable to common stockholders for basic EPS is adjusted by the effect of dilutive securities, including awards under the Company's equity compensation plans. Diluted EPS attributable to common stockholders is computed by dividing the resulting net income attributable to common stockholders by the weighted-average number of fully diluted common shares outstanding.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 22: Earnings Per Share (Continued)

Except with respect to voting and conversion, the rights of the holders of the Company's Class A Common Stock and the Company's Class B Common Stock are identical. Each class of shares has the same rights to dividends and allocation of income (loss) and therefore, earnings per share would not differ under the two-class method. The details of basic and diluted EPS are as follows (in thousands, except per share amounts):

	Six Months Ended June 30,	
	2019	2020
Numerator:		
Net income	$ 46,418	$ 68,745
Less: Net income attributable to participating securities	(12)	—
Net income attributable to Class A and Class B common stockholders	$ 46,406	$ 68,745
Denominator:		
Denominator for basic net income per share—weighted average shares	285,529,476	286,068,766
Effect of dilutive securities:		
Stock options	8,103,779	9,526,468
Denominator for dilutive net income per share	293,633,255	295,595,234
Net income per share, basic	$ 0.16	$ 0.24
Net income per share, diluted	$ 0.16	$ 0.23

No shares were excluded from the computation of diluted net income per share attributable to common stockholders for the periods presented.

Note 23: Subsequent Events

In preparing the consolidated financial statements as of and for the six months ended June 30, 2020, the Company evaluated subsequent events for recognition and measurement through August 7, 2020, the date when the consolidated financial statements were issued.

On July 10, 2020 and July 21, 2020, the Company granted a total of 179,188 shares of restricted stock and restricted stock units and 6,136 shares of restricted stock, respectively, under the Company's Equity Incentive Plan, at a grant date fair value of $15.48 per share, all of which are subject to performance-based vesting as determined by the achievement of certain business growth targets which include growth in annual recurring revenues as well as actual bookings for perpetual licenses and non-recurring services. Annual performance targets are seasonalized and targets are set for quarterly and annual performance periods ending on December 31, 2020. These performance-based restricted shares and units carry dividend, but not voting rights. During the year ending December 31, 2020, the Company estimates it will recognize stock-based compensation expense associated with these awards ranging from $1,721 up to $2,869, with the upper end of the range assuming all performance conditions are achieved in 2020.

On July 10, 2020, the Company granted a total of 189,188 shares of restricted stock and restricted stock units under the Equity Incentive Plan at a grant date fair value of $15.48 per share, of which 179,188 vest ratably on each of the first four anniversaries of the grant date and 10,000 vest ratably beginning on July 13, 2021 and on the three subsequent anniversaries of that date. These restricted shares and units do not have voting rights and any dividends declared accrue on such shares and are paid only upon vesting. The Company estimates the unrecognized stock-based compensation expense associated with these awards to be $2,929, which is expected to be recognized over the four-year vesting period.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES

Notes to Consolidated Financial Statements (Continued)

(in thousands, except share and per share data) (unaudited)

Note 23: Subsequent Events (Continued)

On July 10, 2020, the Company granted a total of 994,912 shares of restricted stock and restricted stock units, including 32,238 restricted stock units that will be settled in cash, under the Equity Incentive Plan at a grant date fair value of $15.48 per share, which vest upon the earlier of the Company's successful completion of its initial public offering or December 31, 2020. These restricted shares and units do not have voting or dividend rights, except in the case of any extraordinary dividend (as described in the Equity Incentive Plan) declared by the Company, if any, which would accrue on such shares and be paid only upon vesting. During the year ending December 31, 2020, the Company estimates it will recognize $14,902 of stock-based compensation expense for the equity-settled awards and compensation expense for the cash-settled awards in amount equal to the Company's initial public offering price multiplied by the number of cash-settled awards outstanding at the time of the initial public offering. This latter expense is not readily determinable as of the date hereof.

On July 21, 2020, the Company granted a total of 1,020,472 shares of restricted stock and restricted stock units including 46,300 restricted stock units that will be settled in cash, under the Equity Incentive Plan at a grant date fair value of $15.48 per share, which vest ratably on each of the first four anniversaries of the grant date. These restricted shares and units do not have voting rights and any dividends declared accrue on such shares and are paid only upon vesting. The Company estimates the unrecognized stock-based compensation expense associated with the equity-settled awards to be $15,080, which is expected to be recognized over the four-year vesting period. The Company is not able to estimate the compensation expense associated with the cash-settled awards, which will be recognized in an amount equal to the number of cash-settled awards outstanding at vesting multiplied by the applicable fair market value of the Company's shares at the time of vesting.

Goldman Sachs & Co. LLC **BofA Securities**

RBC Capital Markets

Baird **KeyBanc Capital Markets** **Mizuho Securities**

Through and including , 2020 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in the offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth all expenses to be paid by the Company in connection with this registration statement and the issuance and sale of our Class B common stock being registered hereby (other than underwriting discounts and commissions). All amounts shown are estimates except for the SEC registration fee, the FINRA filing fee, and The Nasdaq Global Select Market initial listing fee:

	Amount to be Paid
SEC registration fee	$ 12,980
FINRA filing fee	15,500
The Nasdaq Global Select Market initial listing fee	*
Printing expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Custodian, transfer agent, and registrar fees	*
Miscellaneous	*
Total	$ *

* To be provided by amendment.

Item 14. Indemnification of Directors and Officers

Section 102 of the Delaware law allows a corporation to eliminate the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except in cases where the director breached his or her duty of loyalty to the corporation or its stockholders, failed to act in good faith, engaged in intentional misconduct or a knowing violation of the law, willfully or negligently authorized the unlawful payment of a dividend or approved an unlawful stock redemption or repurchase or obtained an improper personal benefit. Shortly following the effectiveness of this registration statement, we expect to adopt an amended and restated certificate of incorporation which will contain a provision that eliminates directors' personal liability as set forth above.

In addition, shortly following the effectiveness of this registration statement, we expect to adopt amended and restated by-laws, which will provide that we shall indemnify our directors and the officers designated by our board of directors to the extent permitted by the Delaware law. Section 145 of the Delaware law provides that a Delaware corporation has the power to indemnify its directors, officers, employees and agents in certain circumstances. Subsection (a) of Section 145 of the Delaware law empowers a corporation to indemnify any director, officer, employee or agent, or former director, officer, employee or agent, who was or is a party, or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding provided that such director, officer, employee or agent acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the corporation and, with respect to any criminal action or proceeding, provided that such director, officer, employee or agent had no reasonable cause to believe that his or her conduct was unlawful.

Subsection (b) of Section 145 of the Delaware law empowers a corporation to indemnify any director, officer, employee or agent, or former director, officer, employee or agent, who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred in connection with the defense or settlement of such action or suit provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification may be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery shall determine that despite the adjudication of liability such person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper.

Section 145 further provides that to the extent that a director or officer or employee of a corporation has been successful in the defense of any action, suit or proceeding referred to in subsections (a) and (b) or in the defense of any claim, issue or matter therein, he or she shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him or her in connection therewith; that indemnification provided by Section 145 shall not be deemed exclusive of any other rights to which the party seeking indemnification may be entitled; and the corporation is empowered to purchase and maintain insurance on behalf of a director, officer, employee or agent of the corporation against any liability asserted against him or her or incurred by him or her in any such capacity or arising out of his or her status as such whether or not the corporation would have the power to indemnify him or her against such liabilities under Section 145; and that, unless indemnification is ordered by a court, the determination that indemnification under subsections (a) and (b) of Section 145 is proper because the director, officer, employee or agent has met the applicable standard of conduct under such subsections shall be made by (1) a majority vote of the directors who are not parties to such action, suit or proceeding, even though less than a quorum, or (2) if there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion, or (3) by the stockholders.

We will have in effect insurance policies for general officers' and directors' liability insurance covering all of our officers and directors.

Item 15. Recent Sales of Unregistered Securities

Since January 1, 2017, the registrant has sold the following unregistered securities. All amounts set forth below have been adjusted to give effect to a May 1, 2018 stock dividend that had the economic effect of a two-for-one stock split.

(a) Stock Option Grants and Exercises

- In 2017, the registrant granted options to purchase 4,541,902 shares of Class B common stock to certain of its colleagues and directors under the 2015 Equity Incentive Plan at an exercise price of $5.38 per share;
- In 2018, the registrant granted options to purchase 5,126,000 shares of Class B common stock to certain of its colleagues and directors under the 2015 Equity Incentive Plan at an exercise price of $6.805 per share;
- In 2019, the registrant granted options to purchase 4,826,000 shares of Class B common stock to certain of its colleagues and directors under the 2015 Equity Incentive Plan at an exercise price of $7.24 per share; and
- In 2020, the registrant granted options to purchase 10,000 shares of Class B common stock to certain of its colleagues and directors under the 2015 Equity Incentive Plan at an exercise price of $10.84 per share.
- In 2017, the registrant issued to colleagues 2,855,792 shares of Class B common stock at per share purchase prices ranging from $0.0488 to $5.23 pursuant to exercises of options granted under various employee stock option plans;

- In 2018, the registrant issued to colleagues 2,824,574 shares of Class B common stock at per share purchase prices ranging from $0.3088 to $5.38 pursuant to exercises of options granted under various employee stock option plans;
- In 2019, the registrant issued to colleagues 3,082,178 shares of Class B common stock at per share purchase prices ranging from $1.785 to $6.805 pursuant to exercises of options granted under various employee stock option plans; and
- From January 1, 2020 to June 30, 2020, the registrant issued to colleagues 2,184,628 shares of Class B common stock at per share purchase prices ranging from $3.495 to $7.24 pursuant to exercises of options granted under the 2015 Equity Incentive Plan.

(b) Stock Grants

- In 2017, the registrant granted to colleagues 109,240 fully-vested shares of Class B common stock pursuant to the 2015 Equity Incentive Plan at par value, 100,730 shares of which were ultimately issued net of tax withholding; and
- In 2020, the registrant issued 17,411 fully-vested shares of Class B common stock to independent directors as compensation for board service, including pursuant to the Bentley Systems, Incorporated Independent Director Compensation Policy.

(c) Restricted Stock Unit (“RSU”) Grants and Vesting

- In 2017, the registrant issued 43,240 shares of Class B common stock at par value pursuant to vested RSUs under the 2015 Equity Incentive Plan; and
- In 2019, the registrant issued 11,348 shares of Class B common stock at par value pursuant to vested RSUs under the 2015 Equity Incentive Plan; and
- In 2020, the registrant issued 23,592 shares of Class B common stock at par value pursuant to vested RSUs under the 2015 Equity Incentive Plan.

(d) Restricted Stock Award Grants and Vesting

- In 2017, the registrant issued 240,672 shares of restricted Class B common stock to colleagues under the 2015 Equity Incentive Plan;
- In 2018, the registrant issued 570,286 shares of restricted Class B common stock to colleagues under the 2015 Equity Incentive Plan;
- In 2019, the registrant issued 493,840 shares of restricted Class B common stock to colleagues under the 2015 Equity Incentive Plan;
- In 2020, the registrant issued 2,389,896 shares of restricted Class B common stock to colleagues under the 2015 Equity Incentive Plan; and
- In 2020, the registrant issued 12,454 shares of restricted Class B common stock to independent directors pursuant to the Bentley Systems, Incorporated Independent Director Compensation Policy.
- In 2017, the registrant issued to colleagues 85,912 shares of Class B common stock at par value pursuant to vested restricted stock awards under the 2015 Equity Incentive Plan;
- In 2018, the registrant issued to colleagues 296,013 shares of Class B common stock at par value pursuant to vested restricted stock awards under the 2015 Equity Incentive Plan;
- In 2019, the registrant issued to colleagues 261,104 shares of Class B common stock at par value pursuant to vested restricted stock awards under the 2015 Equity Incentive Plan; and
- In 2020, the registrant issued to colleagues 60,221 shares of Class B common stock at par value pursuant to vested restricted stock awards under the 2015 Equity Incentive Plan.

(e) Non-Qualified Deferred Compensation Plan Distributions

- In 2017, the registrant issued 1,526,494 shares of Class B common stock at par value to colleagues in connection with distributions from the Non-Qualified Deferred Compensation Plan;
- In 2018, the registrant issued 2,332,585 shares of Class B common stock at par value to colleagues in connection with distributions from the Non-Qualified Deferred Compensation Plan;
- In 2019, the registrant issued 2,322,983 shares of Class B common stock at par value to colleagues in connection with distributions from the Non-Qualified Deferred Compensation Plan; and
- From January 1, 2020 to June 30, 2020, the registrant issued 2,959,731 shares of Class B common stock at par value to colleagues in connection with distributions from the Non-Qualified Deferred Compensation Plan.

(f) Other Issuances

- In 2017, the registrant issued and sold an aggregate of 6,035,736 shares of Class B common stock to Siemens Corporation pursuant to the Common Stock Purchase Agreement. 4,336,940 of such shares were sold at a per share price of $5.38, and 1,698,796 of such shares were sold at a per share price of $5.73;
- In 2018, the registrant issued and sold an aggregate of 2,139,466 shares of Class B common stock to Siemens Corporation pursuant to the Common Stock Purchase Agreement. 1,249,067 of such shares were sold at a per share price of $6.805, and 890,399 of such shares were sold at a per share price of $8.67;
- In 2018, the registrant issued and sold 57,670 restricted shares of Class B common stock to a colleague for a per share price of $8.67;
- In 2018, the registrant issued options to acquire a total of 900,000 shares of Class B common stock to five entities in connection with the acquisition of all the outstanding equity interests of a company at an exercise price of $6.805 per share;
- In 2019, the registrant issued and sold an aggregate of 622,873 shares of Class B common stock to Siemens Corporation pursuant to the Common Stock Purchase Agreement at a per share price of $7.24; and
- In 2020, the registrant issued and sold an aggregate of 3,769,346 shares of Class B common stock to Siemens Corporation pursuant to the Common Stock Purchase Agreement at a per share price of $15.48.

The offers, sales and issuances of these securities were exempt from registration under the Securities Act in reliance upon Rule 701 promulgated under the Securities Act as transactions under compensatory benefit plans and contracts relating to compensation in compliance with Rule 701 or in reliance upon Section 4(a)(2) of the Securities Act as transactions by an issuer not involving any public offering.

The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and either received or had adequate access, through employment, business or other relationships, to information about us. The sales of these securities were made without general solicitation or advertising and without the involvement of any underwriter.

Item 16. Exhibits and Financial Statement Schedules

(a) Exhibits.

Exhibit Number	Description
1.1*	Form of Underwriting Agreement
3.1*	Form of Amended and Restated Certificate of Incorporation of Bentley Systems, Incorporated, to be in effect shortly following the effectiveness of the registration statement
3.2*	Form of Amended and Restated By-Laws of Bentley Systems, Incorporated, to be in effect shortly following the effectiveness of the registration statement
4.1*	Form of Registrant's Class B common stock certificate of Bentley Systems, Incorporated
5.1*	Opinion of Simpson Thacher & Bartlett LLP
10.1	Amended and Restated Credit Agreement, dated as of December 19, 2017, by and among the Registrant, PNC Bank National Association, as administrative agent, and the lenders party thereto
10.2	Common Stock Purchase Agreement, by and among the Registrant, Siemens AG, and the persons listed as "Key Holders" therein, dated September 23, 2016, as amended on October 28, 2016, and April 23, 2018.
10.3	Registration Rights Agreement, dated as of January 24, 2017, by and between the Registrant and Siemens Corporation
10.4†*	Bentley Systems, Incorporated Bonus Pool Plan (as amended and restated, effective as of September 23, 2015), as amended
10.5†*	Amended and Restated Bentley Systems, Incorporated Bonus Pool Plan, effective as of , 2020
10.6†	Bentley Systems, Incorporated 2015 Equity Incentive Plan, as amended and restated effective as of May 29, 2018
10.7†*	Bentley Systems, Incorporated Nonqualified Deferred Compensation Plan, as amended and restated effective as of January 1, 2015
10.8†*	Bentley Systems, Incorporated Nonqualified Deferred Compensation Plan for Non-Employee Directors, as amended and restated as of January 1, 2015
10.9†*	Bentley Systems, Incorporated 2020 Omnibus Incentive Plan, effective as of , 2020
10.10†*	Bentley Systems, Incorporated Global Employee Stock Purchase Plan, effective as of , 2020
21.1*	List of Subsidiaries of Registrant
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm
23.2*	Consent of Simpson Thacher & Bartlett LLP (included in Exhibit 5.1)
23.3	Consent of Cambashi Limited
23.4	Consent of Janet Haugen
24.1	Power of Attorney (included on signature page)

* To be filed by amendment.

† Indicates management contract or plan.

(b) Financial Statement Schedules. All financial statement schedules are omitted because they are not applicable or the information is included in the registrant's consolidated financial statements or related notes included in the prospectus that is part of this registration statement.

Item 17. Undertakings

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers, and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer, or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The registrant hereby further undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective; and

(2) For purposes of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Exton, Pennsylvania on this 21st day of August, 2020.

BENTLEY SYSTEMS, INCORPORATED

By: /s/ David J. Hollister
Name: David J. Hollister
Title: Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Gregory S. Bentley, David J. Hollister, and David R. Shaman, and each of them, as his true and lawful attorney-in-fact and agent with full power of substitution, for him in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments) and any registration statement related thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought, and to file the same, with all exhibits thereto and other documents in connection therewith, with the SEC, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute, may lawfully do or cause to be done by virtue hereof. Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Gregory S. Bentley Gregory S. Bentley	Chief Executive Officer and Director (Principal Executive Officer)	August 21, 2020
/s/ David J. Hollister David J. Hollister	Chief Financial Officer (Principal Financial Officer)	August 21, 2020
/s/ Werner Andre Werner Andre	Chief Accounting Officer (Principal Accounting Officer)	August 21, 2020
/s/ Keith A. Bentley Keith A. Bentley	Director	August 21, 2020
/s/ Barry J. Bentley Barry J. Bentley	Director	August 21, 2020
/s/ Raymond B. Bentley Raymond B. Bentley	Director	August 21, 2020
/s/ Kirk B. Griswold Kirk B. Griswold	Director	August 21, 2020
/s/ Brian F. Hughes Brian F. Hughes	Director	August 21, 2020

Exhibit 10.1

EXECUTION VERSION

PNC BANK, NATIONAL ASSOCIATION

AMENDED AND RESTATED
CREDIT AGREEMENT

dated as of

December 19, 2017,

among

BENTLEY SYSTEMS, INCORPORATED,

The LENDERS Party Hereto

and

PNC BANK, NATIONAL ASSOCIATION,
as Administrative Agent

PNC CAPITAL MARKETS LLC,
CITIZENS BANK, N.A., and
WELLS FARGO CAPITAL FINANCE, LLC,
as Joint Lead Arrangers and Joint Bookrunners

WELLS FARGO CAPITAL FINANCE, LLC and
CITIZENS BANK, N.A.
as Syndication Agents

BANK OF AMERICA, N.A. and
TD BANK, N.A.,
as Documentation Agents

TABLE OF CONTENTS

SCHEDULES:

EXHIBITS:

This AMENDED AND RESTATED CREDIT AGREEMENT is dated as of December 19, 2017, among BENTLEY SYSTEMS, INCORPORATED, the LENDERS party hereto and PNC BANK, NATIONAL ASSOCIATION, as Administrative Agent.

RECITALS:

A. The Borrower (as defined below), the lenders party thereto (including the Departing Lenders, as defined below) and PNC Bank, National Association, as Administrative Agent, are currently party to a certain Credit Agreement dated as of February 2, 2012 (as heretofore amended, modified or otherwise supplemented, the "Existing Credit Agreement").

B. The Borrower, the Lenders and the Administrative Agent have agreed to enter into this Agreement in order to (i) amend and restate the Existing Credit Agreement in its entirety, (ii) re-evidence the Obligations under, and as defined in, the Existing Credit Agreement, which shall be repayable in accordance with the terms of this Agreement and (iii) set forth the terms and conditions under which the Lenders will, from time to time, make loans to or for the benefit of the Borrower and issue letters of credit for the account of the Borrower.

C. The parties hereto intend that this Agreement not constitute a novation of the obligations and liabilities of the parties under the Existing Credit Agreement or be deemed to evidence or constitute full repayment of such obligations and liabilities, but that this Agreement amend and restate in its entirety the Existing Credit Agreement and re-evidence the obligations and liabilities of the Borrower outstanding thereunder, which shall be payable in accordance with the terms hereof.

D. The Borrower confirms that all obligations under the applicable "Loan Documents" (as referred to and defined in the Existing Credit Agreement) shall continue in full force and effect as modified or restated by the Loan Documents (as referred to and defined herein), and that, from and after the Restatement Effective Date (as defined herein), all references to the "Credit Agreement" contained in any such existing "Loan Documents" shall be deemed to refer to this Agreement.

NOW, THEREFORE, the parties hereto, in consideration of their mutual covenants and agreements hereinafter set forth and intending to be legally bound hereby, covenant and agree as follows:

ARTICLE I

Definitions

SECTION 1.01. Defined Terms. As used in this Agreement, the following terms have the meanings specified below:

"ABR", when used in reference to any Loan or Borrowing, refers to whether such Loan, or the Loans comprising such Borrowing, shall bear interest at a rate determined by reference to the Alternate Base Rate.

"Accepting Lender" has the meaning set forth in Section 2.22(a).

"Adjusted Consolidated Net Income" means, for any period, the net income or loss of the Borrower and its consolidated Subsidiaries for such period, determined on a consolidated basis in accordance with GAAP; provided that there shall be excluded (a) the income of any Person that is not a consolidated Subsidiary, except to the extent of the amount of cash dividends or similar cash distributions actually paid by such Person to the Borrower or, subject to clauses (b) and (c) below, any consolidated Subsidiary during such period, (b) the income of, and any amounts referred to in clause (a) above paid to, any consolidated Subsidiary (other than any Subsidiary Loan Party) to the extent that, on the date of determination, the declaration or payment of cash dividends or similar cash distributions by such Subsidiary is not permitted without any prior approval of any Governmental Authority that has not been obtained or is not permitted by the operation of the terms of the organizational documents of such Subsidiary, any agreement or other instrument binding upon the Borrower or such Subsidiary or any Law applicable to such Subsidiary, unless such restrictions with respect to the payment of cash dividends and other similar cash distributions have been legally and effectively waived, and (c) the income or loss of, and any amounts referred to in clause (a) above paid to, any consolidated Subsidiary that is not wholly owned by the Borrower to the extent such income or loss or such amounts are attributable to the noncontrolling interest in such consolidated Subsidiary.

"Administrative Agent" means PNC Bank, National Association, in its capacity as administrative agent and collateral agent hereunder and under the other Loan Documents, and its successors in such capacity as provided in Article VIII.

"Administrative Questionnaire" means an Administrative Questionnaire in a form supplied by the Administrative Agent.

"Affected Class" has the meaning set forth in Section 2.22(a).

"Affiliate" means, with respect to a specified Person, another Person that directly or indirectly Controls or is Controlled by or is under common Control with the Person specified; provided that for purposes of Section 6.09, the term "Affiliate" also means any Person that is a director or an executive officer of the Person specified, any Person that directly or indirectly beneficially owns Equity Interests in the Person specified representing 5% or more of the aggregate ordinary voting power or the aggregate equity value represented by the issued and outstanding Equity Interests in the Person specified and any Person that would be an Affiliate of any such beneficial owner pursuant to this definition (but without giving effect to this proviso).

"Aggregate Revolving Commitment" means the sum of the Revolving Commitments of all the Lenders.

"Aggregate Revolving Exposure" means the sum of the Revolving Exposures of all the Lenders.

"Alternate Base Rate" means, for any day, a fluctuating per annum rate of interest equal to the highest of (a) the Prime Rate in effect on such day, (b) the Overnight Bank Funding Rate in effect on such day plus ½ of 1% and (c) the Daily LIBOR Rate in effect on such day plus one hundred basis points (1.00%). If for any reason the Administrative Agent shall have determined (which determination shall be conclusive absent manifest error) that it is unable to ascertain the Overnight Bank Funding Rate or the Daily LIBOR Rate for any reason, the Alternate Base Rate shall be determined without regard to clause (b) or (c), as the case may be, of the first sentence of this definition until the circumstances giving rise to such inability no longer exist. Any change in the Alternate Base Rate due to a change in the Prime Rate, the Overnight Bank Funding Rate or the Daily LIBOR Rate shall be effective on the effective date of such change in the Prime Rate, the Overnight Bank Funding Rate or the Daily LIBOR Rate, respectively. Notwithstanding the foregoing, if the Alternate Base Rate as determined above would be less than zero (0.00), such rate shall be deemed to be zero (0.00) for purposes of this Agreement.

"Anti-Terrorism Laws" means any Laws relating to terrorism, trade sanctions programs and embargoes, import/export licensing, money laundering or bribery (including the FCPA), and any regulation, order, or directive promulgated, issued or enforced pursuant to such Laws (including Executive Order No. 13224, the USA Patriot Act, the Laws comprising or implementing the Bank Secrecy Act, and the Laws administered or enforced by the United States Treasury Department's Office of Foreign Asset Control, the United States Department of State, the United Nations Security Council, the European Union, Her Majesty's Treasury or other relevant applicable sanctions authority), all as amended, renewed, extended, supplemented or replaced from time to time.

"Applicable Percentage" means, at any time, with respect to any Lender, the percentage of the Aggregate Revolving Commitment represented by such Lender's Revolving Commitment at such time; provided that if any Defaulting Lender exists at such time, the Applicable Percentages shall be calculated disregarding such Defaulting Lender's Revolving Commitment. If the Revolving Commitments have terminated or expired, the Applicable Percentages shall be determined based upon the Revolving Commitments most recently in effect, giving effect to any assignments and to any Lender's status as a Defaulting Lender at the time of determination.

"Applicable Rate" means, for any day, with respect to any ABR Loan or Eurocurrency Loan, or with respect to the commitment fees payable hereunder, the applicable rate per annum set forth below under the caption "ABR Spread", "Eurocurrency Spread" or "Commitment Fee Rate", as the case may be, based upon the Net Leverage Ratio as of the end of the fiscal quarter of the Borrower for which consolidated financial statements have theretofore been most recently delivered pursuant to Section 5.01(a) or 5.01(b); provided that until the day on which the consolidated financial statements for the fiscal year ending December 31, 2017 are due to be delivered to the Administrative Agent pursuant to Section 5.01(a), the Applicable Rate shall, subject to the last sentence of this definition, be in Category 2:

Category:	Net Leverage Ratio:	ABR Spread	Eurocurrency Spread	Commitment Fee Rate
Category 1	x < 1.00	0.00%	1.000%	0.150%
Category 2	1.00 ≤ x < 1.50	0.250%	1.250%	0.175%
Category 3	1.50 ≤ x < 2.00	0. 500%	1.500%	0.200%
Category 4	2.00 ≤ x < 2.50	0.750%	1.750%	0.225%
Category 5	2.50 ≤ x < 3.00	1.000%	2.000%	0.250%
Category 6	x ≥ 3.00	1.250%	2.250%	0.300%

For purposes of the foregoing, each change in the Applicable Rate resulting from a change in the Net Leverage Ratio shall be effective on the day on which the consolidated financial statements indicating such change are due to be delivered to the Administrative Agent pursuant to Section 5.01(a) or 5.01(b), as the case may be. Notwithstanding the foregoing, the Applicable Rate shall be based on the rates per annum set forth in Category 6 (i) at any time that an Event of Default has occurred and is continuing or (ii) if the Borrower fails to deliver the consolidated financial statements required to be delivered pursuant to Section 5.01(a) or 5.01(b) or any Compliance Certificate required to be delivered pursuant hereto, in each case within the time periods specified herein for such delivery, during the period commencing on and including the day of the occurrence of a Default resulting from such failure and until the delivery thereof.

"Approved Fund" means any Person (other than a natural person) that is engaged in making, purchasing, holding or investing in commercial loans and similar extensions of credit in the ordinary course and that is administered or managed by (a) a Lender, (b) an Affiliate of a Lender or (c) an entity or an Affiliate of an entity that administers or manages a Lender.

"Arrangers" means PNC Capital Markets LLC, Wells Fargo Capital Finance, LLC and Citizens Bank, N.A., in their capacity as joint lead arrangers and joint bookrunners for the credit facilities provided for herein.

"Assignment and Assumption" means an assignment and assumption entered into by a Lender and an Eligible Assignee, with the consent of any Person whose consent is required by Section 9.04, and accepted by the Administrative Agent, in the form of Exhibit A or any other form approved by the Administrative Agent.

"Bail-In Action" means the exercise of any Write-Down and Conversion Powers by the applicable EEA Resolution Authority in respect of any liability of an EEA Financial Institution.

"Bail-In Legislation" means, with respect to any EEA Member Country implementing Article 55 of Directive 2014/59/EU of the European Parliament and of the Council of the European Union, the implementing law for such EEA Member Country from time to time which is described in the EU Bail-In Legislation Schedule.

"Bank Guarantee" means a guarantee issued or to be issued by a bank or other financial institution at the request of, and to guarantee or otherwise provide credit support for the obligations of, a Foreign Subsidiary.

"Bank Guarantee Facility" means a facility entered into by a bank or other financial institution for the issuance of one or more Bank Guarantees.

"Bankruptcy Event" means, with respect to any Person, that such Person has become the subject of a bankruptcy or insolvency proceeding, or has had a receiver, conservator, trustee, administrator, custodian, assignee for the benefit of creditors or similar Person charged with the reorganization or liquidation of its business appointed for it, or, in the good faith determination of the Administrative Agent, has taken any action in furtherance of, or indicating its consent to, approval of, or acquiescence in, any such proceeding or appointment; provided that a Bankruptcy Event shall not result solely by virtue of any ownership interest, or the acquisition of any ownership interest, in such Person by a Governmental Authority or instrumentality thereof; provided further that such ownership interest does not result in or provide such Person with immunity from the jurisdiction of courts within the United States of America or from the enforcement of judgments or writs of attachment on its assets or permit such Person (or such Governmental Authority or instrumentality) to reject, repudiate, disavow or disaffirm any contracts or agreements made by such Person.

"Base Rate Option" means the option of the Borrower to have Revolving Loans bear interest at the Alternate Base Rate pursuant to the provisions hereof.

"Bentley Brothers" means Keith A. Bentley, Raymond B. Bentley, Gregory S. Bentley, Barry J. Bentley and Richard P. Bentley.

"Board of Governors" means the Board of Governors of the Federal Reserve System of the United States of America.

"Borrower" means Bentley Systems, Incorporated, a Delaware corporation.

"Borrower Calculated Dollar Equivalent" means, with respect to any amount of any currency, the equivalent amount of such currency expressed in Dollars as reasonably determined by the Borrower based on the market rates then prevailing.

"Borrower Parent Company" means any Person of which the Borrower is a direct or indirect wholly owned Subsidiary.

"Borrowing" means (a) Loans of the same Class and Type made, converted or continued on the same date and, in the case of Eurocurrency Loans, as to which a single Interest Period is in effect, or (b) a Swingline Loan.

"Borrowing Date" means, with respect to any Eurocurrency Loan, the date for the making thereof or the renewal thereof, which shall be a Business Day.

"Borrowing Request" means a request by the Borrower for a Borrowing in accordance with Section 2.03 or 2.04, as applicable, which shall be, in the case of any such written request, in the form of Exhibit B-1 or B-2, as applicable, or any other form approved by the Administrative Agent.

"Borrowing Tranche" means specified Borrowings outstanding as follows: (a) any Loans (other than Swingline Loans) to which a LIBO Rate Option applies which become subject to the same Interest Rate Option under the same Borrowing Request by the Borrower and which have the same Interest Period shall constitute one Borrowing Tranche, (b) all Loans (other than Swingline Loans) to which a Base Rate Option applies shall constitute one Borrowing Tranche, (c) all Swingline Loans in an Optional Currency under the same Borrowing Request by the Borrower and which have the same Interest Period and which are denominated in the same Optional Currency shall constitute one Borrowing Tranche; and (d) all Swingline Loans in Dollars shall be one Borrowing Tranche.

"Business Day" means any day that is not a Saturday, Sunday or a legal holiday on which commercial banks are authorized or required by Law to be closed for business in Pittsburgh, Pennsylvania and if the applicable Business Day relates to any Loan to which the LIBO Rate Option applies, such day must also be a day on which dealings are carried on in the Relevant Interbank Market.

"Capital Lease Obligations" of any Person means the obligations of such Person to pay rent or other amounts under any lease of (or other arrangement conveying the right to use) real or personal property, or a combination thereof, which obligations are required to be classified and accounted for as capital leases on a balance sheet of such Person under GAAP; the amount of such obligations shall be the capitalized amount thereof determined in accordance with GAAP, and the final maturity of such obligations shall be the date of the last payment of such or any other amounts due under such lease (or other arrangement) prior to the first date on which such lease (or other arrangement) may be terminated by the lessee without payment of a premium or a penalty. For purposes of Section 6.02, a Capital Lease Obligation shall be deemed to be secured by a Lien on the property being leased and such property shall be deemed to be owned by the lessee.

"Cash Management Agreements" has the meaning assigned thereto in Section 2.04(h).

"CEA" means the Commodity Exchange Act (7 U.S.C. §1 et seq.), as amended from time to time, and any successor statute.

"CFC" means (a) each Person that is a "controlled foreign corporation" for purposes of the Code and (b) each subsidiary of any such controlled foreign corporation.

"CFTC" means the Commodity Futures Trading Commission.

"Change in Control" means (a) prior to an IPO, the failure by the Permitted Holders to own, beneficially and of record, Equity Interests in the Borrower representing at least a majority of the aggregate ordinary voting power represented by the issued and outstanding Equity Interests in the Borrower; (b) after an IPO, (i) the failure by the Permitted Holders to own, beneficially and of record, Equity Interests in the Borrower representing at least 20% of the aggregate ordinary voting power represented by the issued and outstanding Equity Interests in the Borrower or (ii) the acquisition of ownership, directly or indirectly, beneficially or of record, by any Person or group (within the meaning of the Exchange Act and the rules of the SEC

thereunder), other than the Permitted Holders, of Equity Interests in the Borrower representing more than 35% of the aggregate ordinary voting power represented by the issued and outstanding Equity Interests in the Borrower, unless the Permitted Holders collectively own, beneficially and of record, Equity Interests in the Borrower representing a greater percentage of the aggregate ordinary voting power represented by the issued and outstanding Equity Interests in the Borrower than such Person or group; (c) individuals who were (i) directors of the Borrower on the date hereof (or on the date of an IPO were directors of any Borrower Parent Company), (ii) nominated by the board of directors of the Borrower (or, in the case of any Borrower Parent Company, nominated after the date of an IPO by the board of directors of such Borrower Parent Company) or (iii) appointed by directors who were directors of the Borrower on the date hereof (or, in the case of any Borrower Parent Company, were directors of such Borrower Parent Company on the date of an IPO) or were nominated as provided in clause (ii) above, ceasing to occupy a majority of the seats (excluding vacant seats) on the board of directors of the Borrower (or such Borrower Parent Company); (d) the acquisition of direct or indirect Control of the Borrower by any Person or group (within the foregoing meaning) other than the Permitted Holders; or (e) the occurrence of any "change in control" (or similar event, however denominated) with respect to the Borrower (or any Borrower Parent Company) under and as defined in any indenture or other agreement or instrument evidencing or governing the rights of the holders of any Material Indebtedness of the Borrower or any Subsidiary, in each case that results in such Material Indebtedness becoming due prior to its scheduled maturity or that enables or permits (with or without the giving of notice, the lapse of time or both) the holder or holders of such Material Indebtedness, or any trustee or agent on its or their behalf, to cause such Material Indebtedness to become due, or to require the prepayment, repurchase, redemption or defeasance thereof, prior to its scheduled maturity. For purposes of clause (b) above, any Equity Interests in the Borrower owned beneficially (but not of record) by any Permitted Holder as a result of such Permitted Holder owning, beneficially and of record, Equity Interests in any Borrower Parent Company shall be deemed to be owned of record by such Permitted Holder.

"Change in Law" means the occurrence, after the Restatement Effective Date, of any of the following: (a) the adoption or taking effect of any Law, (b) any change in any Law or in the administration, interpretation, implementation or application thereof by any Governmental Authority or (c) the making or issuance of any request, rule, guideline or directive (whether or not having the force of Law) by any Governmental Authority; provided that notwithstanding anything herein to the contrary, (i) the Dodd-Frank Wall Street Reform and Consumer Protection Act and all requests, rules, regulations, guidelines, interpretations or directives thereunder or issued in connection therewith (whether or not having the force of Law) and (ii) all requests, rules, regulations, guidelines, interpretations or directives promulgated by the Bank for International Settlements, the Basel Committee on Banking Supervision (or any successor or similar authority) or the United States or foreign regulatory authorities (whether or not having the force of Law), in each case pursuant to Basel III, shall in each case be deemed to be a Change in Law regardless of the date enacted, adopted, issued, promulgated or implemented.

"CIP Regulations" has the meaning specified in the last paragraph of Article VIII.

"Class", when used in reference to (a) any Loan or Borrowing, refers to whether such Loan, or the Loans comprising such Borrowing, are Revolving Loans or Swingline Loans,

and (b) any Lender, refers to whether such Lender has a Loan or Commitment of a particular Class.

"Code" means the Internal Revenue Code of 1986, as amended and the rules and regulations thereunder, as from time to time in effect.

"Collateral" means any and all assets, whether real or personal, tangible or intangible, on which Liens are purported to be granted pursuant to the Security Documents as security for the Secured Obligations.

"Collateral Agreement" means the Guarantee and Collateral Agreement, dated as of the Original Closing Date, among the Borrower, the other Loan Parties and the Administrative Agent, substantially in the form of Exhibit C, together with all supplements thereto.

"Collateral and Guarantee Requirement" means, at any time, the requirement that:

(a) the Administrative Agent shall have received from the Borrower and each Domestic Subsidiary either (i) a counterpart of the Collateral Agreement duly executed and delivered on behalf of such Person on the Original Closing Date or (ii) in the case of any Person that became a Domestic Subsidiary after the Original Closing Date or becomes a Domestic Subsidiary after the Restatement Effective Date, a supplement to the Collateral Agreement, in the form specified therein, duly executed and delivered on behalf of such Person, together with documents and opinions of the type referred to in Sections 4.01(b) and 4.01(k) with respect to such Domestic Subsidiary;

(b) all Equity Interests in any Subsidiary owned by or on behalf of any Loan Party shall have been pledged pursuant to the Collateral Agreement and, in the case of Equity Interests in any Foreign Subsidiary, where the Administrative Agent so requests in connection with the pledge of such Equity Interests, a Foreign Pledge Agreement (provided that the Loan Parties shall not be required to pledge more than 65% of the outstanding voting Equity Interests in any Foreign Subsidiary (including any CFC)), and the Administrative Agent shall, to the extent required by the Collateral Agreement, have received certificates or other instruments representing all such Equity Interests, together with undated stock powers or other instruments of transfer with respect thereto endorsed in blank;

(c) (i) all Indebtedness of the Borrower and each Subsidiary and (ii) all Indebtedness of any other Person in a principal amount of $500,000 or more that, in each case, is owing to any Loan Party shall be evidenced by a promissory note and shall have been pledged pursuant to the Collateral Agreement, and the Administrative Agent shall have received all such promissory notes, together with undated instruments of transfer with respect thereto endorsed in blank;

(d) all documents and instruments, including Uniform Commercial Code financing statements, required by applicable Law or reasonably requested by the Administrative Agent to be filed, registered or recorded to create the Liens intended to be created by the Security Documents and perfect such Liens to the extent required by, and

with the priority required by, the Security Documents, shall have been filed, registered or recorded or delivered to the Administrative Agent for filing, registration or recording;

(e) [Intentionally Omitted];

(f) with respect to each deposit account (other than (i) any deposit account the funds in which are used, in the ordinary course of business, solely for the payment of salaries and wages, workers' compensation and similar expenses, (ii) any deposit account that is a zero-balance disbursement account, (iii) any deposit account the funds in which consist solely of (A) funds held by the Borrower or any Subsidiary in trust for any director, officer or employee of the Borrower or any Subsidiary or any employee benefit plan maintained by the Borrower or any Subsidiary or (B) funds representing deferred compensation for the directors and employees of the Borrower and the Subsidiaries and (iv) deposit accounts the daily balance in which does not at any time exceed $500,000 for all such accounts) and each securities account (other than any securities account the securities entitlements in which consist solely of (1) securities entitlements held by the Borrower or any Subsidiary in trust for any director, officer or employee of the Borrower or any Subsidiary or any employee benefit plan maintained by the Borrower or any Subsidiary or (2) securities entitlements representing deferred compensation for the directors and employees of the Borrower and the Subsidiaries) maintained by any Loan Party with any depositary bank or securities intermediary, the Administrative Agent shall have received a counterpart, duly executed and delivered by the applicable Loan Party and such depositary bank or securities intermediary, as the case may be, of a Control Agreement;

(g) each Loan Party shall have obtained all consents and approvals required to be obtained by it in connection with the execution and delivery of all Security Documents to which it is a party, the performance of its obligations thereunder and the granting by it of the Liens thereunder.

The foregoing definition shall not require (a) the creation or perfection of pledges of or security interests in, or the obtaining of legal opinions or other deliverables with respect to, particular assets of the Loan Parties (including Equity Interests in any Foreign Subsidiary), or the provision of Guarantees by any Subsidiary, if, and for so long as, the Administrative Agent, in consultation with the Borrower, determines that the cost of creating or perfecting such pledges or security interests in such assets, legal opinions or other deliverables in respect of such assets, or providing such Guarantees (taking into account any adverse tax consequences to the Borrower and its Affiliates (including the imposition of withholding or other material taxes)), shall be excessive in view of the benefits to be obtained by the Lenders therefrom or (b) the granting of any mortgage or deed of trust on any parcel of real property (as opposed to personal property). The Administrative Agent may grant extensions of time for the creation and perfection of security interests in or the obtaining of legal opinions or other deliverables with respect to particular assets or the provision of any Guarantee by any Subsidiary (including extensions beyond the Restatement Effective Date or in connection with assets acquired, or Subsidiaries formed or acquired, after the Restatement Effective Date) where it determines that such action cannot be accomplished without undue effort or expense by the time or times at which it would otherwise be required to be accomplished by this Agreement or the Security Documents.

"Commitment" means, as to any Lender, its Revolving Commitment and, in the case of PNC, its Swingline Loan Commitment, and "Commitments" shall mean the aggregate of the Revolving Commitments and Swingline Loan Commitment of all of the Lenders.

"Common Stock Purchase Agreement" means that certain stock purchase agreement, dated as of September 23, 2016, by and among the Borrower, Siemens AG and certain stockholders of the Borrower.

"Compliance Certificate" means a Compliance Certificate in the form of Exhibit D or any other form approved by the Administrative Agent.

"Computation Date" has the meaning specified in Section 2.23(b).

"Connection Income Taxes" means Other Connection Taxes that are imposed on or measured by net income (however denominated) or that are franchise Taxes or branch profits Taxes.

"Consolidated Cash Interest Expense" means, for any period, the excess of (a) the sum, without duplication, of (i) the interest expense (including imputed interest expense in respect of Capital Lease Obligations) of the Borrower and its consolidated Subsidiaries for such period, determined on a consolidated basis in accordance with GAAP, (ii) any interest or other financing costs becoming payable during such period in respect of Indebtedness of the Borrower or its consolidated Subsidiaries to the extent such interest or other financing costs shall have been capitalized rather than included in consolidated interest expense for such period in accordance with GAAP (excluding capitalized loan origination costs and fees incurred on or prior to the Restatement Effective Date in connection with the Transactions) and (iii) any cash payments made during such period in respect of obligations referred to in clause (b)(ii) below that were amortized or accrued in a previous period, minus (b) to the extent included in such consolidated interest expense for such period, the sum of (i) noncash amounts attributable to amortization or write-off of capitalized interest or other financing costs paid in a previous period and (ii) noncash amounts attributable to amortization of debt discounts or accrued interest payable in kind for such period. For purposes of calculating Consolidated Cash Interest Expense for any period, if during such period the Borrower or any Subsidiary shall have consummated a Material Acquisition or a Material Disposition, Consolidated Cash Interest Expense for such period shall be calculated after giving pro forma effect thereto in accordance with Section 1.04(b).

"Consolidated EBITDA" means, for any period, Adjusted Consolidated Net Income for such period, plus (a) without duplication and to the extent deducted in determining such Adjusted Consolidated Net Income, the sum of (i) consolidated interest expense for such period (including imputed interest expense in respect of Capital Lease Obligations), (ii) consolidated income tax expense for such period, (iii) all amounts attributable to depreciation for such period and amortization of goodwill, intangible assets and capitalized assets for such period, (iv) any unrealized losses for such period attributable to the application of "mark to market" accounting in respect of Hedging Agreements and Equity Interests accounted for under the "liability" method, (v) any other noncash charges for such period, including noncash compensation expense (including any "mark-to-market" increases in GAAP compensation

expense for such period with respect to any previous grant of an award or employee deferral under the Non-Qualified Deferred Compensation Plan) and any noncash charges that result from the impairment, write-down or write-off of intangible assets, but excluding any additions to bad debt reserves or bad debt expense, any noncash charges that result from the write-down or write-off of inventory and any noncash charges that result from the write-down or write-off of accounts receivable or that are in respect of any other item that was included in Adjusted Consolidated Net Income in a prior period, (vi) any losses attributable to early extinguishment of Indebtedness or obligations under any Hedging Agreement, (vii) the cumulative effect of a change in accounting principles, (viii) [intentionally omitted], (ix) any adjustments in such period that result from purchase accounting for deferred revenue, (x) accruals during such period for contingent "stay" bonuses granted in connection with Permitted Acquisitions, (xi) any legal or other transaction fees and expenses for such period relating to any Permitted Acquisition consummated during such period, (xii) any legal or other transaction fees and expenses for such period relating to the Transactions and (xiii) subject to the last sentence of this definition, any other one-time, non-recurring expenses (including severance, restructuring or other similar charges), provided that, subject to clause (2) below in this proviso, any cash payment made with respect to any noncash items added back in computing Consolidated EBITDA for any prior period pursuant to clause (a)(v) above (or that would have been added back had this Agreement been in effect during such prior period) shall be subtracted in computing Consolidated EBITDA for the period in which such cash payment is made (it being agreed that, except to the extent funded, directly or indirectly, by the transactions contemplated by the Common Stock Purchase Agreement, this proviso (1) shall be deemed to apply to any payment made by the Borrower in cash on account of repurchase of any shares of its capital stock pursuant to the Stock Option Plan, but only to the extent that the issuance of such capital stock (or of the options or other securities upon the exercise, conversion or exchange of which such capital stock was issued) resulted in a noncash compensation expense in any prior period and (2) shall not be deemed to apply to any Deferred Compensation Payments); minus (b) without duplication and to the extent included in determining such Adjusted Consolidated Net Income, (i) any extraordinary gains for such period, (ii) any unrealized gains for such period attributable to the application of "mark to market" accounting in respect of Hedging Agreements and Equity Interests accounted for under the "liability" method, (iii) other noncash items of income for such period (excluding any noncash items of income (A) in respect of which cash was received in a prior period or will be received in a future period or (B) that represents the reversal of any accrual for anticipated cash charges in any prior period, but only to the extent such accrual reduced Consolidated EBITDA for such prior period), (iv) any gains attributable to the early extinguishment of Indebtedness or obligations under any Hedging Agreement, and (v) the cumulative effect of a change in accounting principles; minus (c) an amount equal to the amount of any "mark-to-market" decreases in GAAP compensation expense for such period with respect to previously charged Deferred Compensation Grant Expense plus (d) without duplication, an amount equal to the amount of any cost savings on account of cost savings initiatives implemented and/or identified by the Borrower to the Administrative Agent and which the Borrower reasonably expects to be realized within eighteen (18) months after the period for which cost savings are identified (net of any amounts already realized by the Borrower and its Subsidiaries); provided further that Consolidated EBITDA shall be calculated so as to exclude the effect of any gain or loss that represents after-tax gains or losses attributable to any sale, transfer or other disposition of assets by the Borrower or any of its consolidated Subsidiaries, other than dispositions of inventory and

other dispositions in the ordinary course of business. For purposes of calculating Consolidated EBITDA for any period, if during such period the Borrower or any Subsidiary shall have consummated a Material Acquisition or a Material Disposition, Consolidated EBITDA for such period shall be calculated after giving pro forma effect thereto in accordance with Section 1.04(b). Notwithstanding anything to the contrary herein, the maximum amount in any period that may be added (or added back) to Adjusted Consolidated Net Income pursuant to clause (a)(xiii) and clause (d) of this definition shall not exceed, in the aggregate, fifteen percent (15%) of Consolidated EBITDA for such period, calculated prior to giving effect to such adjustments.

"Control" means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies, or the dismissal or appointment of the management, of a Person, whether through the ability to exercise voting power, by contract or otherwise. "Controlling" and "Controlled" have meanings correlative thereto. For the avoidance of doubt, "Control" does not exist solely because of the right to designate a minority of the board of directors (or equivalent body) of such Person or to approve or disapprove significant transactions.

"Control Agreement" means, with respect to any deposit account or securities account maintained by any Loan Party, a control agreement in form and substance reasonably satisfactory to the Administrative Agent, duly executed and delivered by such Loan Party and the depositary bank or the securities intermediary, as the case may be, with which such account is maintained.

"Cost Sharing Agreement" means the Agreement for Sharing Research and Development Costs effective as of January 1, 2010, by and between the Borrower and Bentley Software International Limited, an Irish company.

"Covered Entity" means (a) the Borrower, each of the Borrower's Subsidiaries, all Subsidiary Loan Parties (including, in any event, all guarantors of the Secured Obligations) and all pledgors of Collateral and (b) each Person that, directly or indirectly, is in control of a Person described in clause (a) above. For purposes of this definition, control of a Person shall mean the direct or indirect (x) ownership of, or power to vote, 25% or more of the issued and outstanding equity interests having ordinary voting power for the election of directors of such Person or other Persons performing similar functions for such Person, or (y) power to direct or cause the direction of the management and policies of such Person whether by ownership of equity interests, contract or otherwise.

"Credit Party" means the Administrative Agent, each Issuing Bank, the Swingline Lender and each other Lender.

"Daily LIBOR Rate" means, for any day, the rate per annum determined by the Administrative Agent by dividing (the resulting quotient rounded upwards, if necessary, to the nearest 1/100th of 1%) (a) the Published Rate by (b) a number equal to 1.00 minus the Eurocurrency Reserve Percentage on such day. The Daily LIBOR Rate shall be adjusted as of each Business Day based on changes in the Published Rate or the Eurocurrency Reserve Percentage without notice to the Borrower, and shall be applicable from the effective date of any such change. Notwithstanding the foregoing, if the Daily LIBOR Rate as determined above

would be less than zero (0.00), such rate shall be deemed to be zero (0.00) for purposes of this Agreement.

"Default" means any event or condition that constitutes, or upon notice, lapse of time or both would constitute, an Event of Default.

"Defaulting Lender" means any Lender that (a) has failed, within two Business Days of the date required to be funded or paid, (i) to fund any portion of its Loans, (ii) to fund any portion of its participations in Letters of Credit or Swingline Loans or (iii) to pay to any Credit Party any other amount required to be paid by it hereunder, unless, in the case of clause (i) above, such Lender notifies the Administrative Agent in writing that such failure is the result of such Lender's good faith determination that a condition precedent to funding (specifically identified in such writing, including, if applicable, by reference to a specific Default) has not been satisfied, (b) has notified the Borrower or any Credit Party in writing, or has made a public statement, to the effect that it does not intend or expect to comply with any of its funding obligations under this Agreement (unless such writing or public statement indicates that such position is based on such Lender's good-faith determination that a condition precedent (specifically identified in such writing, including, if applicable, by reference to a specific Default) to funding a Loan cannot be satisfied) or generally under other agreements in which it commits to extend credit, (c) has failed, within three Business Days after request by the Borrower or the Administrative Agent, acting in good faith, to provide a certification in writing from an authorized officer of such Lender that it will comply with its obligations (and is financially able to meet such obligations) to fund prospective Loans and participations in then outstanding Letters of Credit and Swingline Loans, provided that such Lender shall cease to be a Defaulting Lender pursuant to this clause (c) upon the Administrative Agent's and the Borrower's receipt of such certification in form and substance satisfactory to the Administrative Agent and the Borrower, (d) has become the subject of a Bankruptcy Event, or (e) has become, or has a direct or indirect parent company that has become, the subject of a Bail-In Action.

"Deferred Compensation Grant Expense" means any noncash compensation expense or charge resulting from a grant of an award to an employee of the Borrower or a Subsidiary under the Non-Qualified Deferred Compensation Plan, or from the election by an employee of the Borrower or a Subsidiary to defer compensation under the Non-Qualified Deferred Compensation Plan, in each case other than any "mark-to-market" accruals relating to any such grant or deferral.

"Deferred Compensation Payments" means cash payments made by the Borrower or any Subsidiary under the Non-Qualified Deferred Compensation Plan to a beneficiary thereof.

"Departing Lender" means each Lender under the Existing Credit Agreement that executes and delivers to the Administrative Agent a Departing Lender Signature Page.

"Departing Lender Signature Page" means each signature page to this Agreement on which it is indicated that the Departing Lender executing the same shall cease to be a party to the Existing Credit Agreement on the Restatement Effective Date.

"Disqualified Equity Interest" means, with respect to any Person, any Equity Interest in such Person that by its terms (or by the terms of any security into which it is convertible or for which it is exchangeable, either mandatorily or at the option of the holder thereof), or upon the happening of any event or condition:

(a) matures or is mandatorily redeemable (other than solely for Equity Interests in such Person that do not constitute Disqualified Equity Interests and cash in lieu of fractional shares of such Equity Interests), whether pursuant to a sinking fund obligation or otherwise;

(b) is convertible or exchangeable, either mandatorily or at the option of the holder thereof, for Indebtedness or Equity Interests (other than solely for Equity Interests in such Person that do not constitute Disqualified Equity Interests and cash in lieu of fractional shares of such Equity Interests); or

(c) is redeemable (other than solely for Equity Interests in such Person that do not constitute Disqualified Equity Interests and cash in lieu of fractional shares of such Equity Interests) or is required to be repurchased by the Borrower or any Subsidiary, in whole or in part, at the option of the holder thereof;

in each case, on or prior to the date 91 days after the latest Revolving Maturity Date (determined as of the date of issuance thereof or, in the case of any such Equity Interests outstanding on the date hereof, the date hereof); provided, however, that (i) an Equity Interest in any Person that would not constitute a Disqualified Equity Interest but for terms thereof giving holders thereof the right to require such Person to redeem or purchase such Equity Interest upon the occurrence of an "asset sale" or a "change of control" (or similar event, however denominated) shall not constitute a Disqualified Equity Interest if any such requirement becomes operative only after repayment in full of all the Loans and all other Loan Document Obligations that are accrued and payable, the cancellation or expiration of all Letters of Credit and the termination or expiration of the Commitments and (ii) an Equity Interest in any Person that is issued to any employee or to any plan for the benefit of employees or by any such plan to such employees shall not constitute a Disqualified Equity Interest solely because it may be required to be repurchased by such Person or any of its subsidiaries in order to satisfy applicable statutory or regulatory obligations or as a result of such employee's termination, death or disability.

"Dollar", "Dollars", "U.S. Dollars" and the symbol "$" means lawful money of the United States of America.

"Dollar Equivalent" means, with respect to any amount of any currency, the Equivalent Amount of such currency expressed in Dollars.

"Dollar Swingline Loans" has the meaning specified in Section 2.04(a).

"Domestic Subsidiary" means any Subsidiary incorporated or organized under the Laws of the United States of America, any State thereof or the District of Columbia, provided that such Subsidiary is not a CFC.

"Domestic Unrestricted Cash" means, at any time, an amount equal to the Borrower Calculated Dollar Equivalent amount of all Unrestricted Cash of the Borrower and its Subsidiaries at such time determined on a consolidated basis, but excluding Foreign Unrestricted Cash.

"EEA Financial Institution" means (a) any credit institution or investment firm established in any EEA Member Country which is subject to the supervision of an EEA Resolution Authority, (b) any entity established in an EEA Member Country which is a parent of an institution described in clause (a) of this definition, or (c) any financial institution established in an EEA Member Country which is a subsidiary of an institution described in clauses (a) or (b) of this definition and is subject to consolidated supervision with its parent.

"EEA Member Country" means any of the member states of the European Union, Iceland, Liechtenstein, and Norway.

"EEA Resolution Authority" means any public administrative authority or any person entrusted with public administrative authority of any EEA Member Country (including any delegee) having responsibility for the resolution of any EEA Financial Institution.

"Effective Date" means the date indicated in a document or agreement to be the date on which such document or agreement becomes effective, or, if there is no such indication, the date of execution of such document or agreement.

"Eligibility Date" means, with respect to each Loan Party and each Swap, the date on which this Agreement or any Loan Document becomes effective with respect to such Swap (for the avoidance of doubt, the Eligibility Date shall be the Effective Date of such Swap if this Agreement or any other Loan Document is then in effect with respect to such Loan Party, and otherwise it shall be the Effective Date of this Agreement and/or such other Loan Document(s) to which such Loan Party is a party).

"Eligible Assignee" means (a) a Lender, (b) an Affiliate of a Lender, (c) an Approved Fund and (d) any other Person, other than, in each case, a natural person or the Borrower, any Subsidiary or any other Affiliate of the Borrower.

"Eligible Contract Participant" means an "eligible contract participant" as defined in the CEA and regulations thereunder.

"Engagement Letter" means the Engagement Letter dated December 13, 2017, among the Borrower, PNC Capital Markets LLC and the Administrative Agent (including the Summary of Terms and Conditions attached thereto).

"Environmental Laws" means all rules, regulations, codes, ordinances, judgments, orders, decrees and other Laws, and all injunctions, notices or binding agreements, issued, promulgated or entered into by or with any Governmental Authority and relating in any way to the environment, to preservation or reclamation of natural resources, to the management, Release or threatened Release of any Hazardous Material or to related health or safety matters.

"Environmental Liability" means any liability, obligation, loss, claim, action, order or cost, contingent or otherwise (including any liability for damages, costs of environmental remediation, fines, penalties and indemnities), directly or indirectly resulting from or based upon (a) violation of any Environmental Law, (b) the generation, use, handling, transportation, storage, treatment or disposal of any Hazardous Materials, (c) exposure to any Hazardous Materials, (d) the Release or threatened Release of any Hazardous Materials or (e) any contract, agreement or other consensual arrangement pursuant to which liability is assumed or imposed with respect to any of the foregoing.

"Equity Interests" means shares of capital stock, partnership interests, membership interests, beneficial interests or other ownership interests, whether voting or nonvoting, in, or interests in the income or profits of, a Person, and any warrants, options or other rights entitling the holder thereof to purchase or acquire any of the foregoing.

"Equivalent Amount" means, at any time, as determined by the Administrative Agent (which determination shall be conclusive absent manifest error), with respect to an amount of any currency (the "Reference Currency") which is to be computed as an equivalent amount of another currency (the "Equivalent Currency"): (a) if the Reference Currency and the Equivalent Currency are the same, the amount of such Reference Currency, or (b) if the Reference Currency and the Equivalent Currency are not the same, the amount of such Equivalent Currency converted from such Reference Currency at the Administrative Agent's spot selling rate (based on the market rates then prevailing and available to the Administrative Agent) for the sale of such Equivalent Currency for such Reference Currency at a time determined by the Administrative Agent on the second Business Day immediately preceding the event for which such calculation is made.

"Equivalent Currency" has the meaning assigned to such term in the definition of Equivalent Amount.

"ERISA" means the Employee Retirement Income Security Act of 1974.

"ERISA Affiliate" means any trade or business (whether or not incorporated) that, together with the Borrower, is treated as a single employer under Section 414(b) or 414(c) of the Code or, solely for purposes of Section 302 of ERISA and Section 412 of the Code, is treated as a single employer under Section 414(m) or 414(o) of the Code.

"ERISA Event" means (a) any "reportable event", as defined in Section 4043 of ERISA or the regulations issued thereunder with respect to a Plan (other than an event for which the 30-day notice period is waived), (b) any failure by any Plan to satisfy the minimum funding standard (within the meaning of Section 412 of the Code or Section 302 of ERISA) applicable to such Plan, in each case whether or not waived, (c) the filing pursuant to Section 412(c) of the Code or Section 302(c) of ERISA, of an application for a waiver of the minimum funding standard with respect to any Plan, (d) a determination that any Plan is, or is expected to be, in "at-risk" status (as defined in Section 303(i)(4) of ERISA or Section 430(i)(4) of the Code), (e) the incurrence by the Borrower or any of its ERISA Affiliates of any liability under Title IV of ERISA with respect to the termination of any Plan, (f) the receipt by the Borrower or any of its ERISA Affiliates from the PBGC or a plan administrator of any notice relating to an intention to

terminate any Plan or Plans or to appoint a trustee to administer any Plan, (g) the incurrence by the Borrower or any of its ERISA Affiliates of any liability with respect to the withdrawal or partial withdrawal from any Plan or Multiemployer Plan, or (h) the receipt by the Borrower or any of its ERISA Affiliates of any notice, or the receipt by any Multiemployer Plan from the Borrower or any of its ERISA Affiliates of any notice, concerning the imposition of Withdrawal Liability or a determination that a Multiemployer Plan is, or is expected to be, insolvent or in reorganization, within the meaning of Title IV of ERISA or in endangered or critical status, within the meaning of Section 305 of ERISA.

"EU Bail-In Legislation Schedule" means the EU Bail-In Legislation Schedule published by the Loan Market Association (or any successor person), as in effect from time to time.

"Euro" refers to the lawful currency of the Participating Member States.

"Eurocurrency", when used in reference to any Loan or Borrowing, refers to whether such Loan, or the Loans comprising such Borrowing, shall bear interest at a rate determined by reference to the LIBO Rate (including any Dollar Swingline Loan bearing interest at a LIBOR based rate or any Optional Currency Swingline Loan).

"Eurocurrency Reserve Percentage" means, as of any day, the maximum percentage in effect on such day, as prescribed by the Board of Governors of the Federal Reserve System (or any successor) for determining the reserve requirements (including supplemental, marginal and emergency reserve requirements) with respect to eurocurrency funding (currently referred to as "Eurocurrency Liabilities"). The Eurocurrency Reserve Percentage shall be adjusted automatically on and as of the effective date of any change in any reserve percentage.

"Event of Default" has the meaning set forth in Article VII.

"Exchange Act" means the United States Securities Exchange Act of 1934.

"Excluded Hedge Liabilities" means, with respect to each Loan Party, each of its Secured Hedge Obligations if, and only to the extent that, all or any portion of this Agreement or any other Loan Document that relates to such Secured Hedge Obligation is or becomes illegal under the CEA, or any rule, regulation or order of the CFTC, solely by virtue of such Loan Party's failure to qualify as an Eligible Contract Participant on the Eligibility Date for such Swap. Notwithstanding anything to the contrary contained in the foregoing or in any other provision of this Agreement or any other Loan Document, the foregoing is subject to the following provisos: (a) if a Secured Hedge Obligation arises under a master agreement governing more than one Swap, this definition shall apply only to the portion of such Secured Hedge Obligation that is attributable to Swaps for which such guaranty or security interest is or becomes illegal under the CEA, or any rule, regulations or order of the CFTC, solely as a result of the failure by such Loan Party for any reason to qualify as an Eligible Contract Participant on the Eligibility Date for such Swap; (b) if a guarantee of a Secured Hedge Obligation would cause such obligation to be an Excluded Hedge Liability but the grant of a security interest would not cause such obligation to be an Excluded Hedge Liability, such Secured Hedge Obligation shall constitute an Excluded Hedge Liability for purposes of the guarantee but not for purposes of the

grant of the security interest; and (c) if there is more than one Loan Party executing this Agreement or the other Loan Documents and a Secured Hedge Obligation would be an Excluded Hedge Liability with respect to one or more of such Persons, but not all of them, the definition of Excluded Hedge Liability or Liabilities with respect to each such Person shall only be deemed applicable to (i) the particular Secured Hedge Obligations that constitute Excluded Hedge Liabilities with respect to such Person, and (ii) the particular Person with respect to which such Secured Hedge Obligations constitute Excluded Hedge Liabilities.

"Excluded Holders" means (a) Gregory S. Bentley, Keith A. Bentley, Barry J. Bentley, Raymond B. Bentley and Richard P. Bentley, and any trusts for the benefit of their family members; (b) the Borrower's current employees and directors and any trusts for the benefit of their family members; and (c) the Bentley Profit Sharing/401(k) Plan.

"Excluded Taxes" means any of the following Taxes imposed on or with respect to a Recipient or required to be withheld or deducted from a payment to a Recipient, (a) Taxes imposed on or measured by net income (however denominated), franchise Taxes, and branch profits Taxes, in each case, (i) imposed as a result of such Recipient being organized under the laws of, or having its principal office or, in the case of any Lender, its applicable lending office located in, the jurisdiction imposing such Tax (or any political subdivision thereof) or (ii) that are Other Connection Taxes, (b) in the case of a Lender, U.S. federal withholding Taxes imposed on amounts payable to or for the account of such Lender with respect to an applicable interest in a Loan or Commitment pursuant to a law in effect on the date on which (i) such Lender acquires such interest in such Loan or Commitment (other than pursuant to an assignment request by the Borrower under Section 2.19(b)) or (ii) such Lender changes its lending office, except in each case to the extent that, pursuant to Section 2.17, amounts with respect to such Taxes were payable either to such Lender's assignor immediately before such Lender became a party hereto or to such Lender immediately before it changed its lending office, (c) Taxes attributable to such Recipient's failure to comply with Section 2.17(f), and (d) any U.S. federal withholding Taxes imposed under FATCA.

"Executive Bonus Plan" means the Borrower's incentive compensation plan pursuant to which up to 20% of the Borrower's pre-tax operating cash earnings for any fiscal quarter (calculated prior to giving effect to any payments for such fiscal quarter under such plan and otherwise on the basis of internal management reporting consistent with past practices, with such modifications thereto as shall be approved by the board of directors of the Borrower as necessary, in the reasonable judgment thereof, to maintain comparable financial performance metrics) are allocated to certain executives and other employees of the Borrower, including the Bentley Brothers.

"Executive Order No. 13224" means Executive Order No. 13224 on Terrorist Financing, effective September 24, 2001.

"Existing Credit Agreement" has the meaning set forth in the Recitals.

"Existing Letter of Credit" means each letter of credit previously issued for the account of the Borrower or any Subsidiary that (a) is listed on Schedule 1.01 and (b) is outstanding on the Restatement Effective Date; provided that the amount of any such letter of

credit does not, as of the Restatement Effective Date, exceed the amount thereof set forth on Schedule 1.01.

"Family Member" means, with respect to any individual, any other individual having a relationship with such individual by blood (to the second degree of consanguinity), marriage or adoption.

"Family Trust" means, with respect to any individual, trusts or estate planning vehicles established for the benefit of such individual or his/her Family Members.

"FATCA" means Sections 1471 through 1474 of the Code, as of the date of this Agreement (or any amended or successor version that is substantively comparable and not materially more onerous to comply with), any current or future regulations or official interpretations thereof, any agreements entered into pursuant to Section 1471(b)(1) of the Code and any intergovernmental agreement between a foreign country and the United States entered into in connection with the implementation of the foregoing.

"FCPA" means the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder.

"Federal Funds Effective Rate" means, for any day, the rate per annum (based on a year of three hundred sixty (360) days and actual days elapsed and rounded upward to the nearest 1/100 of one percent (1%), with .005% being rounded up) announced by the Federal Reserve Bank of New York (or any successor) on such day as being the weighted average of the rates on overnight federal funds transactions on the previous trading day, as computed and announced by such Federal Reserve Bank (or any successor) in substantially the same manner as such Federal Reserve Bank computes and announces the weighted average it refers to as the "Federal Funds Effective Rate" as of the date of this Agreement; provided, if such Federal Reserve Bank (or its successor) does not announce such rate on any day, the "Federal Funds Effective Rate" for such day shall be the Federal Funds Effective Rate for the last day on which such rate was announced.

"Fee Letter" means the Fee Letter dated December 13, 2017, among the Borrower, PNC Capital Markets LLC and the Administrative Agent.

"Financial Officer" means, with respect to any Person, the chief financial officer, principal accounting officer, treasurer or controller of such Person.

"Foreign Lender" means any Lender that is organized under the laws of a jurisdiction other than the United States of America (including each State thereof and the District of Columbia).

"Foreign Pledge Agreement" means a pledge or charge agreement granting a Lien on Equity Interests in a Foreign Subsidiary to secure the Secured Obligations, governed by the law of the jurisdiction of organization of such Foreign Subsidiary and in form and substance reasonably satisfactory to the Administrative Agent.

"Foreign Subsidiary" means any Subsidiary that is not a Domestic Subsidiary. For the avoidance of doubt, any Subsidiary incorporated or organized under the laws of the United States of America, any State thereof or the District of Columbia shall be treated as a "Foreign Subsidiary" for purposes hereof if such Subsidiary is a CFC.

"Foreign Unrestricted Cash" means, at any time, the Borrower Calculated Dollar Equivalent amount of all Unrestricted Cash at such time of Foreign Subsidiaries determined on a consolidated basis.

"GAAP" means generally accepted accounting principles in the United States of America, applied in accordance with the consistency requirements thereof.

"Governmental Approvals" means all authorizations, consents, approvals, permits, licenses and exemptions of, registrations and filings with, and reports to, Governmental Authorities.

"Governmental Authority" means the government of the United States of America or any other nation, or of any political subdivision thereof, whether state or local, and any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions of or pertaining to government (including any supra-national bodies such as the European Union or the European Central Bank) and any group or body charged with setting financial accounting or regulatory capital rules or standards (including, without limitation, the Financial Accounting Standards Board, the Bank for International Settlements or the Basel Committee on Banking Supervision or any successor or similar authority to any of the foregoing).

"Guarantee" of or by any Person (the "guarantor") means any obligation, contingent or otherwise, of the guarantor guaranteeing or having the economic effect of guaranteeing any Indebtedness or other obligation of any other Person (the "primary obligor") in any manner, whether directly or indirectly, and including any obligation of the guarantor, direct or indirect, (a) to purchase or pay (or advance or supply funds for the purchase or payment of) such Indebtedness or other obligation or to purchase (or to advance or supply funds for the purchase of) any security for the payment thereof, (b) to purchase or lease property, securities or services for the purpose of assuring the owner of such Indebtedness or other obligation of the payment thereof, (c) to maintain working capital, equity capital or any other financial statement condition or liquidity of the primary obligor so as to enable the primary obligor to pay such Indebtedness or other obligation or (d) as an account party in respect of any letter of credit or letter of guaranty issued to support such Indebtedness or other obligation; provided that the term "Guarantee" shall not include endorsements for collection or deposit in the ordinary course of business. The amount, as of any date of determination, of any Guarantee shall be the principal amount outstanding on such date of Indebtedness or other obligation guaranteed thereby (or, in the case of (i) any Guarantee the terms of which limit the monetary exposure of the guarantor or (ii) any Guarantee of an obligation that does not have a principal amount, the maximum monetary exposure as of such date of the guarantor under such Guarantee (as determined, in the case of clause (i), pursuant to such terms or, in the case of clause (ii), reasonably and in good faith by the chief financial officer of the Borrower)).

"Hazardous Materials" means all explosive, radioactive, hazardous or toxic substances, wastes or other pollutants, including petroleum or petroleum distillates, asbestos or asbestos containing materials, polychlorinated biphenyls, radon gas, infectious or medical wastes and all other substances or wastes of any nature regulated pursuant to any Environmental Law.

"Hedging Agreement" means any agreement with respect to any swap, forward, future or derivative transaction, or any option or similar agreement, involving, or settled by reference to, one or more rates, currencies, commodities, prices of equity or debt securities or instruments, or economic, financial or pricing indices or measures of economic, financial or pricing risk or value, or any similar transaction or combination of the foregoing transactions; provided that no phantom stock or similar plan providing for payments only on account of services provided by current or former directors, officers, employees or consultants of the Borrower or the Subsidiaries shall be a Hedging Agreement.

"ICC" has the meaning set forth in Section 9.09.

"Incremental Facility Agreement" means an Incremental Facility Agreement, in form and substance reasonably satisfactory to the Administrative Agent, among the Borrower, the Administrative Agent and one or more Incremental Revolving Lenders, establishing Incremental Revolving Commitments and effecting such other amendments hereto and the other Loan Documents as are contemplated by Section 2.21.

"Incremental Revolving Commitment" means, with respect to any Lender, the commitment, if any, of such Lender, established pursuant to an Incremental Facility Agreement and Section 2.21, to make Revolving Loans and to acquire participations in Letters of Credit and Swingline Loans hereunder, expressed as an amount representing the maximum aggregate permitted amount of such Lender's Revolving Exposure under such Incremental Facility Agreement.

"Incremental Revolving Lender" means a Lender with an Incremental Revolving Commitment.

"Indebtedness" of any Person means, without duplication, (a) all obligations of such Person for borrowed money, (b) all obligations of such Person evidenced by bonds, debentures, notes or similar instruments, (c) all obligations of such Person under conditional sale or other title retention agreements relating to property acquired by such Person (excluding trade accounts payable incurred in the ordinary course of business), (d) all obligations of such Person in respect of the deferred purchase price of property or services (excluding (i) current accounts payable incurred in the ordinary course of business (including intercompany accounts payable) and (ii) deferred compensation payable to directors, officers or employees of the Borrower or any Subsidiary, but including any purchase price adjustment, earnout or deferred payment of a similar nature incurred in connection with an acquisition to the extent required to be recorded as a liability on such Person's balance sheet in accordance with GAAP), (e) all Capital Lease Obligations of such Person, (f) the maximum aggregate amount of all letters of credit and letters of guaranty in respect of which such Person is an account party, (g) all obligations, contingent or otherwise, of such Person in respect of bankers' acceptances, (h) all Indebtedness of others secured by (or for which the holder of such Indebtedness has an existing right, contingent or

otherwise, to be secured by) any Lien on property owned or acquired by such Person, whether or not the Indebtedness secured thereby has been assumed by such Person, (i) the maximum aggregate amount of all Bank Guarantees in respect of which such party is an account party or otherwise responsible to reimburse the bank or other financial institution that issued such Bank Guarantee(s) for any payments or draws under such Bank Guarantee(s), and (j) all Guarantees by such Person of Indebtedness of others. The Indebtedness of any Person shall include the Indebtedness of any other Person (including any partnership in which such Person is a general partner) to the extent such Person is liable therefor as a result of such Person's ownership interest in or other relationship with such other Person, except to the extent the terms of such Indebtedness provide that such Person is not liable therefor. Notwithstanding anything to the contrary in this definition, Indebtedness shall not include (a) liabilities or obligations of a Loan Party under a Purchase Card Facility offered by a Lender or Affiliate thereof, (b) obligations in respect of non-competes and similar agreements and (c) deferred revenue, customer pre-payments or other similar obligations.

"Indemnified Taxes" means (a) Taxes, other than Excluded Taxes, imposed on or with respect to any payment made by or on account of any obligation of any Loan Party under this Agreement or any other Loan Document and (b) to the extent not otherwise described in the preceding clause (a), Other Taxes.

"Indemnitee" has the meaning set forth in Section 9.03(b).

"Interest Coverage Ratio" shall mean, on any date, the ratio of (a) Consolidated EBITDA to (b) Consolidated Cash Interest Expense for the period of four consecutive fiscal quarters of the Borrower most recently ended on or prior to such date.

"Interest Election Request" means a request by the Borrower to convert or continue a Revolving Borrowing in accordance with Section 2.07, which shall be, in the case of any such written request, in the form of Exhibit E or any other form approved by the Administrative Agent.

"Interest Payment Date" means (a) with respect to any ABR Loan (other than a Swingline Loan), the last day of each March, June, September and December, (b) with respect to any Eurocurrency Loan (other than a Swingline Loan), the last day of the Interest Period applicable to the Borrowing of which such Loan is a part and, in the case of a Eurocurrency Borrowing with an Interest Period of more than three months' duration, such day or days prior to the last day of such Interest Period as shall occur at intervals of three months' duration after the first day of such Interest Period, and (c) (i) with respect to any Swingline Loan (other than an Optional Currency Swingline Loan or a Swingline Loan that is made under a Cash Management Agreement), the last day of each March, June, September and December and the day that such Swingline Loan is required to be repaid, (ii) with respect to any Swingline Loan made under a Cash Management Agreement, the date specified in such Cash Management Agreement for the payment of interest, (iii) with respect to any Optional Currency Swingline Loan, the last day of the Interest Period applicable to such Optional Currency Swingline Loan and (iv) with respect to all Swingline Loans, the Revolving Maturity Date.

"Interest Period" means, with respect to any Eurocurrency Borrowing, the period commencing on the date of such Borrowing and ending on the numerically corresponding day in the calendar month that is one, two, three or six months thereafter (or, if agreed to by each Lender participating therein, twelve months thereafter), as the Borrower may elect; provided that (a) if any Interest Period would end on a day other than a Business Day, such Interest Period shall be extended to the next succeeding Business Day unless such next succeeding Business Day would fall in the next calendar month, in which case such Interest Period shall end on the next preceding Business Day, and (b) any Interest Period that commences on the last Business Day of a calendar month (or on a day for which there is no numerically corresponding day in the last calendar month of such Interest Period) shall end on the last Business Day of the last calendar month of such Interest Period. For purposes hereof, the date of a Borrowing initially shall be the date on which such Borrowing is made and thereafter shall be the effective date of the most recent conversion or continuation of such Borrowing. Notwithstanding the above, the only Interest Period available for Optional Currency Swingline Loans shall be one month.

"Interest Rate Option" means the Base Rate Option or the LIBO Rate Option.

"Investment" means, with respect to a specified Person, any Equity Interests, evidences of Indebtedness or other securities (including any option, warrant or other right to acquire any of the foregoing) of, or any capital contribution or loans or advances (other than advances made in the ordinary course of business that would be recorded as accounts receivable on the balance sheet of the specified Person prepared in accordance with GAAP) to, Guarantees of any Indebtedness or other obligations of, or any other investment in, any other Person that are held or made by the specified Person. The amount, as of any date of determination, of (a) any Investment in the form of a loan or an advance shall be the principal amount thereof outstanding on such date, without any adjustment for write-downs or write-offs (including as a result of forgiveness of any portion thereof) with respect to such loan or advance after the date thereof, (b) any Investment in the form of a Guarantee shall be determined in accordance with the definition of the term "Guarantee", (c) any Investment in the form of a transfer of Equity Interests or other property by the investor to the investee, including any such transfer in the form of a capital contribution, shall be the fair value (as determined reasonably and in good faith by the chief financial officer of the Borrower) of such Equity Interests or other property as of the time of the transfer, minus the amount, as of such date, of any portion of such Investment repaid to the investor in cash as a return of capital, but without any other adjustment for increases or decreases in value of, or write-ups, write-downs or write-offs with respect to, such Investment after the time of such transfer, (d) any Investment (other than any Investment referred to in clause (a), (b) or (c) above) by the specified Person in the form of a purchase or other acquisition for value of any Equity Interests, evidences of Indebtedness or other securities of any other Person shall be the original cost of such Investment (including any Indebtedness assumed in connection therewith), plus the cost of all additions, as of such date, thereto, and minus the amount, as of such date, of any portion of such Investment repaid to the investor in cash as a repayment of principal or a return of capital, as the case may be, but without any other adjustment for increases or decreases in value of, or write-ups, write-downs or write-offs with respect to, such Investment after the time of such Investment, and (e) any Investment (other than any Investment referred to in clause (a), (b), (c) or (d) above) by the specified Person in any other Person resulting from the issuance by such other Person of its Equity Interests to the specified Person shall be the fair value (as determined reasonably and in good faith by the chief financial officer of the Borrower)

of such Equity Interests at the time of the issuance thereof. Any basket in this Agreement under clauses (c), (o), (p) and (q) of Section 6.04 used to make an Investment by any Loan Party on or after the Restatement Effective Date in any Person that is not a Loan Party on the date such Investment is made but subsequently becomes a Loan Party in accordance with the terms of this Agreement shall be refreshed by the amount of the Investment so made on the date such Person so becomes a Loan Party. For the avoidance of doubt, for purposes of covenant compliance, the amount of an Investment shall be the amount actually invested, without adjustment for subsequent increases or decreases in the value of such Investment and, in the case of an Investment made in a currency other than Dollars, without adjustment for any changes in any applicable exchange rate. Further, in the case of any Investment in the form of loans or advances, the amount of the Investment shall be deemed reduced by any return of principal and, in the case of any Investment in the form of equity, the amount of the Investment shall be deemed reduced by the amount of any return of equity (whether in the form of dividends, share repurchases or otherwise).

"IP Security Agreements" has the meaning set forth in the Collateral Agreement.

"IPO" means the initial underwritten public offering of common Equity Interests in the Borrower or a Borrower Parent Company, in each case pursuant to an effective registration statement filed with the SEC pursuant to the Securities Act.

"IRS" means the United States Internal Revenue Service.

"ISP98" has the meaning set forth in Section 9.09.

"Issuing Bank" means (a) PNC, (b) solely in respect of any Existing Letter of Credit, the Person that is the issuer thereof and (c) each Lender that shall have become an Issuing Bank hereunder as provided in Section 2.05(j) (other than any Person that shall have ceased to be an Issuing Bank as provided in Section 2.05(k)), each in its capacity as an issuer of Letters of Credit hereunder. Each Issuing Bank may, in its discretion, arrange for one or more Letters of Credit to be issued by Affiliates of such Issuing Bank, in which case the term "Issuing Bank" shall include any such Affiliate with respect to Letters of Credit issued by such Affiliate (it being agreed that such Issuing Bank shall, or shall cause such Affiliate to, comply with the requirements of Section 2.05 with respect to such Letters of Credit).

"Law" means any law(s) (including common law), constitution, statute, treaty, regulation, rule, ordinance, opinion, issued guidance, release, ruling, order, executive order, injunction, writ, decree, bond, judgment, authorization or approval, lien or award of or any settlement arrangement, by agreement, consent or otherwise, with any Governmental Authority, foreign or domestic.

"LC Disbursement" means a payment made by an Issuing Bank pursuant to a Letter of Credit.

"LC Exposure" means, at any time, the sum of the Dollar Equivalent amount of (a) the aggregate amount of all Letters of Credit that remains available for drawing at such time and (b) the aggregate amount of all LC Disbursements that have not yet been reimbursed by or

on behalf of the Borrower at such time. The LC Exposure of any Lender at any time shall be its Applicable Percentage of the total LC Exposure at such time.

"Lender Parent" means, with respect to any Lender, any Person in respect of which such Lender is a subsidiary.

"Lenders" means the Persons listed on Schedule 2.01 and any other Person that shall have become a party hereto pursuant to an Assignment and Assumption or an Incremental Facility Agreement, other than any such Person that shall have ceased to be a party hereto pursuant to an Assignment and Assumption. For the purpose of any Loan Document which provides for the granting of a security interest or other Lien to the Lenders or to the Administrative Agent for the benefit of the Lenders as security for the Secured Obligations, "Lenders" shall include any Affiliate of a Lender to which such Secured Obligation is owed. Unless the context otherwise requires, the term "Lenders" includes the Swingline Lender.

"Letter of Credit" means any letter of credit issued pursuant to this Agreement and any Existing Letter of Credit, other than any such letter of credit that shall have ceased to be a "Letter of Credit" outstanding hereunder pursuant to Section 9.05.

"Letter of Credit Sublimit" has the meaning set forth in Section 2.05(b).

"LIBO Rate" means the following:

(a) with respect to the Revolving Loans comprising any Borrowing Tranche to which the LIBO Rate Option applies for any Interest Period, the interest rate per annum determined by the Administrative Agent by dividing (the resulting quotient rounded upwards, if necessary, to the nearest 1/100th of 1% per annum) (i) the rate which appears on the Bloomberg Page BBAM1 (or on such other substitute Bloomberg page that displays rates at which U.S. Dollar deposits are offered by leading banks in the London interbank deposit market), or the rate which is quoted by another source selected by the Administrative Agent as an authorized information vendor for the purpose of displaying rates at which U.S. Dollar deposits are offered by leading banks in the London interbank deposit market at approximately 11:00 a.m., London time, two (2) Business Days prior to the commencement of such Interest Period as the London interbank offered rate for U.S. Dollars for an amount comparable to such Borrowing Tranche and having a borrowing date and a maturity comparable to such Interest Period, by (ii) a number equal to 1.00 minus the Eurocurrency Reserve Percentage.

(b) with respect to Optional Currency Swingline Loans in Euros or British Pounds Sterling comprising any Borrowing Tranche for any Interest Period, the interest rate per annum determined by the Administrative Agent as the rate which appears on the Bloomberg Page BBAM1 (or on such other substitute Bloomberg page that displays rates at which the relevant Optional Currency is offered by leading banks in the London interbank deposit market), rounded upwards, if necessary, to the nearest 1/100th of 1% (with .005% being rounded up) per annum, or the rate which is quoted by another source selected by the Administrative Agent as an authorized information vendor for the purpose of displaying rates at which such applicable Optional Currencies are offered by leading banks in the London interbank deposit market at approximately 11:00 a.m., London time, two (2) Business Days prior to the commencement of

such Interest Period as the Relevant Interbank Market offered rate for deposits in Euros or British Pounds Sterling for an amount comparable to the principal amount of such Borrowing Tranche and having a borrowing date and a maturity comparable to such Interest Period.

(c) with respect to Optional Currency Swingline Loans denominated in Canadian Dollars comprising any Borrowing Tranche, the interest rate per annum (the "CDOR Rate") as determined by the Administrative Agent, equal to the arithmetic average rate applicable to Canadian Dollar bankers' acceptances (C$BAs) for the applicable Interest Period appearing on the Bloomberg page BTMM CA, rounded to the nearest 1/100th of 1% (with .005% being rounded up) per annum, at approximately 11:00 a.m. Eastern Time, two Business Days prior to the commencement of such Interest Period, or if such day is not a Business Day, then on the immediately preceding Business Day, provided that if such rate does not appear on the Bloomberg page BTMM CA on such day the CDOR Rate on such day shall be the rate for such period applicable to Canadian Dollar bankers' acceptances quoted by a bank listed in Schedule I of the Bank Act (Canada), as selected by the Administrative Agent, as of 11:00 a.m. Eastern Time on such day or, if such day is not a Business Day, then on the immediately preceding Business Day.

(d) The LIBO Rate for any Loans shall be based upon the LIBO Rate for the currency in which such Loans are requested. With respect to any Loans available at a LIBO Rate, if at any time, for any reason, the source(s) for the LIBO Rate described above for the applicable currency or currencies is no longer available, then the Administrative Agent may determine a comparable replacement rate at such time (which determination shall be conclusive absent manifest error).

(e) The Administrative Agent shall give prompt notice to the Borrower of the LIBO Rate as determined or adjusted in accordance herewith, which determination shall be conclusive absent manifest error.

(f) The LIBO Rate for any Revolving Loan or Dollar Swingline Loan shall be adjusted with respect to any Eurocurrency Borrowing that is outstanding on the effective date of any change in the Eurocurrency Reserve Percentage as of such effective date.

(g) Optional Currency Swingline Loans (but not Revolving Loans) shall be subject to the reserve requirements set forth in Section 2.23(a).

(h) Notwithstanding the foregoing, if the LIBO Rate as determined under any method above would be less than zero (0.00), such rate shall be deemed to be zero (0.00) for purposes of this Agreement.

"LIBO Rate Option" means the option of the Borrower to have Revolving Loans and Swingline Loans (including Optional Currency Swingline Loans) bear interest at the LIBO Rate pursuant to the provisions hereof.

"Lien" means, with respect to any asset, (a) any mortgage, deed of trust, lien, pledge, hypothecation, charge, security interest or other encumbrance on, in or of such asset, including any agreement to provide any of the foregoing and any arrangement entered into for the purpose of making particular assets available to satisfy any Indebtedness or other obligation,

(b) the interest of a vendor or a lessor under any conditional sale agreement, capital lease or title retention agreement (or any financing lease having substantially the same economic effect as any of the foregoing) relating to such asset and (c) in the case of securities, any purchase option, call or similar right of a third party with respect to such securities.

"Loan Document Obligations" has the meaning set forth in the Collateral Agreement.

"Loan Documents" means this Agreement, the Incremental Facility Agreements, the Loan Modification Agreements, the Collateral Agreement, the other Security Documents, the Reaffirmation Agreement, the Subordination Agreement, the Supplemental IP Security Agreements, the Perfection Certificate, any agreement designating an additional Issuing Bank as contemplated by Section 2.05(j) and, except for purposes of Section 9.02, any promissory notes delivered pursuant to Section 2.04(b) or Section 2.09(c).

"Loan Modification Agreement" means a Loan Modification Agreement, in form and substance reasonably satisfactory to the Administrative Agent, among the Borrower, the Administrative Agent and one or more Accepting Lenders, effecting one or more Permitted Amendments and such other amendments hereto and the other Loan Documents as contemplated by Section 2.22.

"Loan Modification Offer" has the meaning set forth in Section 2.22(a).

"Loan Parties" means the Borrower and each Subsidiary Loan Party.

"Loans" means the loans made by the Lenders to the Borrower pursuant to this Agreement.

"Long-Term Indebtedness" means any Indebtedness that, in accordance with GAAP, constitutes (or, when incurred, constituted) a long-term liability.

"Majority in Interest", when used in reference to Lenders of any Class, means, at any time, Lenders having Revolving Exposures and unused Revolving Commitments in such Class representing more than 50% of the sum of the Aggregate Revolving Exposures and the unused Aggregate Revolving Commitment in such Class at such time.

"Material Acquisition" means any acquisition, or a series of related acquisitions, of (a) Equity Interests in any Person if, after giving effect thereto, such Person will become a Subsidiary or (b) assets comprising all or substantially all the assets of (or all or substantially all the assets constituting a business unit, division, product line or line of business of) any Person; provided that the aggregate consideration therefor (including Indebtedness assumed in connection therewith, all obligations in respect of deferred purchase price (including obligations under any purchase price adjustment but excluding earnout or similar payments) and all other consideration payable in connection therewith (including payment obligations in respect of noncompetition agreements or other arrangements representing acquisition consideration)) exceeds $50,000,000.

"Material Adverse Effect" means an event or condition that has resulted, or could reasonably be expected to result, in a material adverse effect on (a) the business, assets, liabilities, operations or condition (financial or otherwise) of the Borrower and the Subsidiaries, taken as a whole, (b) the ability of any Loan Party to perform any of its obligations under any Loan Document or (c) the rights and remedies available to the Lenders under any Loan Document.

"Material Contract" means, with respect to any Person, any indenture, loan or credit agreement, mortgage, deed of trust, contract, undertaking or other agreement or instrument to which such Person is a party or by which it or any of its properties is bound and that (a) evidences or governs any Material Indebtedness or any Disqualified Equity Interests or (b) involves aggregate amounts payable by or to such Person or any of its Affiliates during any fiscal year of $50,000,000 or more (other than, in the case of this clause (b), (i) purchase orders entered into in the ordinary course of business and (ii) any other contract, undertaking or other agreement that by its terms may be terminated or canceled by such Person in the ordinary course of business upon less than 60 days prior notice and without penalty or premium).

"Material Disposition" means any sale, transfer or other disposition, or a series of related sales, transfers or other dispositions, of (a) all or substantially all the issued and outstanding Equity Interests in any Subsidiary that are owned by the Borrower or any Subsidiary or (b) assets comprising all or substantially all the assets of (or all or substantially all the assets constituting a business unit, division, product line or line of business of) any Person; provided that the aggregate consideration therefor (including Indebtedness assumed by the transferee in connection therewith, all obligations in respect of deferred purchase price (including obligations under any purchase price adjustment but excluding earnout or similar payments) and all other consideration payable in connection therewith (including payment obligations in respect of noncompetition agreements or other arrangements representing acquisition consideration)) exceeds $50,000,000.

"Material Foreign IP Subsidiary" means any Foreign Subsidiary that is a wholly owned Subsidiary, provided that (a) such Foreign Subsidiary shall not be liable for and shall not create, incur, assume or permit to exist any Indebtedness permitted under Section 6.01(a)(xi) and (b) no Subsidiary (other than any Subsidiary Loan Party) that owns directly or indirectly any Equity Interest in any such Foreign Subsidiary shall (i) be liable for or create, incur, assume or permit to exist any Indebtedness, (ii) create, incur, assume or permit to exist any Lien on any of its assets, other than Liens created under the Loan Documents and Permitted Encumbrances, (iii) own or acquire any assets other than Equity Interests in such Foreign Subsidiary (or any other Subsidiary that meets the requirements of this clause (b)), cash and Permitted Investments or (iv) engage in any business or activity other than the ownership of the outstanding Equity Interests in such Foreign Subsidiary (or any other Subsidiary that meets the requirements of this clause (b)) and activities incidental thereto.

"Material Indebtedness" means Indebtedness (other than the Loans, Letters of Credit and Guarantees under the Loan Documents), or obligations in respect of one or more Hedging Agreements, in each case of any one or more of the Borrower and the Subsidiaries in an aggregate principal amount of $10,000,000 or more. For purposes of determining Material Indebtedness, the "principal amount" of the obligations of the Borrower or any Subsidiary in

respect of any Hedging Agreement at any time shall be the maximum aggregate amount (giving effect to any netting agreements) that the Borrower or such Subsidiary would be required to pay if such Hedging Agreement were terminated at such time.

"Maximum Permitted Net Leverage Ratio" means, at any time, the maximum Net Leverage Ratio then permitted under Section 6.12.

"Minority Investment" means Investments by the Borrower and/or any Subsidiary made after the Restatement Effective Date in Equity Interests of any Person (a "JV Entity") that is engaged in a business of the type conducted by the Borrower and its Subsidiaries on the Restatement Effective Date or any business reasonably related thereto or complementary thereto, provided that such Investment does not result in such JV Entity either becoming a Subsidiary of the Borrower or the Borrower or any Subsidiary (individually or collectively) Controlling such JV Entity. The amount, as of any date of determination, of any Minority Investment shall be calculated in accordance with the provisions of the second sentence of the definition of the term "Investment"; provided that, if the Borrower or a Subsidiary acquires additional Equity Interests in, or all or substantially all of the assets of, a JV Entity in an acquisition permitted by Section 6.04, and as a result of such acquisition the JV Entity becomes a Subsidiary, or all or substantially all of its business and assets become owned and conducted by the Borrower or a Subsidiary, the "outstanding" Investment attributable to such JV Entity shall, notwithstanding anything to the contrary in the definition of the term "Investment", be considered zero for purposes of Section 6.04(o).

"Month," with respect to an Interest Period means the interval between the days in consecutive calendar months numerically corresponding to the first day of such Interest Period. If any Interest Period begins on a day of a calendar month for which there is no numerically corresponding day in the month in which such Interest Period is to end, the final month of such Interest Period shall be deemed to end on the last Business Day of such final month.

"Moody's" means Moody's Investors Service, Inc., and any successor to its rating agency business.

"Multiemployer Plan" means a multiemployer plan as defined in Section 4001(a)(3) of ERISA.

"Net Leverage Ratio" means, on any date, the ratio of (a) Total Funded Indebtedness as of such date, minus an amount equal to the lesser of (i) the sum of (x) 100% of Domestic Unrestricted Cash as at such date, plus (y) 65% of the Foreign Unrestricted Cash as at such date, and (ii) $100,000,000, to (b) Consolidated EBITDA for the period of four consecutive fiscal quarters of the Borrower most recently ended on or prior to such date.

"Non-Defaulting Lender" means, at any time, any Lender that is not a Defaulting Lender at such time.

"Non-Qualified Deferred Compensation Plan" means the Bentley Systems, Incorporated Nonqualified Deferred Compensation Plan, as amended and restated effective as of January 1, 2015, and as further amended from time to time.

"Non-Qualifying Party" means any Loan Party that fails for any reason to qualify as an Eligible Contract Participant.

"Optional Currency" means the following lawful currencies: Euros, British Pounds Sterling and Canadian Dollars and any other currency approved by Administrative Agent, the Swingline Lender and all of the Issuing Banks pursuant to Section 2.23(e). Subject to Section 2.23, each Optional Currency must be the lawful currency of the specified country.

"Optional Currency Swingline Loans" has the meaning assigned to such term in Section 2.04(a).

"Original Closing Date" means the "Closing Date" as defined in the Existing Credit Agreement, which date was February 2, 2012.

"Original Currency" has the meaning assigned to such term in Section 2.29(a).

"Other Connection Taxes" means, with respect to any Recipient, Taxes imposed as a result of a present or former connection between such Recipient (or an agent or affiliate thereof) and the jurisdiction imposing such Tax (other than connections arising from such Recipient having executed, delivered, become a party to, performed its obligations under, received payments under, received or perfected a security interest under, engaged in any other transaction pursuant to or enforced this Agreement or any other Loan Document, or sold or assigned an interest in any Loan, this Agreement or any other Loan Document).

"Other Currency" has the meaning assigned to such term in Section 2.29(a).

"Other Taxes" means any present or future stamp, court, documentary, intangible, recording, filing or similar Taxes that arise from any payment made under, from the execution, delivery, performance, enforcement or registration of, from the receipt or perfection of a security interest under, or otherwise with respect to, this Agreement or any other Loan Document, except any such Taxes that are Other Connection Taxes imposed with respect to an assignment (other than an assignment made pursuant to Section 2.19(b)).

"Overnight Bank Funding Rate" means, for any day, the rate comprised of both overnight federal funds and overnight Eurocurrency borrowings by U.S.-managed banking offices of depository institutions, as such composite rate shall be determined by the Federal Reserve Bank of New York ("NYFRB"), as set forth on its public website from time to time, and as published on the next succeeding Business Day as the overnight bank funding rate by the NYFRB (or by such other recognized electronic source (such as Bloomberg) selected by the Administrative Agent for the purpose of displaying such rate); provided, that if such day is not a Business Day, the Overnight Bank Funding Rate for such day shall be such rate on the immediately preceding Business Day; provided, further, that if such rate shall at any time, for any reason, no longer exist, a comparable replacement rate determined by the Administrative Agent at such time (which determination shall be conclusive absent manifest error). If the Overnight Bank Funding Rate determined as above would be less than zero (0.00), then such rate shall be deemed to be zero (0.00). The rate of interest charged shall be adjusted as of each Business Day based on changes in the Overnight Bank Funding Rate without notice to the Borrower.

"Overnight Rate" means for any day with respect to any Swingline Loans in an Optional Currency, the rate of interest per annum as determined by the Administrative Agent at which overnight deposits in such currency, in an amount approximately equal to the amount with respect to which such rate is being determined, would be offered for such day in the Relevant Interbank Market.

"Participant Register" has the meaning set forth in Section 9.04(c).

"Participants" has the meaning set forth in Section 9.04(c)(i).

"Participating Member State" means any member State of the European Communities that adopts or has adopted the euro as its lawful currency in accordance with legislation of the European Community relating to Economic and Monetary Union.

"PBGC" means the Pension Benefit Guaranty Corporation referred to and defined in ERISA.

"Perfection Certificate" means a certificate in the form of Exhibit F or any other form approved by the Administrative Agent.

"Permitted Acquisition" means the purchase or other acquisition by the Borrower or any Subsidiary of Equity Interests in, or all or substantially all the assets of (or all or substantially all the assets constituting a business unit, division, product line or line of business of), any Person; provided that (a) in the case of any such purchase or other acquisition of any Equity Interests in any Person, upon the consummation of such purchase or other acquisition such Person and each subsidiary of such Person will be a wholly owned Subsidiary (including as a result of a merger or consolidation between any Subsidiary and such Person), (b) such purchase or other acquisition was not preceded by, or consummated pursuant to, an unsolicited tender offer or proxy contest initiated by or on behalf of the Borrower or any Subsidiary, (c) all transactions related thereto are consummated in accordance with applicable Law, (d) the business of such Person, or such assets, as the case may be, constitute a business permitted under Section 6.03(b), (e) with respect to each such purchase or other acquisition, all actions required to be taken with respect to each newly created or acquired Subsidiary or assets in order to satisfy the requirements set forth in clauses (a), (b), (c), (d) and (f) of the definition of the term "Collateral and Guarantee Requirement" shall have been taken (or arrangements for the taking of such actions satisfactory to the Administrative Agent shall have been made), and (f) at the time of and immediately after giving effect to any such purchase or other acquisition, (i) no Default shall have occurred and be continuing and (ii) the Borrower shall be in compliance with the covenants set forth in Sections 6.12 and 6.13 at the end of the last fiscal quarter of the Borrower for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) or (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)) calculated on both an actual and on a pro forma basis in accordance with Section 1.04(b).

"Permitted Amendment" means an amendment to this Agreement and the other Loan Documents, effected in connection with a Loan Modification Offer pursuant to Section 2.22, providing for an extension of the Revolving Maturity Date applicable to the Loans and/or

Commitments of the Accepting Lenders and, in connection therewith, (a) an increase in the Applicable Rate with respect to the Loans and/or Commitments of the Accepting Lenders, and/or (b) an increase in the fees payable to, or the inclusion of new fees to be payable to, the Accepting Lenders.

"Permitted Encumbrances" means:

(a) Liens imposed by Law for Taxes that are not yet due or are being contested in compliance with Section 5.06;

(b) carriers', warehousemen's, mechanics', materialmen's, repairmen's and other like Liens imposed by Law (other than any Lien imposed pursuant to Section 430(k) of the Code or Section 303(k) of ERISA or a violation of Section 436 of the Code), arising in the ordinary course of business and securing obligations that are not overdue by more than 30 days or are being contested in compliance with Section 5.06;

(c) pledges and deposits made (i) in the ordinary course of business in compliance with workers' compensation, unemployment insurance and other social security laws and (ii) in respect of letters of credit, bank guarantees or similar instruments issued for the account of the Borrower or any Subsidiary in the ordinary course of business supporting obligations of the type set forth in clause (i) above;

(d) pledges and deposits made (i) to secure the performance of bids, trade contracts, leases, statutory obligations, surety and appeal bonds, performance bonds and other obligations of a like nature, in each case in the ordinary course of business and (ii) in respect of letters of credit, bank guarantees or similar instruments issued for the account of the Borrower or any Subsidiary in the ordinary course of business supporting obligations of the type set forth in clause (i) above;

(e) judgment liens in respect of judgments that do not constitute an Event of Default under clause (k) of Article VII;

(f) easements, zoning restrictions, rights-of-way and similar encumbrances on real property imposed by Law or arising in the ordinary course of business that do not secure any monetary obligations and do not materially detract from the value of the affected property or interfere with the ordinary conduct of business of the Borrower or any Subsidiary;

(g) Liens arising from Permitted Investments described in clause (d) of the definition of Permitted Investments;

(h) banker's liens, rights of setoff or similar rights and remedies as to deposit accounts or other funds maintained with depository institutions; provided that such deposit accounts or funds are not established or deposited for the purpose of providing collateral for any Indebtedness and are not subject to restrictions on access by the Borrower or any Subsidiary in excess of those required by applicable banking regulations;

(i) Liens arising by virtue of Uniform Commercial Code financing statement filings (or similar filings under applicable Law) regarding operating leases entered into by the Borrower and the Subsidiaries in the ordinary course of business; and

(j) Liens representing any interest or title of a licensor, lessor or sublicensor or sublessor, or a licensee, lessee or sublicensee or sublessee, in the property subject to any lease, license or sublicense or concession agreement permitted by this Agreement;

provided that the term "Permitted Encumbrances" shall not include any Lien securing Indebtedness other than Liens referred to in clauses (c)(ii) and (d)(ii) above securing obligations under letters of credit, bankers guarantees or similar instruments.

"Permitted Holder" means the Bentley Brothers, their Family Members and their Family Trusts.

"Permitted Investments" means:

(a) direct obligations of, or obligations the principal of and interest on which are unconditionally guaranteed by, the United States of America or any agency or instrumentality thereof, in each case maturing within one year from the date of acquisition thereof;

(b) investments in commercial paper maturing within 270 days from the date of acquisition thereof and having, at such date of acquisition, the highest credit rating obtainable from S&P or Moody's;

(c) investments in certificates of deposit, banker's acceptances and demand or time deposits, in each case maturing within 180 days from the date of acquisition thereof, issued or guaranteed by or placed with, and money market deposit accounts issued or offered by, any domestic office of any commercial bank organized under the laws of the United States of America or any State thereof that has a combined capital and surplus and undivided profits of not less than $500,000,000;

(d) fully collateralized repurchase agreements with a term of not more than 30 days for securities described in clause (a) above and entered into with a financial institution satisfying the criteria described in clause (c) above;

(e) money market funds that (i) comply with the criteria set forth in Rule 2a-7 under the Investment Company Act of 1940, (ii) are rated AAA by S&P and Aaa by Moody's and (iii) have portfolio assets of at least $5,000,000,000; and

(f) in the case of any Foreign Subsidiary, other short-term investments that are analogous to the foregoing, are of comparable credit quality and are customarily used by companies in the jurisdiction of such Foreign Subsidiary for cash management purposes.

"Permitted Minority Investment Amount" has the meaning set forth in Section 6.04(o).

"Person" means any natural person, corporation, limited liability company, trust, joint venture, association, company, partnership, Governmental Authority or other entity.

"Plan" means any "employee pension benefit plan", as defined in Section 3(2) of ERISA (other than a Multiemployer Plan), that is subject to the provisions of Title IV of ERISA or Section 412 of the Code or Section 302 of ERISA, and in respect of which the Borrower or any of its ERISA Affiliates is (or, if such plan were terminated, would under Section 4069 of ERISA be deemed to be) an "employer" as defined in Section 3(5) of ERISA.

"PNC" means PNC Bank, National Association.

"Prime Rate" means the interest rate per annum announced from time to time by the Administrative Agent at its Principal Office as its then prime rate, which rate may not be the lowest or most favorable rate then being charged commercial borrowers or others by the Administrative Agent. Any change in the Prime Rate shall take effect at the opening of business on the day such change is announced.

"Principal Office" means the main banking office of the Administrative Agent in Pittsburgh, Pennsylvania.

"Published Rate" means the rate of interest published each Business Day in *The Wall Street Journal* "Money Rates" listing under the caption "London Interbank Offered Rates" for a one-month period (or, if no such rate is published therein for any reason, then the Published Rate shall be the rate at which U.S. dollar deposits are offered by leading banks in the London interbank deposit market for a one-month period as published in another publication determined by the Administrative Agent).

"Purchase Card Facility" means a purchase card facility providing corporate credit cards and related services to employees of one or more Loan Parties and all agreements or other arrangements in connection therewith.

"Qualified ECP Loan Party" means each Loan Party that on the Eligibility Date is (a) a corporation, partnership, proprietorship, organization, trust, or other entity other than a "commodity pool" as defined in Section 1a(10) of the CEA and the CFTC regulations thereunder that has total assets exceeding $10,000,000 or (b) an Eligible Contract Participant that can cause another person to qualify as an Eligible Contract Participant on the Eligibility Date under Section 1a(18)(A)(v)(II) of the CEA by entering into or otherwise providing a "letter of credit or keepwell, support, or other agreement" for purposes of Section 1a(18)(A)(v)(II) of the CEA.

"Reaffirmation Agreement" means the Reaffirmation and Amendment to Guarantee and Collateral Agreement, dated as of the Restatement Effective Date, among the Borrower, the other Loan Parties party thereto and the Administrative Agent.

"Recipient" has the meaning specified in Section 2.17(a).

"Reference Currency" has the meaning specified in the definition of "Equivalent Amount."

"Refinancing Indebtedness" means, in respect of any Indebtedness (the "Original Indebtedness"), any Indebtedness that extends, renews or refinances such Original Indebtedness (or any Refinancing Indebtedness in respect thereof); provided that (a) the principal amount of such Refinancing Indebtedness shall not exceed the principal amount of such Original Indebtedness except by an amount no greater than accrued and unpaid interest with respect to such Original Indebtedness and reasonable fees and expenses relating to such extension, renewal or refinancing; (b) the stated final maturity of such Refinancing Indebtedness shall not be earlier than that of such Original Indebtedness, and such stated final maturity shall not be subject to any conditions that could result in such stated final maturity occurring on a date that precedes the stated final maturity of such Original Indebtedness; (c) such Refinancing Indebtedness shall not be required to be repaid, prepaid, redeemed, repurchased or defeased, whether on one or more fixed dates, upon the occurrence of one or more events or at the option of any holder thereof (except, in each case, upon the occurrence of an event of default or a change in control or as and to the extent such repayment, prepayment, redemption, repurchase or defeasance would have been required pursuant to the terms of such Original Indebtedness) prior to the earlier of (i) the maturity of such Original Indebtedness and (ii) the date 91 days after the latest Revolving Maturity Date in effect on the date of such extension, renewal or refinancing, provided that, notwithstanding the foregoing, scheduled amortization payments (however denominated) of such Refinancing Indebtedness shall be permitted so long as the weighted average life to maturity of such Refinancing Indebtedness shall be longer than the weighted average life to maturity of such Original Indebtedness remaining as of the date of such extension, renewal or refinancing; (d) such Refinancing Indebtedness shall not constitute an obligation (including pursuant to a Guarantee) of any Subsidiary that shall not have been (or, in the case of after-acquired Subsidiaries, shall not have been required to become) an obligor in respect of such Original Indebtedness; (e) if such Original Indebtedness shall have been subordinated to the Loan Document Obligations, such Refinancing Indebtedness shall also be subordinated to the Loan Document Obligations on terms not less favorable in any material respect to the Lenders; and (f) such Refinancing Indebtedness shall not be secured by any Lien on any asset other than the assets that secured such Original Indebtedness (or would have been required to secure such Original Indebtedness pursuant to the terms thereof) or, in the event Liens securing such Original Indebtedness shall have been contractually subordinated to any Lien securing the Loan Document Obligations, by any Lien that shall not have been contractually subordinated to at least the same extent.

"Register" has the meaning set forth in Section 9.04(b).

"Related Parties" means, with respect to any specified Person, such Person's Affiliates and the directors, officers, partners, trustees, employees, agents and advisors of such Person and of such Person's Affiliates.

"Release" means any release, spill, emission, leaking, dumping, injection, pouring, deposit, disposal, discharge, dispersal, leaching or migration into or through the environment or within or upon any building, structure, facility or fixture.

"Relevant Interbank Market" means in relation to Euro and British Pounds Sterling, the London interbank market, and in relation to any other currencies, the applicable offshore interbank market. Notwithstanding the foregoing, the references to the currencies listed

in this definition shall only apply if such currencies are or become available as Optional Currencies in accordance with the terms hereof.

"Reportable Compliance Event" means that any Covered Entity becomes a Sanctioned Person, or is charged by indictment, criminal complaint or similar charging instrument, arraigned, or custodially detained in connection with any Anti-Terrorism Law or any predicate crime to any Anti-Terrorism Law, or has knowledge of facts or circumstances to the effect that it is reasonably likely that any aspect of its operations is in actual or probable violation of any Anti-Terrorism Law.

"Required Lenders" means Lenders (other than any Defaulting Lender) having more than 50% of the aggregate amount of the Revolving Commitments of the Lenders (excluding any Defaulting Lender) or, after the termination of the Revolving Commitments, having Revolving Exposures representing more than 50% of the Aggregate Revolving Exposure (excluding any Defaulting Lender).

"Restatement Effective Date" means the date on which the conditions specified in Section 4.01 are satisfied (or waived in accordance with Section 9.02), which date is December 19, 2017.

"Restricted Payment" means any dividend or other distribution (whether in cash, securities or other property) with respect to any Equity Interests in the Borrower or any Subsidiary, or any payment (whether in cash, securities or other property), including any sinking fund or similar deposit, on account of the purchase, redemption, retirement, acquisition, cancelation or termination of, or any other return of capital with respect to, any Equity Interests in the Borrower or any Subsidiary.

"Revolving Availability Period" means the period from and including the Restatement Effective Date to but excluding the earlier of the Revolving Maturity Date and the date of termination of the Revolving Commitments.

"Revolving Commitment" means, with respect to each Lender, the commitment, if any, of such Lender to make Revolving Loans and to acquire participations in Letters of Credit and Swingline Loans hereunder, expressed as an amount representing the maximum aggregate permitted amount of such Lender's Revolving Exposure hereunder, as such commitment may be (a) reduced from time to time pursuant to Section 2.08, (b) increased from time to time pursuant to Section 2.21 and (c) reduced or increased from time to time pursuant to assignments by or to such Lender pursuant to Section 9.04. The initial amount of each Lender's Revolving Commitment is set forth on Schedule 2.01, or in the Assignment and Assumption or the Incremental Facility Agreement pursuant to which such Lender shall have assumed its Revolving Commitment, as applicable. The initial aggregate amount of the Lenders' Revolving Commitments is $500,000,000.

"Revolving Exposure" means, with respect to any Lender at any time, the sum of the outstanding principal amount of such Lender's Revolving Loans and such Lender's LC Exposure and Swingline Exposure at such time.

"Revolving Loan" means a Loan made pursuant to clause (b) of Section 2.01.

"Revolving Maturity Date" means December 18, 2022 (or, if such date shall not be a Business Day, the immediately preceding Business Day).

"S&P" means Standard & Poor's Ratings Services, a division of The McGraw-Hill Companies, Inc., and any successor to its rating agency business.

"Sale/Leaseback Transaction" means an arrangement relating to property owned by the Borrower or any Subsidiary whereby the Borrower or such Subsidiary sells or transfers such property to any Person and the Borrower or any Subsidiary leases such property, or other property that it intends to use for substantially the same purpose or purposes as the property sold or transferred, from such Person or its Affiliates.

"Sanctioned Country" means a country or territory that is the target or subject of a sanctions program maintained under any Anti-Terrorism Law, including, without limitation, any country that is the subject of economic or financial sanctions imposed by the Office of Foreign Assets Control of the U.S. Department of the Treasury, the U.S. Department of State, the United Nations Security Council, the European Union or Her Majesty's Treasury of the United Kingdom.

"Sanctioned Person" means any individual person, group, regime, entity or thing listed or otherwise recognized as a specially designated, prohibited, sanctioned or debarred person, group, regime, entity or thing, or subject to any limitations or prohibitions (including but not limited to the blocking of property or rejection of transactions), under any Anti-Terrorism Law, including, without limitation, any Person listed on any sanctions-related list maintained by the Office of Foreign Assets Control of the U.S. Department of the Treasury, the U.S. Department of State, the United Nations Security Council, the European Union or Her Majesty's Treasury of the United Kingdom.

"SEC" means the United States Securities and Exchange Commission.

"Secured Hedge Obligations" has the meaning assigned to such term in the Collateral Agreement.

"Secured Obligations" has the meaning set forth in the Collateral Agreement.

"Secured Parties" has the meaning set forth in the Collateral Agreement.

"Securities Act" means the United States Securities Act of 1933.

"Security Documents" means the Collateral Agreement, the Foreign Pledge Agreements, the IP Security Agreements, the Control Agreements and each other security agreement or other instrument or document executed and delivered pursuant to Section 5.03 or 5.12 to secure the Secured Obligations.

"Significant Equity Holders" means the Bentley Brothers and any other individual that, together with his or her Family Members and Family Trusts, owns 1% or more of the aggregate ordinary voting power represented by the issued and outstanding Equity Interests in the Borrower.

"Specified Default" means a Default under clause (a), (b), (d) (insofar as such clause relates to Section 6.12 or 6.13) or (e) (insofar as such clause relates to the delivery under Section 5.01(a) of an audit opinion that does not contain a "going concern" qualification) of Article VII.

"Stock Option Plan" means (a) the 2005 Stock Option Plan, as amended and restated effective March 19, 2008, and the 2015 Equity Incentive Plan, as amended, of the Borrower, in each case as such plan is in effect on the date hereof, and (b) any other stock option plan (including either of the plans referred to in clause (a) above as it may be amended or otherwise modified after the date hereof) or other employee compensation plan so long as the terms thereof requiring or permitting the Borrower to repurchase any shares of capital stock of the Borrower or make any other Restricted Payments are not, in the aggregate, materially more adverse to the interests of the Lenders than the terms of the plans referred to in clause (a) above as in effect on the date hereof.

"Subordination Agreement" means the Amended and Restated Intercompany Subordination Agreement, dated as of the Restatement Effective Date, by and among the Administrative Agent, the Borrower and the Subsidiaries of the Borrower party thereto.

"subsidiary" means, with respect to any Person (the "parent") at any date, (a) any Person the accounts of which would be consolidated with those of the parent in the parent's consolidated financial statements if such financial statements were prepared in accordance with GAAP as of such date and (b) any other Person (i) of which Equity Interests representing more than 50% of the equity value or more than 50% of the ordinary voting power or, in the case of a partnership, more than 50% of the general partnership interests are, as of such date, owned, controlled or held, or (ii) that is, as of such date, otherwise Controlled, by the parent or one or more subsidiaries of the parent or by the parent and one or more subsidiaries of the parent.

"Subsidiary" means any subsidiary of the Borrower.

"Subsidiary Loan Party" means each Subsidiary that is a party to the Collateral Agreement.

"Supplemental IP Security Agreements" has the meaning set forth in the Collateral Agreement.

"Swap" means any "swap" as defined in Section 1(a)47 of the CEA and regulations thereunder, other than (a) a swap entered into, or subject to the rules of, a board of trade designated as a contract market under Section 5 of the CEA or (b) a commodity option entered into pursuant to CFTC Regulation 32.3(a).

"Swingline Exposure" means, at any time, the aggregate Dollar Equivalent principal amount of all Swingline Loans outstanding at such time. The Swingline Exposure of any Lender at any time shall be its Applicable Percentage of the total Swingline Exposure at such time.

"Swingline Lender" means PNC, in its capacity as lender of Swingline Loans hereunder.

"Swingline Loan" means a Loan made pursuant to Section 2.04.

"Swingline Loan Commitment" means PNC's commitment to make Swingline Loans to the Borrower in an aggregate Dollar Equivalent principal amount of up to $50,000,000.

"Swingline Loan Conversion Date" has the meaning set forth in Section 2.04(c).

"Swingline Loan Repayment Date" has the meaning set forth in Section 2.04(b).

"Swingline Notes" has the meaning assigned thereto in Section 2.04(b).

"Taxes" means any present or future taxes, levies, imposts, duties, deductions, withholdings (including backup withholding), assessments, fees or other charges imposed by any Governmental Authority, including any interest, additions to tax or penalties applicable thereto.

"Technology License Agreement" means the Technology License Agreement dated as of December 30, 2009, among the Borrower and Bentley Software International Limited, an Irish company.

"Total Funded Indebtedness" means, as of any date, the sum (without duplication) of (a) the aggregate principal amount of Indebtedness of the Borrower and the Subsidiaries outstanding as of such date, in the amount that would be reflected on a balance sheet prepared as of such date on a consolidated basis in accordance with GAAP (but without giving effect to any election to value any Indebtedness at "fair value", as described in Section 1.04(a), or any other accounting principle that results in the amount of any such Indebtedness (other than zero coupon Indebtedness) as reflected on such balance sheet to be below the stated principal amount of such Indebtedness), (b) the aggregate amount of Capital Lease Obligations of the Borrower and the Subsidiaries outstanding as of such date, determined on a consolidated basis, and (c) the aggregate obligations of the Borrower and the Subsidiaries as an account party in respect of letters of credit or letters of guaranty, other than contingent obligations in respect of any letter of credit or letter of guaranty to the extent such letter of credit or letter of guaranty does not support Indebtedness.

"Transactions" means the execution, delivery and performance of the Loan Documents by each of the Loan Parties intended to be a party thereto, the borrowing of the Loans and the issuance of the Letters of Credit hereunder and the use of the proceeds thereof.

"Type", when used in reference to any Loan or Borrowing, refers to whether the rate of interest on such Loan, or on the Loans comprising such Borrowing, is determined by reference to the LIBO Rate, the Alternate Base Rate or, in the case of Dollar Swingline Loans, the Daily LIBOR Rate, as determined by the Administrative Agent and the Borrower (or, with respect to Swingline Loans, such other rate as is agreed to by the Borrower and the Swingline Lender).

"U.S. Person" means a "United States person" within the meaning of Section 7701(a)(30) of the Code.

"U.S. Tax Certificate" has the meaning set forth in Section 2.17(f)(ii)(D)(2).

"UCP" has the meaning specified in Section 9.09.

"Unrestricted Cash" means cash, cash equivalents and Permitted Investments of the Borrower or any of its Subsidiaries that (a) would not be required to appear as "restricted" on a consolidated balance sheet of the Borrower or any of its Subsidiaries and (b) is not subject to any Lien in favor of any Person other than Liens created under the Loan Documents and Liens constituting Permitted Encumbrances of the type described in clause (h) of the definition of such term.

"USA PATRIOT Act" means the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, Public Law 107-56, as the same has been, or shall hereafter be, renewed, extended, amended or replaced.

"wholly owned", when used in reference to a subsidiary of any Person, means that all the Equity Interests in such subsidiary (other than directors' qualifying shares and other nominal amounts of Equity Interests that are required to be held by other Persons under applicable Law) are owned, beneficially and of record, by such Person, another wholly owned subsidiary of such Person or any combination thereof.

"Withdrawal Liability" means liability to a Multiemployer Plan as a result of a complete or partial withdrawal from such Multiemployer Plan, as such terms are defined in Part I of Subtitle E of Title IV of ERISA.

"Withholding Agent" means any Loan Party and the Administrative Agent.

"Write-Down and Conversion Powers" means, with respect to any EEA Resolution Authority, the write-down and conversion powers of such EEA Resolution Authority from time to time under the Bail-In Legislation for the applicable EEA Member Country, which write-down and conversion powers are described in the EU Bail-In Legislation Schedule.

SECTION 1.02. Classification of Loans and Borrowings. For purposes of this Agreement, Loans and Borrowings may be classified and referred to by Class (e.g., a "Revolving Loan" or "Revolving Borrowing") or by Type (e.g., a "Eurocurrency Loan" or "Eurocurrency Borrowing") or by Class and Type (e.g., a "Eurocurrency Revolving Loan" or "Eurocurrency Revolving Borrowing").

SECTION 1.03. Terms Generally. The definitions of terms herein shall apply equally to the singular and plural forms of the terms defined. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms. The words "include", "includes" and "including" shall be deemed to be followed by the phrase "without limitation". The word "will" shall be construed to have the same meaning and effect as the word "shall". The words "asset" and "property" shall be construed to have the same meaning and effect and to refer to any and all real and personal, tangible and intangible assets and properties, including cash, securities, accounts and contract rights. Unless the context requires otherwise, (a) any definition of or reference to any agreement, instrument or other document (including this Agreement and the other Loan Documents) shall be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise

modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), (b) any definition of or reference to any statute, rule or regulation shall be construed as referring thereto as from time to time amended, supplemented or otherwise modified (including by succession of comparable successor Laws), (c) any reference herein to any Person shall be construed to include such Person's successors and assigns (subject to any restrictions on assignment set forth herein) and, in the case of any Governmental Authority, any other Governmental Authority that shall have succeeded to any or all functions thereof, (d) the words "herein", "hereof" and "hereunder", and words of similar import, shall be construed to refer to this Agreement in its entirety and not to any particular provision hereof and (e) all references herein to Articles, Sections, Exhibits and Schedules shall be construed to refer to Articles and Sections of, and Exhibits and Schedules to, this Agreement.

SECTION 1.04. Accounting Terms; GAAP; Pro Forma Calculations. (a) Except as otherwise expressly provided herein, all terms of an accounting or financial nature used herein shall be construed in accordance with GAAP as in effect from time to time; provided that (i) if at any time any change in GAAP would affect in any material respect the computation of any covenant (including the computation of any financial covenant and resulting changes, if any, to the Applicable Rate) set forth in any Loan Document, (x) the Borrower may, by providing written notice to the Administrative Agent, and (y) the Administrative Agent or the Required Lenders may, by providing written notice to the Borrower (in either case), elect not to apply such change in GAAP, and concurrently with the delivery of such notice (or promptly thereafter if such notice is delivered by the Administrative Agent or the Required Lenders), the Borrower shall provide to the Administrative Agent a written reconciliation in form and substance reasonably satisfactory to the Administrative Agent, between calculations of such covenant made before and after the disapplication of such change in GAAP, (ii) notwithstanding any other provision contained herein, all terms of an accounting or financial nature used herein shall be construed, and all computations of amounts and ratios referred to herein (including financial covenants and other financial tests) shall be made without giving effect to any election under Statement of Financial Accounting Standards 159, The Fair Value Option for Financial Assets and Financial Liabilities, or any successor thereto (including pursuant to the Accounting Standards Codification), to value any Indebtedness of the Borrower or any Subsidiary at "fair value", as defined therein and (iii) notwithstanding the Accounting Standards Update issued by the Financial Accounting Standards Board ("FASB") on February 25, 2016 related to lease accounting standards and related materials issued by FASB, the treatment of leases for all purposes hereunder (and any related interest or lease expense) shall be based on GAAP prior to the implementation of such Accounting Standards Update. Without limiting the foregoing, operating leases shall not be deemed to be "capital leases" regardless of whether they may appear on the balance sheet under GAAP.

(b) All pro forma computations required to be made hereunder giving effect to any Material Acquisition, Material Disposition, Permitted Acquisition or other transaction shall be calculated after giving pro forma effect thereto (and, in the case of any pro forma computations made hereunder to determine whether such Material Acquisition, Material Disposition, Permitted Acquisition or other transaction is permitted to be consummated hereunder, to any other such transaction consummated since the first day of the period covered by any component of such pro forma computation and on or prior to the date of such computation) as if such transaction had occurred on the first day of the period of four

consecutive fiscal quarters ending with the most recent fiscal quarter for which financial statements shall have been delivered pursuant to Section 5.01(a) or 5.01(b) (or, prior to the delivery of any such financial statements, ending with the last fiscal quarter included in the financial statements referred to in Section 3.04(a)), and, to the extent applicable, to the historical earnings and cash flows associated with the assets acquired or disposed of and any related incurrence or reduction of Indebtedness, all in accordance with Article 11 of Regulation S-X under the Securities Act. If any Indebtedness bears a floating rate of interest and is being given pro forma effect, the interest on such Indebtedness shall be calculated as if the rate in effect on the date of determination had been the applicable rate for the entire period (taking into account any Hedging Agreement applicable to such Indebtedness if such Hedging Agreement has a remaining term in excess of 12 months).

SECTION 1.05. Currency Calculations. All financial statements and Compliance Certificates shall be set forth in Dollars. For purposes of preparing the financial statements, calculating financial covenants and determining compliance with covenants expressed in Dollars, Optional Currencies shall be converted to Dollars at the currency exchange rates in effect on the date of such determination; provided that no Default or Event of Default shall arise as a result of any limitation set forth in Dollars in Section 6.01 or 6.02 being exceeded solely as a result of changes in currency exchange rates from those rates applicable at the time or times Indebtedness or Liens were initially consummated in reliance on the exceptions under such Sections. For purposes of any determination under Section 6.04, 6.05 or 6.08, the amount of each Investment, disposition, Restricted Payment or other applicable transaction denominated in Optional Currencies shall be translated into Dollars at the currency exchange rate in effect on the date such Investment, disposition, Restricted Payment or other transaction is consummated. Such currency exchange rates shall be determined in good faith by the Borrower.

SECTION 1.06. Amendment and Restatement of Existing Credit Agreement. (a) This Agreement constitutes an amendment and restatement of the Existing Credit Agreement effective from and after the Restatement Effective Date. The parties to this Agreement agree that, upon (i) the execution and delivery by each of the parties hereto of this Agreement and (ii) satisfaction of the conditions set forth in Section 4.01 hereof (or waiver in accordance with Section 9.02), the terms and provisions of the Existing Credit Agreement shall be and hereby are amended, superseded and restated in their entirety by the terms and provisions of this Agreement. It is the express intent of the parties hereto that this Agreement is entered into in substitution for, and not in payment of, the obligations of the Borrower under the Existing Credit Agreement and is in no way intended to constitute a novation of any of the Borrower's indebtedness which was evidenced by the Existing Credit Agreement or any of the other Loan Documents. Upon the effectiveness hereof (I) all "Revolving Loans" (as defined in the Existing Credit Agreement) made under the Existing Credit Agreement which are outstanding on the Restatement Effective Date shall continue as Revolving Loans under (and shall be governed by the terms of) this Agreement and shall either have the same Interest Periods as in effect under the Existing Credit Agreement or an Interest Period of one Month as determined by the Administrative Agent in consultation with the Borrower, (II) all "Letters of Credit" issued (or deemed issued) under the Existing Credit Agreement which remain outstanding on the Restatement Effective Date shall continue as Letters of Credit under (and shall be governed by the terms of) this Agreement, (III) each Departing Lender's outstanding "Loans" under (and as defined in) the Existing Credit Agreement as of the Restatement Effective Date shall be repaid in

full in cash in immediately available funds (accompanied by any accrued and unpaid interest and fees thereon and any other amounts or liabilities owing to each Departing Lender under the Existing Credit Agreement), each Departing Lender's "Commitment" under and as defined in the Existing Credit Agreement shall be terminated and be of no further force and effect, each Departing Lender shall not be a Lender for any purpose hereunder (provided that each Departing Lender shall retain its respective rights as a "Lender" under the Existing Credit Agreement to expense reimbursement and indemnification pursuant to, and in accordance with, the terms of the Existing Credit Agreement), and such Departing Lender shall be released from any obligation or liability under the Existing Credit Agreement, (IV) all "Term Loans" (as defined in the Existing Credit Agreement) shall be paid in full including all accrued interest thereon, (V) all obligations constituting "Obligations" or "Secured Obligations" under and as defined in the Existing Credit Agreement or any Loan Document with any Lender (but not any Departing Lender or Affiliate of a Departing Lender) which are outstanding on the Restatement Effective Date and are not being paid on such date shall continue as Obligations or Secured Obligations, as applicable, under this Agreement and the other Loan Documents, (VI) all references in the "Loan Documents" (as defined in the Existing Credit Agreement) to the "Administrative Agent," the "Credit Agreement" and the "Loan Documents" shall be deemed to refer to the Administrative Agent, this Agreement and the Loan Documents (in each case as defined herein), (VII) the Administrative Agent shall make such reallocations, sales, assignments or other relevant actions in respect of each Lender's credit and loan exposure under the Existing Credit Agreement as are necessary in order that such Lender's pro rata share of the outstanding Loans hereunder reflect such Lender's pro rata share of the outstanding aggregate Loans on the Restatement Effective Date based on its Applicable Percentage, and (VIII) the Borrower shall compensate each Departing Lender for any and all losses, costs and expenses incurred by such Departing Lender in connection with the repayment of any "Eurocurrency Loans" (as defined in the Existing Credit Agreement), in each case on the terms and in the manner set forth in 2.16 of the Existing Credit Agreement, provided, however, that, for the avoidance of doubt, each Lender under this Agreement agrees to waive any right to compensation under Section 2.16 in connection with the reallocation and transactions described above. Without limiting the foregoing, the parties hereto (including, without limitation, each Departing Lender) hereby agree that the consent of any Departing Lender shall be limited to the acknowledgments and agreements set forth in this Section 1.06, and shall not be required as a condition to the effectiveness of any other amendments, restatements, supplements or modifications to the Existing Credit Agreement or the Loan Documents.

(b) On the Restatement Effective Date, each Lender (i) shall be deemed to have purchased a participation in each outstanding Letter of Credit in accordance with its Applicable Percentage and (ii) to the extent necessary, each Lender (including those Lenders that were not "Lenders" under and as defined in the Existing Credit Agreement) shall fund Revolving Loans (or receive payment of its "Revolving Loans", as defined in the Existing Credit Agreement) such that the Revolving Loans of each of the Lenders on the Restatement Effective Date are equal to its Applicable Percentage of the Revolving Loans of all of the Lenders outstanding on the Restatement Effective Date.

ARTICLE II

The Credits

SECTION 2.01. Commitments. Subject to the terms and conditions set forth herein, each Lender agrees to make Revolving Loans to the Borrower from time to time during the Revolving Availability Period in an aggregate principal amount that will not result in such Lender's Revolving Exposure exceeding such Lender's Revolving Commitment or the Aggregate Revolving Exposure exceeding the Aggregate Revolving Commitment. Within the foregoing limits and subject to the terms and conditions set forth herein, the Borrower may borrow, prepay and reborrow Revolving Loans.

SECTION 2.02. Loans and Borrowings. (a) Each Loan (other than a Swingline Loan) shall be made as part of a Borrowing consisting of Loans of the same Class and Type made by the Lenders ratably in accordance with their respective Commitments of the applicable Class. The failure of any Lender to make any Loan required to be made by it shall not relieve any other Lender of its obligations hereunder; provided that the Commitments of the Lenders are several and no Lender shall be responsible for any other Lender's failure to make Loans as required.

(b) Subject to Section 2.14, each Revolving Borrowing shall be comprised entirely of ABR Loans or Eurocurrency Loans as the Borrower may request in accordance herewith. The rate of interest on each Swingline Loan shall be determined in accordance with Section 2.13. Each Lender at its option may make any Loan by causing any domestic or foreign branch or Affiliate of such Lender to make such Loan; provided that any exercise of such option shall not affect the obligation of the Borrower to repay such Loan in accordance with the terms of this Agreement.

(c) At the commencement of each Interest Period for any Eurocurrency Borrowing (other than Swingline Loans), such Borrowing shall be in an aggregate amount that is an integral multiple of $500,000 and not less than $1,000,000; provided that a Eurocurrency Borrowing that results from a continuation of an outstanding Eurocurrency Borrowing may be in an aggregate amount that is equal to such outstanding Borrowing. At the time that each ABR Borrowing (other than Swingline Loans) is made, such Borrowing shall be in an aggregate amount that is an integral multiple of $500,000 and not less than $1,000,000; provided that an ABR Revolving Borrowing may be in an aggregate amount that is equal to the entire unused balance of the Aggregate Revolving Commitment or that is required to finance the reimbursement of an LC Disbursement as contemplated by Section 2.05(f). Each Swingline Loan (other than a Swingline Loan under a Cash Management Agreement) shall be in an amount permitted under Section 2.04(f). Borrowings of more than one Type and Class may be outstanding at the same time; provided that there shall not at any time be more than a total of ten (or such greater number as may be agreed to by the Administrative Agent) Eurocurrency Borrowings outstanding.

(d) Notwithstanding any other provision of this Agreement, the Borrower shall not be entitled to request, or to elect to convert to or continue, any Eurocurrency Borrowing if the Interest Period requested with respect thereto would end after the Revolving Maturity Date.

SECTION 2.03. Requests for Borrowings. To request a Revolving Borrowing, the Borrower shall notify the Administrative Agent of such request by telephone (a) in the case of a Eurocurrency Borrowing, not later than 11:00 a.m., Pittsburgh time, three Business Days before the date of the proposed Borrowing or (b) in the case of an ABR Borrowing, not later than 11:00 a.m., Pittsburgh time, on the day of the proposed Borrowing. Each such telephonic Borrowing Request shall be irrevocable and shall be confirmed promptly by hand delivery or facsimile to the Administrative Agent of an executed written Borrowing Request. Each such telephonic and written Borrowing Request shall specify the following information in compliance with Section 2.02:

(i) [intentionally omitted];

(ii) the aggregate amount of such Borrowing;

(iii) the date of such Borrowing, which shall be a Business Day;

(iv) whether such Borrowing is to be an ABR Borrowing or a Eurocurrency Borrowing;

(v) in the case of a Eurocurrency Borrowing, the initial Interest Period to be applicable thereto, which shall be a period contemplated by the definition of the term "Interest Period"; and

(vi) the location and number of the account of the Borrower to which funds are to be disbursed or, in the case of any ABR Revolving Borrowing requested to finance the reimbursement of an LC Disbursement as provided in Section 2.05(f), the identity of the Issuing Bank that made such LC Disbursement.

If no election as to the Type of Borrowing is specified, then the requested Borrowing shall be an ABR Borrowing. If no Interest Period is specified with respect to any requested Eurocurrency Borrowing, then the Borrower shall be deemed to have selected an Interest Period of one month's duration. Promptly following receipt of a Borrowing Request in accordance with this Section, the Administrative Agent shall advise each Lender of the details thereof and of the amount of such Lender's Loan to be made as part of the requested Borrowing.

Notwithstanding anything to the contrary herein (including Sections 2.07 and 2.13), any Revolving Loans made on the Restatement Effective Date shall be Eurocurrency Borrowings with an Interest Period of one Month, except to the extent that pursuant to Section 1.06, such Revolving Loans become part of a Borrowing Tranche of Loans that were outstanding on the Restatement Effective Date under the Existing Credit Agreement.

SECTION 2.04. Swingline Loans. (a) Subject to the terms and conditions set forth herein, the Swingline Lender agrees to make Swingline Loans to the Borrower from time to time during the Revolving Availability Period in Dollars (the "Dollar Swingline Loans") or in an Optional Currency (the "Optional Currency Swingline Loans") in an aggregate principal amount at any time outstanding that will not result in (i) the aggregate Dollar Equivalent principal amount of the outstanding Swingline Loans exceeding $50,000,000 or (ii) the Aggregate Revolving Exposure exceeding the Aggregate Revolving Commitment; provided that the

Swingline Lender shall not be required to make a Swingline Loan to refinance an outstanding Swingline Loan unless such Swingline Loan is an Optional Currency Swingline Loan. Within the foregoing limits and subject to the terms and conditions set forth herein, the Borrower may borrow, prepay and reborrow Swingline Loans. Each Swingline Loan shall be in at least the minimum amounts required under Section 2.04(f) below. The interest rate for a Swingline Loan shall be determined in accordance with Section 2.13.

(b) To request a Swingline Loan, the Borrower shall notify the Administrative Agent of such request by telephone not later than 12:00 noon, Pittsburgh time (i) with respect to Dollar Swingline Loans, on the day of the proposed Dollar Swingline Loan and (ii) with respect to Optional Currency Swingline Loans, four (4) Business Days prior to the proposed Borrowing Date specifying (i) the amount to be borrowed, (ii) the requested Borrowing Date, (iii) the date such Swingline Loan is to be repaid, if applicable, which date shall be, with respect to Optional Currency Swingline Loans, one Month from the Borrowing Date (the "Swingline Loan Repayment Date") and (iv) the currency in which such Swingline Loan shall be funded. The request for such Swingline Loan shall be irrevocable. Provided that all applicable conditions precedent contained herein have been satisfied, the Swingline Lender shall, not later than 4:00 p.m., Pittsburgh time, on the date specified in the Borrower's request for such Swingline Loan, make such Swingline Loan by crediting the Borrower's deposit account with PNC or, in the case of any Swingline Loan requested to finance the reimbursement of an LC Disbursement as provided in Section 2.05(f), the account of the Issuing Bank that has made such LC Disbursement as notified to the Administrative Agent. Each such telephonic Borrowing Request shall be irrevocable and shall be irrevocable and shall be confirmed promptly by hand delivery or facsimile to the Administrative Agent of an executed written Borrowing Request. Promptly following the receipt of a Borrowing Request in accordance with this Section, the Administrative Agent shall advise the Swingline Lender of the details thereof. The obligation of the Borrower to repay the Swingline Loans shall be evidenced by two promissory notes of the Borrower dated the date hereof, payable to the order of the Swingline Lender and substantially in the form of Exhibit H-1 and Exhibit H-2 (as amended, supplemented or otherwise modified from time to time, the "Swingline Notes").

(c) Swingline Loans shall be repaid on the earlier of (i) the Revolving Maturity Date or (ii) the Swingline Loan Repayment Date for such Swingline Loan, provided that with respect to an Optional Currency Swingline Loan, the Borrower may renew the Interest Period thereon by delivering a Swingline Loan Borrowing Request therefor at least four (4) Business Days prior to the proposed renewal thereof in accordance with the terms of Section 2.04(b) above. Notwithstanding anything to the contrary herein, any Swingline Loan at any time shall be repaid upon demand by the Administrative Agent (any such date being the "Swingline Loan Conversion Date") and the Borrower shall indemnify the Swingline Lender and each other Lender pursuant to Section 2.16 on account of such repayment. Unless the Borrower shall have notified the Administrative Agent prior to 11:00 a.m., Pittsburgh time, on such Swingline Loan Conversion Date (or, in the case of Optional Currency Swingline Loans, 11:00 a.m. Pittsburgh time four (4) Business Days prior to such Swingline Loan Conversion Date), that the Borrower intends to repay such Swingline Loan with funds other than the proceeds of a Revolving Loan, or, in the case of an Optional Currency Swingline Loan, renew the Interest Period with respect thereto, the Borrower shall be deemed to have given notice to the Administrative Agent requesting the Lenders to make Revolving Loans in U.S. Dollars in an amount equal to the

Dollar Equivalent amount of such Swingline Loans, which Revolving Loans shall earn interest at the Alternate Base Rate in effect on the Swingline Loan Conversion Date in an aggregate Dollar Equivalent amount equal to the amount of such Swingline Loan plus interest thereon, and the Lenders shall, on the Swingline Loan Conversion Date, make ABR Loans (without the requirement that they comply with the conditions for Revolving Loans in Section 2.02 and/or Section 2.03), in an aggregate amount equal to the Dollar Equivalent amount of such Swingline Loan plus interest thereon, the proceeds of which shall be applied directly by the Administrative Agent to repay the Swingline Lender for such Swingline Loan then due plus accrued interest thereon; and provided, further, that if for any reason the proceeds of such Revolving Loans are not received by the Swingline Lender on the Swingline Loan Conversion Date in an aggregate amount equal to the amount of such Swingline Loan then due plus accrued interest thereon, the Borrower shall reimburse the Swingline Lender on the day immediately following the Swingline Loan Conversion Date, in same day funds, in an amount equal to the excess of the amount of such Swingline Loan then due over the aggregate amount of such Revolving Loans, if any, received plus accrued interest thereon.

(d) In the event that the Borrower shall fail to repay the Swingline Lender as provided in Section 2.04(c), the Swingline Lender shall convert such Swingline Loan, if an Optional Currency Swingline Loan, to a Dollar Swingline Loan at the Dollar Equivalent amount of such Swingline Loan and the Administrative Agent shall promptly notify each Lender of the unpaid Dollar Equivalent amount of such Swingline Loan and of such Lender's respective participation therein in a Dollar Equivalent amount equal to such Lender's Applicable Percentage of such Swingline Loan, as calculated at the date the Swingline Lender converts the Optional Currency in which Optional Currency Swingline Loans are denominated into Dollars, if applicable. Each Lender shall make available to the Administrative Agent for payment to the Swingline Lender (and each Lender hereby absolutely and unconditionally agrees to pay to the Swingline Lender on account of such participation) a Dollar Equivalent amount equal to its respective participation therein based on its Applicable Percentage of such Swingline Loan or Loans (plus accrued interest thereon), in Dollars and in same day funds at the office of the Administrative Agent specified in such notice. If such notice is delivered by the Administrative Agent by 11:00 a.m., Pittsburgh time, each Lender shall make funds available to the Administrative Agent on that Business Day. If such notice is delivered after 11:00 a.m., Pittsburgh time, each Lender shall make funds available to the Administrative Agent on the next Business Day. In the event that any Lender fails to make available to the Administrative Agent the Dollar Equivalent amount of such Lender's participation in such unpaid amount as provided herein, the Swingline Lender shall be entitled to recover such amount on demand from such Lender together with interest thereon at a rate per annum equal to the Federal Funds Effective Rate for each day during the period between the date such participation amount is required to be paid and the date on which such Lender makes available its participation in such unpaid amount. The failure of any Lender to make available to the Administrative Agent its Applicable Percentage of any such unpaid amount shall not relieve any other Lender of its obligations hereunder to make available to the Administrative Agent its Applicable Percentage of such unpaid amount when due as set forth above. Each Lender acknowledges and agrees that, in making any Swingline Loan, the Swingline Lender shall be entitled to rely, and shall not incur any liability for relying, upon the representation and warranty of the Borrower deemed made pursuant to Section 4.02, unless, at least one Business Day prior to the time such Swingline Loan was made, the Required Lenders shall have notified the Swingline Lender (with a copy to the

Administrative Agent) in writing that, as a result of one or more events or circumstances described in such notice, one or more of the conditions precedent set forth in Section 4.02(a) or 4.02(b) would not be satisfied if such Swingline Loan were then made (it being understood and agreed that, in the event the Swingline Lender shall have received any such notice, it shall have no obligation to make any Swingline Loan until and unless it shall be satisfied in its sole discretion that the events and circumstances described in such notice shall have been cured or otherwise shall have ceased to exist). Each Lender further acknowledges and agrees that its obligation to acquire participations in Swingline Loans pursuant to this paragraph is absolute and unconditional and shall not be affected by any circumstance whatsoever, including the occurrence and continuance of a Default or any reduction or termination of the Revolving Commitments, and that each such payment shall be made without any offset, abatement, withholding or reduction whatsoever. Each Lender shall comply with its obligation under this paragraph by wire transfer of immediately available funds, in the same manner as provided in Section 2.06 with respect to Loans made by such Lender (and Section 2.06 shall apply, mutatis mutandis, to the payment obligations of the Lenders pursuant to this paragraph), and the Administrative Agent shall promptly remit to the Swingline Lender the amounts so received by it from the Lenders. The Administrative Agent shall notify the Borrower of any participations in any Swingline Loan acquired pursuant to this paragraph, and thereafter payments in respect of such Swingline Loan shall be made to the Administrative Agent and not to the Swingline Lender. Any amounts received by the Swingline Lender from the Borrower (or other Person on behalf of the Borrower) in respect of a Swingline Loan after receipt by the Swingline Lender of the proceeds of a sale of participations therein shall be promptly remitted to the Administrative Agent; any such amounts received by the Administrative Agent shall be promptly remitted by the Administrative Agent to the Lenders that shall have made their payments pursuant to this paragraph and to the Swingline Lender, as their interests may appear; provided that any such payment so remitted shall be repaid to the Swingline Lender or to the Administrative Agent, as applicable, if and to the extent such payment is required to be refunded to the Borrower (or any other Person) for any reason. The purchase of participations in a Swingline Loan pursuant to this paragraph shall not constitute a Loan and shall not relieve the Borrower of its obligation to repay such Swingline Loan.

(e) In the event the Aggregate Revolving Commitment is terminated in accordance with the terms hereof, the Swingline Loan Commitment shall also be terminated automatically. In the event the Borrower reduces the Aggregate Revolving Commitment to less than the Swingline Loan Commitment, the Swingline Loan Commitment shall immediately be reduced to an amount equal to the Aggregate Revolving Commitment. In the event the Borrower reduces the Aggregate Revolving Commitment to less than the outstanding Dollar Equivalent principal amount of the Swingline Loans then outstanding, the Borrower shall immediately repay the amount by which such outstanding Swingline Loans exceeds the Swingline Loan Commitment as so reduced plus accrued interest thereon.

(f) At no time shall there be more than (i) one (1) outstanding Dollar Swingline Loan, except as to Swingline Loans made pursuant to Section 2.04(h) and (ii) three (3) outstanding Optional Currency Swingline Loans, in each case unless otherwise agreed by the Swingline Lender. Each Dollar Swingline Loan shall be in a minimum original principal amount of $100,000 and integral multiples of $50,000, except as to Swingline Loans made pursuant to Section 2.04(h), as to which there shall be no minimum. Each Optional Currency Swingline

Loan shall be in a minimum original principal amount of the Dollar Equivalent of $1,000,000 and integral multiples thereof, unless otherwise agreed by the Administrative Agent.

(g) The Borrower shall have the right at any time and from time to time to prepay the Swingline Loans, in whole or in part, without premium or penalty (but in any event subject to Section 2.16), upon prior written, facsimile or telephonic notice to the Swingline Lender given by the Borrower no later than 11:00 a.m., Pittsburgh time, on the date of any proposed prepayment; provided that, notice of the prepayment of any Optional Currency Swingline Loan shall be provided no later than 11:00 a.m., Pittsburgh time, four (4) Business Days prior to the date of prepayment unless otherwise agreed by the Swingline Lender. Each notice of prepayment shall specify the Swingline Loan to be prepaid and the amount to be prepaid, shall be irrevocable and shall commit the Borrower to prepay such amount on such date, with accrued interest thereon and any other amounts owed hereunder.

(h) In addition to making Dollar Swingline Loans pursuant to the foregoing provisions of this Section 2.04, without the requirement for a specific request from the Borrower pursuant to subsection 2.04(b), the Swingline Lender may make Swingline Loans to the Borrower in Dollars in accordance with the provisions of any agreements between the Borrower and the Swingline Lender relating to the Borrower's deposit, sweep and other accounts at the Swingline Lender and related arrangements and agreements regarding the management and investment of the Borrower's cash assets that are satisfactory to the Administrative Agent and Swingline Lender (the "Cash Management Agreements") to the extent of the daily aggregate net negative balance in the Borrower's accounts which are subject to the provisions of the Cash Management Agreements. Dollar Swingline Loans made pursuant to this subsection 2.04(h) in accordance with the provisions of the Cash Management Agreements shall (i) be subject to the limitations as to aggregate amount set forth in subsection 2.04(f), (ii) not be subject to the limitations as to individual amount set forth above in this Section 2.04, (iii) be payable by the Borrower, both as to principal and interest, at the times set forth in the Cash Management Agreements (but in no event later than the Revolving Maturity Date), (iv) not be made at any time after the Required Lenders shall have notified the Swingline Lender (with a copy to the Administrative Agent) in writing that, as a result of one or more events or circumstances described in such notice, one or more of the conditions precedent set forth in Section 4.02(a) or 4.02(b) would not be satisfied if such Swingline Loan were then made (unless the Administrative Agent shall be satisfied in its sole discretion that the events and circumstances described in such notice shall have been cured or otherwise shall have ceased to exist), (v) not be subject to the notice and timing provisions set forth above in this Section, (vi) if not repaid by the Borrower in accordance with the provisions of the Cash Management Agreements, be subject to each Lender's obligation to purchase participating interests therein pursuant to Section 2.04(d), and (vii) except as provided in the foregoing subsections (i) through (vi), be subject to all of the terms and conditions of this Section 2.04. If any Cash Management Agreements are in effect, Dollar Swingline Loans shall only be made pursuant to such Cash Management Agreements.

(i) Each Lender shall ratably in accordance with its Applicable Percentage, indemnify the Swingline Lender, its affiliates and their respective directors, officers, agents and employees (to the extent not reimbursed by the Borrower) against any cost, expense (including reasonable counsel fees and expenses), claim, demand, action, loss or liability (except any of the foregoing that results from the indemnitees' gross negligence or willful misconduct) that such

indemnitees may suffer or incur in connection with this Section 2.04 or any action taken or omitted by such indemnitees hereunder.

SECTION 2.05. Letters of Credit. (a) General. Subject to the terms and conditions set forth herein, the Borrower may request the issuance of Letters of Credit for its own account, denominated in either Dollars or an Optional Currency and in a form reasonably acceptable to the Administrative Agent and the applicable Issuing Bank, at any time and from time to time during the Revolving Availability Period. On the Restatement Effective Date, each Existing Letter of Credit shall be deemed, for all purposes of this Agreement (including paragraphs (d) and (f) of this Section), to be a Letter of Credit issued hereunder for the account of the Borrower. The Borrower unconditionally and irrevocably agrees that, in connection with any Existing Letter of Credit, it will be fully responsible for the reimbursement of LC Disbursements, the payment of interest thereon and the payment of fees due under Section 2.12(c) to the same extent as if it were the account party in respect of such Existing Letter of Credit. Notwithstanding anything contained in any letter of credit application furnished to any Issuing Bank in connection with the issuance of any Letter of Credit, (i) all provisions of such letter of credit application purporting to grant liens in favor of the Issuing Bank to secure obligations in respect of such Letter of Credit shall be disregarded, it being agreed that such obligations shall be secured to the extent provided in this Agreement and in the Security Documents, and (ii) in the event of any inconsistency between the terms and conditions of such letter of credit application and the terms and conditions of this Agreement, the terms and conditions of this Agreement shall control.

(b) Notice of Issuance, Amendment, Renewal, Extension; Certain Conditions. To request the issuance of a Letter of Credit or the amendment, renewal or extension of an outstanding Letter of Credit, the Borrower shall hand deliver or fax (or transmit by electronic communication, if arrangements for doing so have been approved by the recipient) to the applicable Issuing Bank and the Administrative Agent, reasonably in advance of the requested date of issuance, amendment, renewal or extension (but in no event less than five (5) Business Days unless otherwise agreed to by such Issuing Bank), a notice requesting the issuance of a Letter of Credit, or identifying the Letter of Credit to be amended, renewed or extended, and specifying the requested date of issuance, amendment, renewal or extension (which shall be a Business Day), the date on which such Letter of Credit is to expire (which shall comply with paragraph (c) of this Section), the amount of such Letter of Credit, whether such Letter of Credit will be in Dollars or an Optional Currency (and, if in an Optional Currency, which Optional Currency), the name and address of the beneficiary thereof and such other information as shall be necessary to enable the applicable Issuing Bank to prepare, amend, renew or extend such Letter of Credit. If requested by the applicable Issuing Bank, the Borrower also shall submit a letter of credit application on such Issuing Bank's standard form in connection with any such request. A Letter of Credit shall be issued, amended, renewed or extended only if (and upon each issuance, amendment, renewal or extension of any Letter of Credit the Borrower shall be deemed to represent and warrant that), after giving effect to such issuance, amendment, renewal or extension, (i) the LC Exposure will not exceed $50,000,000 (the "Letter of Credit Sublimit") and (ii) the Aggregate Revolving Exposure will not exceed the Aggregate Revolving Commitment. Each Issuing Bank agrees that it shall not permit any issuance, amendment, renewal or extension of a Letter of Credit to occur unless it shall have given to the Administrative Agent the written notice thereof required under paragraph (l) of this Section; provided that such written notice shall

not be required for any Letter of Credit issued by an Issuing Bank that is at such time also the Administrative Agent.

(c) Expiration Date. Each Letter of Credit shall expire at or prior to the close of business on the earlier of (i) the date one year after the date of the issuance of such Letter of Credit (or, in the case of any renewal or extension thereof, one year after such renewal or extension) and (ii) the Revolving Maturity Date; provided that (A) each Existing Letter of Credit shall expire in accordance with the terms thereof, but any extension or renewal thereof shall be subject to the conditions of this paragraph (c), and (B) any Letter of Credit may contain customary automatic renewal provisions agreed upon by the Borrower and the applicable Issuing Bank pursuant to which the expiration date of such Letter of Credit shall automatically be extended for a period of up to 12 months (but not to a date later than the date set forth in clause (ii) above), subject to a right on the part of such Issuing Bank to prevent any such renewal from occurring by giving notice to the beneficiary in advance of any such renewal.

(d) Participations. By the issuance of a Letter of Credit (or an amendment to a Letter of Credit increasing the amount thereof) and without any further action on the part of the applicable Issuing Bank or any Lender, the Issuing Bank that is the issuer thereof hereby grants to each Lender, and each Lender hereby acquires from such Issuing Bank, a participation in such Letter of Credit equal to such Lender's Applicable Percentage of the aggregate amount available to be drawn under such Letter of Credit. In consideration and in furtherance of the foregoing, each Lender hereby absolutely and unconditionally agrees to pay to the Administrative Agent, for the account of such Issuing Bank, such Lender's Applicable Percentage of each LC Disbursement made by such Issuing Bank under such Letter of Credit and not reimbursed by the Borrower on the date due as provided in paragraph (f) of this Section, or of any reimbursement payment required to be refunded to the Borrower or any other Person for any reason. Each Lender acknowledges and agrees that its obligation to acquire participations pursuant to this paragraph in respect of Letters of Credit is absolute and unconditional and shall not be affected by any circumstance whatsoever, including any amendment, renewal or extension of any Letter of Credit or the occurrence and continuance of a Default or any reduction or termination of the Revolving Commitments, and that each such payment shall be made without any offset, abatement, withholding or reduction whatsoever. Each Lender further acknowledges and agrees that, in issuing, amending, renewing or extending any Letter of Credit, the applicable Issuing Bank shall be entitled to rely, and shall not incur any liability for relying, upon the representation and warranty of the Borrower deemed made pursuant to Section 4.02, unless, at least one Business Day prior to the time such Letter of Credit is issued, amended, renewed or extended, the Required Lenders shall have notified the applicable Issuing Bank (with a copy to the Administrative Agent) in writing that, as a result of one or more events or circumstances described in such notice, one or more of the conditions precedent set forth in Section 4.02(a) or 4.02(b) would not be satisfied if such Letter of Credit were then issued, amended, renewed or extended (it being understood and agreed that, in the event any Issuing Bank shall have received any such notice, it shall have no obligation to issue, amend, renew or extend any Letter of Credit until and unless it shall be satisfied in its sole discretion that the events and circumstances described in such notice shall have been cured or otherwise shall have ceased to exist).

(e) Disbursements. Each Issuing Bank shall, promptly following its receipt thereof, examine all documents purporting to represent a demand for payment under a Letter of

Credit and shall promptly notify the Administrative Agent and the Borrower by telephone (confirmed promptly by hand delivery or facsimile) of such demand for payment and whether such Issuing Bank has made or will make an LC Disbursement thereunder; provided that any failure to give or delay in giving such notice shall not relieve the Borrower of its obligation to reimburse such LC Disbursement.

(f) Reimbursements. If an Issuing Bank shall make an LC Disbursement in respect of a Letter of Credit, the Borrower shall reimburse such LC Disbursement in Dollars by paying to the Administrative Agent an amount equal to the Dollar Equivalent amount of such LC Disbursement not later than (i) if the Borrower shall have received notice of such LC Disbursement prior to 10:00 a.m., Pittsburgh time, on any Business Day, then 1:00 p.m., Pittsburgh time, on such Business Day or (ii) otherwise, 1:00 p.m., Pittsburgh time, on the Business Day immediately following the day that the Borrower receives such notice; provided that, if the amount of such LC Disbursement is $500,000 or more, the Borrower may, subject to the conditions to borrowing set forth herein, request in accordance with Section 2.03 or 2.04 that such payment be financed with an ABR Borrowing in Dollars or a Dollar Swingline Loan and, to the extent so financed, the Borrower's obligation to make such payment shall be discharged and replaced by the resulting ABR Borrowing or Dollar Swingline Loan. If the Borrower fails to reimburse any LC Disbursement by the time specified above, the Administrative Agent shall notify each Lender of such failure, the payment then due in Dollars from the Borrower in respect of the applicable LC Disbursement and such Lender's Applicable Percentage thereof. Promptly following receipt of such notice, each Lender shall pay to the Administrative Agent in Dollars its Applicable Percentage of the amount then due in Dollars from the Borrower, in the same manner as provided in Section 2.06 with respect to Loans made by such Lender (and Section 2.06 shall apply, mutatis mutandis, to the payment obligations of the Lenders pursuant to this paragraph), and the Administrative Agent shall promptly remit to the applicable Issuing Bank the amounts so received by it from the Lenders. Promptly following receipt by the Administrative Agent of any payment from the Borrower pursuant to this paragraph, the Administrative Agent shall distribute such payment to the applicable Issuing Bank or, to the extent that Lenders have made payments pursuant to this paragraph to reimburse such Issuing Bank, then to such Lenders and such Issuing Bank as their interests may appear. Any payment made by a Lender pursuant to this paragraph to reimburse an Issuing Bank for an LC Disbursement (other than the funding of an ABR Borrowing in Dollars or a Dollar Swingline Loan as contemplated above) shall not constitute a Loan and shall not relieve the Borrower of its obligation to reimburse such LC Disbursement.

(g) Obligations Absolute. The Borrower's obligation to reimburse LC Disbursements as provided in paragraph (f) of this Section, and each Lender's participation obligation as provided in paragraph (d) of this Section, is absolute, unconditional and irrevocable and shall be performed strictly in accordance with the terms of this Agreement under any and all circumstances whatsoever and irrespective of (i) any lack of validity or enforceability of any Letter of Credit or this Agreement, or any term or provision thereof or hereof, (ii) any draft or other document presented under a Letter of Credit proving to be forged, fraudulent or invalid in any respect or any statement therein being untrue or inaccurate in any respect, (iii) payment by an Issuing Bank under a Letter of Credit against presentation of a draft or other document that does not comply with the terms of such Letter of Credit or (iv) any other event or circumstance whatsoever, whether or not similar to any of the foregoing, that might, but for the provisions of this paragraph, constitute a legal or equitable discharge of, or provide a right of setoff against,

the Borrower's or such Lender's obligations hereunder. None of the Administrative Agent, the Lenders, the Issuing Banks or any of their Related Parties shall have any liability or responsibility by reason of or in connection with the issuance or transfer of any Letter of Credit, any payment or failure to make any payment thereunder (irrespective of any of the circumstances referred to in the preceding sentence), any error, omission, interruption, loss or delay in transmission or delivery of any draft, notice or other communication under or relating to any Letter of Credit (including any document required to make a drawing thereunder), any error in interpretation of technical terms or any other act, failure to act or other event or circumstance; provided that the foregoing shall not be construed to excuse any Issuing Bank from liability to the Borrower to the extent of any direct damages (as opposed to special, indirect, consequential or punitive damages, claims in respect of which are hereby waived by the Borrower to the extent permitted by applicable Law) suffered by the Borrower that are caused by such Issuing Bank's failure to exercise care when determining whether drafts and other documents presented under a Letter of Credit comply with the terms thereof. The parties hereto expressly agree that, in the absence of gross negligence or willful misconduct on the part of an Issuing Bank (as determined by a court of competent jurisdiction in a final and nonappealable judgment), such Issuing Bank shall be deemed to have exercised care in each such determination. In furtherance of the foregoing and without limiting the generality thereof, the parties agree that, with respect to documents presented that appear on their face to be in substantial compliance with the terms of a Letter of Credit, an Issuing Bank may, in its sole discretion, either accept and make payment upon such documents without responsibility for further investigation, regardless of any notice or information to the contrary, or refuse to accept and make payment upon such documents if such documents are not in strict compliance with the terms of such Letter of Credit.

(h) Interim Interest. If an Issuing Bank shall make any LC Disbursement, then, unless the Borrower shall reimburse such LC Disbursement in full in Dollars on the date such LC Disbursement is made, the unpaid Dollar Equivalent amount thereof shall bear interest, for each day from and including the date such LC Disbursement is made to but excluding the date that the Borrower reimburses such LC Disbursement in full in Dollars, at the rate per annum then applicable to ABR Revolving Loans; provided that, if the Borrower fails to reimburse such LC Disbursement when due pursuant to paragraph (f) of this Section, then Section 2.13(d) shall apply. Interest accrued pursuant to this paragraph shall be paid to the Administrative Agent, for the account of the applicable Issuing Bank, except that interest accrued on and after the date of payment by any Lender pursuant to paragraph (f) of this Section to reimburse such Issuing Bank shall be for the account of such Lender to the extent of such payment, and shall be payable on demand or, if no demand has been made, on the date on which the Borrower reimburses the applicable LC Disbursement in full.

(i) Cash Collateralization. If any Event of Default shall occur and be continuing, on the Business Day that the Borrower receives notice from the Administrative Agent or the Required Lenders demanding the deposit of cash collateral pursuant to this paragraph, the Borrower shall deposit in an account with the Administrative Agent, in the name of the Administrative Agent and for the benefit of the Lenders, an amount in cash in Dollars equal to the LC Exposure as of such date plus any accrued and unpaid interest thereon; provided that the obligation to deposit such cash collateral shall become effective immediately, and such deposit shall become immediately due and payable, without demand or other notice of any kind, upon the occurrence of any Event of Default with respect to the Borrower described in clause (h)

or (i) of Article VII. The Borrower also shall deposit cash collateral in Dollars in accordance with this paragraph as and to the extent required by Section 2.11(b) or 2.20. Each such deposit shall be held by the Administrative Agent as collateral for the payment and performance of the obligations of the Borrower under this Agreement. The Administrative Agent shall have exclusive dominion and control, including the exclusive right of withdrawal, over such account. Other than any interest earned on the investment of such deposits, which investments shall be made at the option and sole discretion of the Administrative Agent and at the Borrower's risk and expense, such deposits shall not bear interest. Interest or profits, if any, on such investments shall accumulate in such account. Moneys in such account shall be applied by the Administrative Agent to reimburse the Issuing Banks in Dollars for LC Disbursements for which they have not been reimbursed and, to the extent not so applied, shall be held for the satisfaction of the reimbursement obligations of the Borrower for the LC Exposure at such time or, if the maturity of the Loans has been accelerated (but subject to the consent of the Required Lenders), be applied to satisfy other obligations of the Borrower under this Agreement. If the Borrower is required to provide an amount of cash collateral hereunder as a result of the occurrence of an Event of Default, such amount (to the extent not applied as aforesaid) shall be returned to the Borrower, upon the written request of the Borrower, within three Business Days after all Events of Default have been cured or waived. If the Borrower is required to provide an amount of cash collateral hereunder pursuant to Section 2.11(b), such amount (to the extent not applied as aforesaid) shall be returned to the Borrower as and to the extent that, after giving effect to such return, the Aggregate Revolving Exposure would not exceed the Aggregate Revolving Commitment and no Default shall have occurred and be continuing.

(j) Designation of Additional Issuing Banks. The Borrower may, at any time and from time to time, with the consent of the Administrative Agent (which consent shall not be unreasonably withheld), designate as additional Issuing Banks one or more Lenders that agree to serve in such capacity as provided below. The acceptance by a Lender of an appointment as an Issuing Bank hereunder shall be evidenced by an agreement, which shall be in form and substance reasonably satisfactory to the Administrative Agent, executed by the Borrower, the Administrative Agent and such designated Lender and, from and after the effective date of such agreement, (i) such Lender shall have all the rights and obligations of an Issuing Bank under this Agreement and (ii) references herein to the term "Issuing Bank" shall be deemed to include such Lender in its capacity as an issuer of Letters of Credit hereunder.

(k) Termination of an Issuing Bank. The Borrower may terminate the appointment of any Issuing Bank as an "Issuing Bank" hereunder by providing a written notice thereof to such Issuing Bank, with a copy to the Administrative Agent. Any such termination shall become effective upon the earlier of (i) such Issuing Bank acknowledging receipt of such notice and (ii) the 10th Business Day following the date of the delivery thereof; provided that no such termination shall become effective until and unless the LC Exposure attributable to Letters of Credit issued by such Issuing Bank (or its Affiliates) shall have been reduced to zero. At the time any such termination shall become effective, the Borrower shall pay all unpaid fees accrued for the account of the terminated Issuing Bank pursuant to Section 2.12(c). Notwithstanding the effectiveness of any such termination, the terminated Issuing Bank shall remain a party hereto and shall continue to have all the rights of an Issuing Bank under this Agreement with respect to Letters of Credit issued by it prior to such termination, but shall not issue any additional Letters of Credit.

(l) Issuing Bank Reports to the Administrative Agent. Unless otherwise agreed by the Administrative Agent, each Issuing Bank shall, in addition to its notification obligations set forth elsewhere in this Section, report in writing to the Administrative Agent (i) periodic activity (for such period or recurrent periods as shall be requested by the Administrative Agent) in respect of Letters of Credit issued by such Issuing Bank, including all issuances (and whether such issuance is in Dollars or an Optional Currency), extensions, amendments and renewals, all expirations and cancellations and all disbursements and reimbursements, (ii) reasonably prior to the time that such Issuing Bank issues, amends, renews or extends any Letter of Credit, the date of such issuance, amendment, renewal or extension, and the stated amount (in the applicable currency or currencies) of the Letters of Credit issued, amended, renewed or extended by it and outstanding after giving effect to such issuance, amendment, renewal or extension (and whether the amounts thereof shall have changed), (iii) on each Business Day on which such Issuing Bank makes any LC Disbursement, the date and amount (and whether in Dollars or an Optional Currency) of such LC Disbursement, (iv) on any Business Day on which the Borrower fails to reimburse an LC Disbursement required to be reimbursed to such Issuing Bank on such day, the date of such failure and the amount of such LC Disbursement (and whether such LC Disbursement was in Dollars or an Optional Currency) and (v) on any other Business Day, such other information as the Administrative Agent shall reasonably request as to the Letters of Credit issued by such Issuing Bank. Notwithstanding the foregoing, if such Issuing Bank is the same institution as the Administrative Agent, it shall not be required to provide the foregoing report to the Administrative Agent.

(m) LC Exposure Determination. For all purposes of this Agreement, the amount of a Letter of Credit that, by its terms or the terms of any document related thereto, provides for one or more automatic increases in the stated amount thereof shall be deemed to be the maximum stated amount of such Letter of Credit after giving effect to all such increases, whether or not such maximum stated amount is in effect at the time of determination.

SECTION 2.06. Funding of Borrowings. (a) Each Lender shall make each Loan to be made by it hereunder on the proposed date thereof by wire transfer of immediately available funds by 1:00 pm, Pittsburgh time, to the account of the Administrative Agent most recently designated by it for such purpose by notice to the Lenders; provided that Swingline Loans shall be made as provided in Section 2.04. The Administrative Agent will make such Loans available to the Borrower by promptly remitting the amounts so received, in like funds, to an account of the Borrower or, in the case of ABR Revolving Loans made to finance the reimbursement of an LC Disbursement as provided in Section 2.05(f), to the Issuing Bank specified by the Borrower in the applicable Borrowing Request.

(b) Unless the Administrative Agent shall have received notice from a Lender prior to the proposed date of any Borrowing that such Lender will not make available to the Administrative Agent such Lender's share of such Borrowing, the Administrative Agent may assume that such Lender has made such share available on such date in accordance with paragraph (a) of this Section and may, in reliance on such assumption, make available to the Borrower a corresponding amount. In such event, if a Lender has not in fact made its share of the applicable Borrowing available to the Administrative Agent, then the applicable Lender and the Borrower severally agree to pay to the Administrative Agent forthwith on demand such corresponding amount with interest thereon, for each day from and including the date such

amount is made available to the Borrower to but excluding the date of payment to the Administrative Agent, at (i) in the case of a payment to be made by such Lender, the greater of the Federal Funds Effective Rate (or, in the case of Swingline Loans or other amounts due in an Optional Currency, the Overnight Rate) and a rate determined by the Administrative Agent in accordance with banking industry rules on interbank compensation or (ii) in the case of a payment to be made by the Borrower, the interest rate applicable to ABR Revolving Loans (or, at the election of the Swingline Lender with respect to Optional Currency Swingline Loans, the rate otherwise applicable to such Optional Currency Swingline Loans). If such Lender pays such amount to the Administrative Agent, then such amount shall constitute such Lender's Loan included in such Borrowing.

SECTION 2.07. Interest Elections. (a) Each Revolving Borrowing initially shall be of the Type and, in the case of a Eurocurrency Borrowing, shall have an initial Interest Period as specified in the applicable Borrowing Request or as otherwise provided in Section 2.03. Thereafter, the Borrower may elect to convert such Borrowing to a Borrowing of a different Type or to continue such Borrowing and, in the case of a Eurocurrency Borrowing, may elect Interest Periods therefor, all as provided in this Section. The Borrower may elect different options with respect to different portions of the affected Borrowing, in which case each such portion shall be allocated ratably among the Lenders holding the Loans comprising such Borrowing, and the Loans comprising each such portion shall be considered a separate Borrowing. This Section shall not apply to Swingline Borrowings.

(b) To make an election pursuant to this Section, the Borrower shall notify the Administrative Agent of such election by telephone by the time that a Borrowing Request would be required under Section 2.03 if the Borrower were requesting a Revolving Borrowing of the Type resulting from such election to be made on the effective date of such election. Each such telephonic Interest Election Request shall be irrevocable and shall be confirmed promptly by hand delivery or facsimile to the Administrative Agent of an executed written Interest Election Request. Each telephonic and written Interest Election Request shall specify the following information in compliance with Section 2.02:

(i) the Borrowing to which such Interest Election Request applies and, if different options are being elected with respect to different portions thereof, the portions thereof to be allocated to each resulting Borrowing (in which case the information to be specified pursuant to clauses (iii) and (iv) below shall be specified for each resulting Borrowing);

(ii) the effective date of the election made pursuant to such Interest Election Request, which shall be a Business Day;

(iii) whether the resulting Borrowing is to be an ABR Borrowing or a Eurocurrency Borrowing; and

(iv) if the resulting Borrowing is to be a Eurocurrency Borrowing, the Interest Period to be applicable thereto after giving effect to such election, which shall be a period contemplated by the definition of the term "Interest Period".

If any such Interest Election Request requests a Eurocurrency Borrowing but does not specify an Interest Period, then the Borrower shall be deemed to have selected an Interest Period of one month's duration.

(c) Promptly following receipt of an Interest Election Request in accordance with this Section, the Administrative Agent shall advise each Lender of the applicable Class of the details thereof and of such Lender's portion of each resulting Borrowing.

(d) If the Borrower fails to deliver a timely Interest Election Request with respect to a Eurocurrency Borrowing of Revolving Loans prior to the end of the Interest Period applicable thereto, then, unless such Borrowing is repaid as provided herein, at the end of such Interest Period such Borrowing shall be continued as a Eurocurrency Borrowing with an Interest Period of one month's duration. Notwithstanding any contrary provision hereof, if an Event of Default under clause (h) or (i) of Article VII has occurred and is continuing with respect to the Borrower, or if any other Event of Default has occurred and is continuing and the Administrative Agent, at the request of a Majority in Interest of Lenders of any Class, has notified the Borrower of the election to give effect to this sentence on account of such other Event of Default, then, in each such case, so long as such Event of Default is continuing, (i) no outstanding Borrowing of such Class may be converted to or continued as a Eurocurrency Borrowing and (ii) unless repaid, each Eurocurrency Borrowing of such Class shall be converted to an ABR Borrowing at the end of the Interest Period applicable thereto.

SECTION 2.08. Termination and Reduction of Commitments. (a) The Revolving Commitments shall automatically terminate on the Revolving Maturity Date.

(b) The Borrower may at any time terminate, or from time to time permanently reduce, the Commitments of any Class; provided that (i) each reduction of the Commitments of any Class shall be in an amount that is an integral multiple of $500,000 and not less than $1,000,000 and (ii) the Borrower shall not terminate or reduce the Revolving Commitments if, after giving effect to any concurrent prepayment of the Revolving Loans or Swingline Loans in accordance with Section 2.11, the Aggregate Revolving Exposure would exceed the Aggregate Revolving Commitment.

(c) The Borrower shall notify the Administrative Agent of any election to terminate or reduce the Commitments under paragraph (b) of this Section at least three Business Days prior to the effective date of such termination or reduction, specifying the effective date thereof. Promptly following receipt of any such notice, the Administrative Agent shall advise the Lenders of the applicable Class of the contents thereof. Each notice delivered by the Borrower pursuant to this Section shall be irrevocable; provided that a notice of termination or reduction of the Revolving Commitments under paragraph (b) of this Section may state that such notice is conditioned upon the occurrence of one or more events specified therein, in which case such notice may be revoked by the Borrower (by notice to the Administrative Agent on or prior to the specified effective date) if such condition is not satisfied. Any termination or reduction of the Commitments of any Class shall be permanent. Each reduction of the Commitments of any Class shall be made ratably among the Lenders in accordance with their respective Commitments of such Class.

SECTION 2.09. Repayment of Loans; Evidence of Debt. (a) The Borrower hereby unconditionally promises to pay (i) to the Administrative Agent for the account of each Lender the then unpaid principal amount of each Revolving Loan of such Lender on the Revolving Maturity Date, and (ii) to the Swingline Lender the then unpaid principal amount of each Swingline Loan on the Revolving Maturity Date or as required pursuant to Section 2.04.

(b) The records maintained by the Administrative Agent and the Lenders shall be prima facie evidence of the existence and amounts of the obligations of the Borrower in respect of the Loans, LC Disbursements, interest and fees due or accrued hereunder; provided that the failure of the Administrative Agent or any Lender to maintain such records or any error therein shall not in any manner affect the obligation of the Borrower to pay any amounts due hereunder in accordance with the terms of this Agreement.

(c) Any Lender may request that Loans of any Class made by it be evidenced by a promissory note. In such event, the Borrower shall prepare, execute and deliver to such Lender a promissory note payable to such Lender (or, if requested by such Lender, to such Lender and its registered assigns) and in a form approved by the Administrative Agent. Thereafter, the Loans evidenced by such promissory note and interest thereon shall at all times (including after assignment pursuant to Section 9.04) be represented by one or more promissory notes in such form payable to the payee named therein (or, if such promissory note is a registered note, to such payee and its registered assigns).

(d) All payments to the Administrative Agent or the Swingline Lender, as the case may be, shall be made at the Principal Office (or, with respect to Optional Currency Loans, at the Principal Office or, if directed by the Administrative Agent, at such other office of the Administrative Agent as the Administrative Agent shall so direct) and in immediately available funds.

SECTION 2.10. [Intentionally Omitted].

SECTION 2.11. Prepayment of Loans. (a) The Borrower shall have the right at any time and from time to time to prepay any Borrowing in whole or in part, subject to the requirements of this Section.

(b) In the event and on each occasion that the Aggregate Revolving Exposure exceeds the Aggregate Revolving Commitment (other than as a result of fluctuations in currencies), the Borrower shall prepay Revolving Borrowings or Swingline Borrowings (or, if no such Borrowings are outstanding, deposit cash collateral in an account with the Administrative Agent in accordance with Section 2.05(i)) in an aggregate amount equal to such excess. The Borrower also shall make the prepayments required under Section 2.27.

(c) [Intentionally Omitted]

(d) [Intentionally Omitted]

(e) Prior to any optional or mandatory prepayment of Borrowings under this Section, the Borrower shall specify the Borrowing or Borrowings to be prepaid in the notice of such prepayment delivered pursuant to paragraph (f) of this Section.

(f) The Borrower shall notify the Administrative Agent (and, in the case of prepayment of a Swingline Loan, the Swingline Lender) by telephone (confirmed by hand delivery or facsimile) of any optional prepayment and, to the extent practicable, any mandatory prepayment hereunder (i) in the case of prepayment of a Eurocurrency Borrowing (other than Optional Currency Swingline Loans), not later than 11:00 a.m., Pittsburgh time, three Business Days before the date of prepayment, (ii) in the case of prepayment of an Optional Currency Swingline Loan, not later than 11:00 Pittsburgh time, four Business Days before the date of prepayment, (iii) in the case of prepayment of an ABR Borrowing, not later than 11:00 a.m., Pittsburgh time, one Business Day before the date of prepayment or (iv) in the case of prepayment of a Dollar Swingline Loan, not later than 11:00 a.m., Pittsburgh time, on the date of prepayment as provided in Section 2.03(g). Each such notice shall be irrevocable and shall specify the prepayment date, the principal amount of each Borrowing or portion thereof to be prepaid (and, if applicable, the Optional Currency of any Optional Currency Swingline Loan being prepaid) and, in the case of a mandatory prepayment, a reasonably detailed calculation of the amount of such prepayment; provided that if a notice of optional prepayment is given in connection with a conditional notice of termination of the Revolving Commitments as contemplated by Section 2.08, then such notice of prepayment may be revoked if such notice of termination is revoked in accordance with Section 2.08. Promptly following receipt of any such notice (other than a notice relating solely to Swingline Loans), the Administrative Agent shall advise the Lenders of the applicable Class of the contents thereof. Each partial prepayment of any Borrowing shall be in an amount that would be permitted in the case of an advance of a Borrowing of the same Type as provided in Section 2.02, except as necessary to apply fully the required amount of a mandatory prepayment. Each prepayment of a Borrowing shall be applied ratably to the Loans included in the prepaid Borrowing. Prepayments shall be accompanied by accrued interest to the extent required by Section 2.13.

SECTION 2.12. Fees. (a) [Intentionally Omitted.]

(b) The Borrower agrees to pay to the Administrative Agent for the account of each Lender a commitment fee in Dollars, which shall accrue at the Applicable Rate on the daily unused Dollar Equivalent amount of the Revolving Commitment of such Lender during the period from and including the Restatement Effective Date to but excluding the date on which such Revolving Commitment terminates. Accrued commitment fees shall be payable in Dollars in arrears on the last day of March, June, September and December of each year and on the date on which the Revolving Commitments terminate, commencing on the first such date to occur after the Restatement Effective Date. All commitment fees shall be computed on the basis of a year of 360 days and shall be payable for the actual number of days elapsed (including the first day but excluding the last day). For purposes of computing commitment fees, a Revolving Commitment of a Lender shall be deemed to be used to the extent of the outstanding Revolving Loans and LC Exposure of such Lender (and solely for the purposes of computing commitment fees, the Swingline Exposure of each Lender other than the Swingline Lender shall be disregarded for such purpose and the Swingline Loans shall be considered to be borrowed amounts under the Swingline Lender's Revolving Commitment).

(c) The Borrower agrees to pay (i) to the Administrative Agent for the account of each Lender (including the applicable Issuing Bank in its capacity as a Lender) a participation fee in Dollars with respect to its participations in Letters of Credit, which shall

accrue at the Applicable Rate used to determine the interest rate applicable to Eurocurrency Revolving Loans on the daily amount of such Lender's LC Exposure (excluding any portion thereof attributable to unreimbursed LC Disbursements) during the period from and including the Restatement Effective Date to but excluding the later of the date on which such Lender's Revolving Commitment terminates and the date on which such Lender ceases to have any LC Exposure; provided, that, upon the occurrence of an Event of Default and until such Event of Default shall have been cured or waived, at the discretion of the Administrative Agent or upon written demand by the Required Lenders to the Administrative Agent, the participation fee paid to each Lender shall be increased by two percent (2%) per annum, and (ii) to each Issuing Bank for its own account a fronting fee in Dollars, which shall accrue at a rate per annum equal to 0.125% on the average daily amount of the LC Exposure attributable to Letters of Credit issued by such Issuing Bank (excluding any portion thereof attributable to unreimbursed LC Disbursements) during the period from and including the Restatement Effective Date to but excluding the later of the date of termination of the Revolving Commitments and the date on which there ceases to be any such LC Exposure, as well as such Issuing Bank's standard fees with respect to the issuance, amendment, renewal or extension of any Letter of Credit or processing of drawings thereunder. Participation fees and fronting fees accrued through and including the last day of March, June, September and December of each year shall be payable on the third Business Day following such last day, commencing on the first such date to occur after the Restatement Effective Date; provided that all such fees shall be payable on the date on which the Revolving Commitments terminate and any such fees accruing after the date on which the Revolving Commitments terminate shall be payable on demand. Any other fees payable to an Issuing Bank pursuant to this paragraph shall be payable within 10 days after demand. All participation fees and fronting fees shall be computed on the basis of a year of 360 days and shall be payable in Dollars for the actual number of days elapsed (including the first day but excluding the last day).

(d) The Borrower agrees to pay to the Administrative Agent, for its own account, fees payable in the amounts and at the times separately agreed upon between the Borrower and the Administrative Agent, including as set forth in the Fee Letter.

(e) All fees payable hereunder shall be paid on the dates due, in immediately available funds, to the Administrative Agent (or to an Issuing Bank, in the case of fees payable to it) for distribution, in the case of commitment fees and participation fees, to the Lenders entitled thereto. Fees paid shall not be refundable under any circumstances.

SECTION 2.13. Interest. (a) The Loans comprising each ABR Borrowing (including any Dollar Swingline Loan bearing interest based on the Alternate Base Rate) shall bear interest at the Alternate Base Rate plus the Applicable Rate.

(b) The Loans comprising each Eurocurrency Borrowing (other than any Swingline Loans) shall bear interest at the LIBO Rate for the Interest Period in effect for such Borrowing plus the Applicable Rate.

(c) (i) Except as provided in the next sentence hereof, each Dollar Swingline Loan shall bear interest at the Daily LIBOR Rate plus the Applicable Rate for Revolving Loans that are Eurocurrency Loans (or such other rate that is mutually agreed to by

the Borrower and the Swingline Lender in writing at the time such Swingline Loan is made); provided that if the Swingline Lender determines (which determination shall be conclusive absent manifest error) that adequate and reasonable means do not exist for ascertaining the Daily LIBOR Rate or that the Daily LIBOR Rate will not adequately and fairly reflect the cost of the Swingline Lender of making or maintaining such Swingline Loans, Dollar Swingline Loans shall bear interest at the Alternate Base Rate plus the Applicable Rate unless otherwise mutually agreed by the Borrower and the Swingline Lender in writing at the time such Swingline Loan is made. Notwithstanding the foregoing, in the case of Swingline Loans made in accordance with Cash Management Agreements pursuant to Section 2.04(h), such Swingline Loans shall bear interest as determined in accordance with such Cash Management Agreements.

(ii) Each Optional Currency Swingline Loan shall bear interest at the LIBO Rate for the Interest Period in effect for such Borrowing (i.e., one Month) plus the Applicable Rate and no Optional Currency Swingline Loan shall bear interest based on the Alternate Base Rate.

(d) Notwithstanding the foregoing, if any principal of or interest on any Loan or any fee or other amount payable by the Borrower hereunder is not paid when due, whether at stated maturity, upon acceleration or otherwise, such overdue amount shall bear interest, after as well as before judgment, at a rate per annum equal to (i) in the case of overdue principal of any Loan, 2% per annum plus the rate otherwise applicable to such Loan as provided in the preceding paragraphs of this Section or (ii) in the case of any other amount, 2% per annum plus the rate applicable to ABR Revolving Loans as provided in paragraph (a) of this Section. In addition, but without duplication of the immediately preceding sentence, at any time that an Event of Default shall have occurred and be continuing, at the written request of the Required Lenders and whether or not any principal or interest of any Loan has not been paid when due, all Loans shall bear interest, after as well as before judgment, at a rate per annum equal to 2% per annum plus the rate otherwise applicable to such Loans as provided in the preceding paragraphs of this Section.

(e) Accrued interest on each Loan shall be payable in arrears on each Interest Payment Date for such Loan and upon termination of the Revolving Commitments; provided that (i) interest accrued pursuant to paragraph (d) of this Section shall be payable on demand, (ii) in the event of any repayment or prepayment of any Loan (other than a prepayment of an ABR Revolving Loan prior to the end of the Revolving Availability Period), accrued interest on the principal amount repaid or prepaid shall be payable on the date of such repayment or prepayment and (iii) in the event of any conversion of a Eurocurrency Loan prior to the end of the current Interest Period therefor, accrued interest on such Loan shall be payable on the effective date of such conversion.

(f) All interest hereunder shall be computed on the basis of a year of 360 days, except that (i) interest computed by reference to the Alternate Base Rate shall be computed on the basis of a year of 365 days (or 366 days in a leap year) and (ii) in the case of interest in respect of Optional Currency Swingline Loans as to which market practice differs from the foregoing, in accordance with such market practice, and in each case shall be payable for the actual number of days elapsed (including the first day but excluding the last day). The

applicable Alternate Base Rate, LIBO Rate or Daily LIBOR Rate shall be determined by the Administrative Agent, and such determination shall be conclusive absent manifest error.

(g) For purposes of the *Interest Act* (Canada): (i) whenever any interest or fee under this Agreement is calculated on the basis of a period of time other than a calendar year, such rate used in such calculation, when expressed as an annual rate, is equivalent to (x) such rate, multiplied by (y) the actual number of days in the calendar year in which the period for which such interest or fee is calculated ends, and divided by (z) the number of days in such period of time, (ii) the principle of deemed reinvestment of interest shall not apply to any interest calculation under this Agreement, and (iii) the rates of interest stipulated in this Agreement are intended to be nominal rates and not effective rates or yields.

SECTION 2.14. Alternate Rate of Interest. (a) If prior to the commencement of any Interest Period for a Eurocurrency Borrowing of any Class (including an Optional Currency Swingline Loan):

(i) the Administrative Agent determines (which determination shall be conclusive absent manifest error) that adequate and reasonable means do not exist for ascertaining the LIBO Rate for such Interest Period or a contingency has occurred which materially and adversely affects the Relevant Interbank Market;

(ii) the Administrative Agent is advised by a Majority in Interest of the Lenders of such Class (or, in the case of any Optional Currency Swingline Loan, by the Swingline Lender) that the LIBO Rate for such Interest Period will not adequately and fairly reflect the cost to such Lenders (or, if applicable, the Swingline Lender) of making or maintaining their Loans included in such Eurocurrency Borrowing for such Interest Period;

(iii) the Administrative Agent is advised by a Majority Interest of the Lenders of such Class (or, in the case of Optional Currency Swingline Loans, by the Swingline Lender) that after making all reasonable efforts, deposits of the relevant amount in Dollars or in the Optional Currency (as applicable) for the relevant Interest Period for a Loan to which a LIBO Rate Option applies are not available to such Lender or the Swingline Lender, as applicable, with respect to such Loan in the Relevant Interbank Market; or

(iv) the Administrative Agent is advised by a Majority in Interest of the Lenders of such Class (or, in the case of Optional Currency Swingline Loans, by the Swingline Lender) that the making, maintenance or funding of any Loan to which a LIBO Rate Option applies has been made impractible or unlawful by compliance by such Lender (or the Swingline Lender, as the case may be) in good faith with any Law or any interpretation or application thereof by any Governmental Authority or with any request or directive of any such Governmental Authority (whether or not having the force of Law);

then the Administrative Agent shall give notice (which may be telephonic) thereof to the Borrower and the Lenders of such Class as promptly as practicable and, subject to clause (b)

below of this Section 2.14, until the Administrative Agent notifies the Borrower and the Lenders of such Class that the circumstances giving rise to such notice no longer exist, (x) any Interest Election Request that requests the conversion of any Borrowing of such Class to, or continuation of any Borrowing of such Class as, a Eurocurrency Borrowing shall be ineffective, and such Borrowing shall (I) in the case of a Revolving Loan, be continued as an ABR Borrowing or converted to an ABR Borrowing (A) on the last day of the applicable Interest Period, as the case may be, if the Lenders may lawfully continue to maintain such Loans or (B) immediately if the Lenders may not lawfully continue to maintain such Loans, or (II) in the case of a Swingline Loan, be repaid in full (A) on the last day of the applicable Interest Period if the Swingline Lender may lawfully continue to maintain such Loans, (B) immediately if the Swingline Lender may not lawfully continue to maintain such Swingline Loans or (C) immediately if such Swingline Loan has no Interest Period (e.g., a Swingline Loan at the Daily Libor Rate), (y) any Borrowing Request for a Eurocurrency Borrowing of Revolving Loans of such Class shall be treated as a request for an ABR Borrowing and (z) any Borrowing Request for an Optional Currency Swingline Loan will be deemed withdrawn.

(b) Notwithstanding anything to the contrary herein (including without limitation the definition of LIBO Rate), if the Administrative Agent determines (which determination shall be final and conclusive, absent manifest error) that either (i)(x) the circumstances set forth in Section 2.14(a)(i) have arisen and are unlikely to be temporary or (y) the circumstances set forth in Section 2.14(a)(i) have not arisen but the applicable supervisor or administrator (if any) of LIBOR or a Governmental Authority having jurisdiction over the Administrative Agent has made a public statement identifying the specific date after which the LIBO Rate shall no longer be used for determining interest rates for loans (either of (i)(x) or (i)(y), a "LIBOR Termination Date"), or (ii) the LIBO Rate is no longer a widely recognized benchmark rate for newly originated loans in Dollars in the U.S. market, then the Administrative Agent may (in consultation with the Borrower) choose a replacement index rate ("Replacement Rate"), and, as appropriate, adjustment margin(s) ("Adjustment Margin(s)") corresponding to each available LIBOR term, to effect, to the extent practicable, an aggregate all-in interest rate comparable to the LIBOR-based rate in effect prior to its replacement. The Replacement Rate and Adjustment Margin(s) will be determined with due consideration to the then-prevailing market practice for determining a rate of interest for newly originated syndicated loans in the United States, and may reflect appropriate adjustments to account for the transition from LIBOR to the Replacement Rate.

The Administrative Agent shall promptly notify the Lenders of the Replacement Rate and Adjustment Margin(s), and the Administrative Agent and the Borrower shall enter into an amendment to this Agreement to reflect such Replacement Rate and Adjustment Margin(s). Notwithstanding anything to the contrary in this Agreement or the other Loan Documents (including, without limitation, Section 9.02), such amendment shall become effective without any further action or consent of any other party to this Agreement so long as the Administrative Agent shall not have received, within ten (10) Business Days of the date a draft of the amendment reflecting such Replacement Rate and Adjustment Margin(s) is provided to the Lenders, a written notice from the Required Lenders stating that such Lenders object to such amendment.

Until an amendment reflecting a new Reference Rate and Adjustment Margin(s), if any, is entered into in accordance with this Section 2.14(b), each advance, conversion and renewal of a Loan under the LIBO Rate Option will continue to bear interest with reference to the LIBO Rate; provided, however, that if the Administrative Agent determines (which determination shall be final and conclusive, absent manifest error) that a LIBOR Termination Date has occurred, then following the LIBOR Termination Date, (i) all Revolving Loans as to which the LIBO Rate Option would otherwise apply shall automatically be converted to the Base Rate Option until such time that an amendment reflecting a new Reference Rate and Adjustment Margin(s), if any, is entered into and (ii) all Swingline Loans shall be repaid in full unless otherwise agreed by the Swingline Lender.

For the avoidance of doubt, on or after the effective date of the Replacement Rate, the aggregate all-in interest payable by the Borrower in respect of the Loans shall be the sum of the Replacement Rate, the Adjustment Margin(s), if any, and the Applicable Margin.

SECTION 2.15. Increased Costs. (a) If any Change in Law shall:

(i) impose, modify or deem applicable any reserve, special deposit, compulsory loan, insurance charge or similar requirement (including any compulsory loan requirement, insurance charge or other assessment) against assets of, deposits with or for the account of, or credit extended by, any Lender or Issuing Bank (except any such reserve requirement reflected in the LIBO Rate or, in the case of Optional Currency Swingline Loans, reimbursed by the Borrower pursuant to Section 2.23(a));

(ii) impose on any Lender or Issuing Bank or the Relevant Interbank Market any other condition, cost or expense (other than Taxes) affecting this Agreement or Loans made by such Lender or any Letter of Credit or participation therein; or

(iii) subject any Recipient to any Taxes (other than (A) Indemnified Taxes, (B) Taxes described in clauses (b) through (d) of the definition of Excluded Taxes and (C) Connection Income Taxes) on its loans, loan principal, letters of credit, commitments or other obligations, or its deposits, reserves, other liabilities or capital attributable thereto;

and the result of any of the foregoing shall be to increase the cost to such Lender or other Recipient of making, converting to, continuing or maintaining any Eurocurrency Loan (including any Optional Currency Swingline Loan or any Dollar Swingline Loans bearing interest at a LIBOR based rate) (or of maintaining its obligation to make any such Loan), to increase the cost to such Lender, Issuing Bank or other Recipient of participating in, issuing or maintaining any Letter of Credit (or of maintaining its obligation to participate in or issue any Letter of Credit) or to reduce the amount of any sum received or receivable by such Lender, Issuing Bank or other Recipient hereunder (whether of principal, interest or any other amount), then, from time to time upon request of such Lender, Issuing Bank or other Recipient, the Borrower will pay to such Lender, Issuing Bank or other Recipient, as the case may be, such additional amount or amounts as will compensate such Lender, Issuing Bank or other Recipient, as the case may be, for such additional costs or expenses incurred or reduction suffered.

(b) If any Lender or Issuing Bank determines that any Change in Law regarding capital or liquidity requirements has had or would have the effect of reducing the rate of return on such Lender's or Issuing Bank's capital or on the capital of such Lender's or Issuing Bank's holding company, if any, as a consequence of this Agreement, the Commitments of or the Loans made by, or participations in Letters of Credit or Swingline Loans held by, such Lender, or the Letters of Credit issued by such Issuing Bank, to a level below that which such Lender or Issuing Bank or such Lender's or Issuing Bank's holding company could have achieved but for such Change in Law (taking into consideration such Lender's or Issuing Bank's policies and the policies of such Lender's or Issuing Bank's holding company with respect to capital adequacy and liquidity), then, from time to time upon request of such Lender or Issuing Bank, the Borrower will pay to such Lender or Issuing Bank, as the case may be, such additional amount or amounts as will compensate such Lender or Issuing Bank or such Lender's or Issuing Bank's holding company for any such reduction suffered.

(c) A certificate of a Lender or Issuing Bank setting forth the amount or amounts necessary to compensate such Lender or Issuing Bank or its holding company, as the case may be, as specified in paragraph (a) or (b) of this Section delivered to the Borrower shall be conclusive absent manifest error. The Borrower shall pay such Lender or Issuing Bank, as the case may be, the amount shown as due on any such certificate within 10 days after receipt thereof.

(d) Failure or delay on the part of any Lender or Issuing Bank to demand compensation pursuant to this Section shall not constitute a waiver of such Lender's or Issuing Bank's right to demand such compensation; provided that the Borrower shall not be required to compensate a Lender or Issuing Bank pursuant to this Section for any increased costs or expenses incurred or reductions suffered more than 270 days prior to the date that such Lender or Issuing Bank, as the case may be, notifies the Borrower of the Change in Law giving rise to such increased costs or expenses or reductions and of such Lender's or Issuing Bank's intention to claim compensation therefor; provided further that, if the Change in Law giving rise to such increased costs or expenses or reductions is retroactive, then the 270-day period referred to above shall be extended to include the period of retroactive effect thereof.

SECTION 2.16. Break Funding Payments. In the event of (a) the payment of any principal of any Eurocurrency Loan other than on the last day of an Interest Period applicable thereto (including as a result of an Event of Default), (b) the conversion of any Eurocurrency Loan other than on the last day of the Interest Period applicable thereto, (c) the failure to borrow, convert or continue any Eurocurrency Loan on the date specified in any notice delivered pursuant hereto or (d) the assignment of any Eurocurrency Loan other than on the last day of the Interest Period applicable thereto as a result of a request by the Borrower pursuant to Section 2.19, then, in any such event, the Borrower shall compensate each Lender for the loss, cost and expense attributable to such event. Such loss, cost or expense to any Lender shall be deemed to include an amount determined by such Lender to be the excess, if any, of (i) the amount of interest that would have accrued on the principal amount of such Loan had such event not occurred, at the LIBO Rate that would have been applicable to such Loan (but not including the Applicable Rate applicable thereto), for the period from the date of such event to the last day of the then current Interest Period therefor (or, in the case of a failure to borrow, convert or continue, for the period that would have been the Interest Period for such Loan), over (ii) the

amount of interest that would accrue on such principal amount for such period at the interest rate which such Lender would bid were it to bid, at the commencement of such period, for dollar deposits (or deposits in the relevant Optional Currency, as the case may be) of a comparable amount and period from other banks in the Relevant Interbank Market. Such losses, costs or expenses shall also include any foreign exchange losses, costs or expenses, including in connection with any foreign exchange contracts. The Borrower shall also compensate each Lender for the loss, cost and expense attributable to any failure by the Borrower to deliver a timely Interest Election Request with respect to a Eurocurrency Loan. A certificate of any Lender delivered to the Borrower and setting forth any amount or amounts that such Lender is entitled to receive pursuant to this Section shall be conclusive absent manifest error. The Borrower shall pay such Lender the amount shown as due on any such certificate within 10 days after receipt thereof.

SECTION 2.17. Taxes. (a) Withholding of Taxes; Gross-Up. Each payment by a Loan Party under this Agreement or any other Loan Document, whether to the Administrative Agent, any Lender or Issuing Bank or any other Person to which any such obligation is owed (each of the foregoing being referred to as a "Recipient"), shall be made without withholding for any Taxes, unless such withholding is required by any Law. If any Withholding Agent determines, in its sole discretion exercised in good faith, that it is so required to withhold Taxes, then such Withholding Agent may so withhold and shall timely pay the full amount of withheld Taxes to the relevant Governmental Authority in accordance with applicable Law. If such Taxes are Indemnified Taxes, then the amount payable by such Loan Party shall be increased as necessary so that net of such withholding (including such withholding applicable to additional amounts payable under this Section), the applicable Recipient receives the amount it would have received had no such withholding been made.

(b) Payment of Other Taxes by the Borrower. The Borrower shall timely pay any Other Taxes to the relevant Governmental Authority in accordance with applicable Law.

(c) Evidence of Payments. As soon as practicable after any payment of Indemnified Taxes by a Loan Party to a Governmental Authority, such Loan Party shall deliver to the Administrative Agent the original or a certified copy of a receipt issued by such Governmental Authority evidencing such payment, a copy of the return reporting such payment or other evidence of such payment reasonably satisfactory to the Administrative Agent.

(d) Indemnification by the Loan Parties. The Loan Parties shall indemnify each Recipient for any Indemnified Taxes that are paid or payable by such Recipient in connection with this Agreement (including amounts paid or payable under this paragraph) and any reasonable expenses arising therefrom or with respect thereto, whether or not such Indemnified Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. The indemnity under this paragraph shall be paid within 10 days after the Recipient delivers to any Loan Party a certificate stating the amount of any Indemnified Taxes so paid or payable by such Recipient and describing the basis for the indemnification claim. Such certificate shall be conclusive of the amount so paid or payable absent manifest error. Such Recipient shall deliver a copy of such certificate to the Administrative Agent.

(e) Indemnification by the Lenders. Each Lender shall severally indemnify the Administrative Agent for any Taxes (but, in the case of any Indemnified Taxes, only to the extent that any Loan Party has not already indemnified the Administrative Agent for such Indemnified Taxes and without limiting the obligation of the Loan Parties to do so) attributable to such Lender that are paid or payable by the Administrative Agent in connection with any Loan Document and any reasonable expenses arising therefrom or with respect thereto, whether or not such Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. The indemnity under this paragraph shall be paid within 10 days after the Administrative Agent delivers to the applicable Lender a certificate stating the amount of Taxes so paid or payable by the Administrative Agent. Such certificate shall be conclusive of the amount so paid or payable absent manifest error.

(f) Status of Lenders. (i) Any Lender that is entitled to an exemption from, or reduction of, any applicable withholding Tax with respect to any payments under any Loan Document shall deliver to the Borrower and the Administrative Agent, at the time or times reasonably requested by the Borrower or the Administrative Agent, such properly completed and executed documentation reasonably requested by the Borrower or the Administrative Agent as will permit such payments to be made without, or at a reduced rate of, withholding. In addition, any Lender, if requested by the Borrower or the Administrative Agent, shall deliver such other documentation prescribed by Law or reasonably requested by the Borrower or the Administrative Agent as will enable the Borrower or the Administrative Agent to determine whether or not such Lender is subject to any withholding (including backup withholding) or information reporting requirements. Notwithstanding anything to the contrary in the preceding two sentences, the completion, execution and submission of such documentation (other than such documentation set forth in clauses (A) through (E) of paragraph (f)(ii) and paragraph (f)(iii) below) shall not be required if in the Lender's reasonable judgment such completion, execution or submission would subject such Lender to any material unreimbursed cost or expense (or, in the case of a Change in Law, any incremental material unreimbursed cost or expense) or would materially prejudice the legal or commercial position of such Lender. Upon the reasonable request of the Borrower or the Administrative Agent, any Lender shall update any form or certification previously delivered pursuant to this Section 2.17(f). If any form or certification previously delivered pursuant to this Section 2.17(f) expires or becomes obsolete or inaccurate in any respect with respect to a Lender, such Lender shall promptly (and in any event within 10 days after such expiration, obsolescence or inaccuracy) notify the Borrower and the Administrative Agent in writing of such expiration, obsolescence or inaccuracy and update the form or certification if it is legally eligible to do so.

(ii) Without limiting the generality of the foregoing, each Lender shall, if it is legally eligible to do so, deliver to the Borrower and the Administrative Agent (in such number of copies as is reasonably requested by the Borrower and the Administrative Agent) on or prior to the date on which such Lender becomes a party hereto, duly completed and executed copies of whichever of the following is applicable:

(A) in the case of a Lender that is a U.S. Person, IRS Form W-9 certifying that such Lender is exempt from U.S. Federal backup withholding tax;

(B) in the case of a Foreign Lender claiming the benefits of an income tax treaty to which the United States of America is a party (1) with respect to payments of

interest under this Agreement, IRS Form W-8BEN or W-8BEN-E establishing an exemption from, or reduction of, U.S. Federal withholding Tax pursuant to the "interest" article of such tax treaty and (2) with respect to any other applicable payments under this Agreement, IRS Form W-8BEN or W-8BEN-E establishing an exemption from, or reduction of, U.S. Federal withholding Tax pursuant to the "business profits" or "other income" article of such tax treaty;

(C) in the case of a Foreign Lender for whom payments under this Agreement constitute income that is effectively connected with such Lender's conduct of a trade or business in the United States of America, IRS Form W-8ECI;

(D) in the case of a Foreign Lender claiming the benefits of the exemption for portfolio interest under Section 881(c) of the Code, both (1) IRS Form W-8BEN or W-8BEN-E and (2) a certificate substantially in the form of Exhibit G-1, Exhibit G-2, Exhibit G-3 or Exhibit G-4 (each, a "U.S. Tax Certificate"), as applicable, to the effect that such Lender is not (w) a "bank" within the meaning of Section 881(c)(3)(A) of the Code, (x) a "10 percent shareholder" of the Borrower within the meaning of Section 881(c)(3)(B) of the Code, (y) a "controlled foreign corporation" described in Section 881(c)(3)(C) of the Code and (z) conducting a trade or business in the United States of America with which the relevant interest payments are effectively connected;

(E) in the case of a Foreign Lender that is not the beneficial owner of payments made under this Agreement (including a partnership or a participating Lender), (1) an IRS Form W-8IMY on behalf of itself and (2) the relevant forms prescribed in clauses (A), (B), (C), (D) and (F) of this paragraph (f)(ii) that would be required of each such beneficial owner or partner of such partnership if such beneficial owner or partner were a Lender; provided that if such Lender is a partnership and one or more of its partners are claiming the exemption for portfolio interest under Section 881(c) of the Code, such Lender may provide a U.S. Tax Certificate on behalf of such partners; or

(F) any other form prescribed by Law as a basis for claiming exemption from, or a reduction of, U.S. Federal withholding Tax, together with such supplementary documentation as shall be necessary to enable the Borrower or the Administrative Agent to determine the amount of Tax (if any) required by Law to be withheld.

(iii) If a payment made to a Lender under any Loan Document would be subject to U.S. Federal withholding Tax imposed by FATCA if such Lender were to fail to comply with the applicable reporting requirements of FATCA (including those contained in Section 1471(b) or 1472(b) of the Code, as applicable), such Lender shall deliver to the Withholding Agent, at the time or times prescribed by Law and at such time or times reasonably requested by the Withholding Agent, such documentation prescribed by applicable Law (including as prescribed by Section 1471(b)(3)(C)(i) of the Code) and such additional documentation reasonably requested by the Withholding Agent as may be necessary for the Withholding Agent to comply with its obligations under FATCA, to determine that such Lender has or has not complied with such Lender's obligations under FATCA or to determine the amount to deduct and withhold from such payment. Solely for purposes of this Section

2.17(f)(iii), the term "FATCA" shall include any amendments made to FATCA after the date of this Agreement.

(g) Treatment of Certain Refunds. If any Recipient determines, in its sole discretion exercised in good faith, that it has received a refund of any Taxes as to which it has been indemnified pursuant to this Section (including additional amounts paid pursuant to this Section), it shall pay to the indemnifying party an amount equal to such refund (but only to the extent of indemnity payments made or additional amounts paid under this Section with respect to the Taxes giving rise to such refund), net of all out-of-pocket expenses (including any Taxes) of Recipient and without interest (other than any interest paid by the relevant Governmental Authority with respect to such refund). Such indemnifying party, upon the request of such Recipient, shall repay to such Recipient the amount paid to such Recipient pursuant to the prior sentence (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) in the event such Recipient is required to repay such refund to such Governmental Authority. Notwithstanding anything to the contrary in this paragraph (g), in no event will any Recipient be required to pay any amount to any indemnifying party pursuant to this paragraph (g) the payment of which would place such Recipient in a less favorable position (on a net after-Tax basis) than such Recipient would have been in if the Tax subject to indemnification or additional amounts paid and giving rise to such refund had not been deducted, withheld or otherwise imposed and the indemnification payments or additional amounts with respect to such Tax had never been paid. This paragraph shall not be construed to require any Recipient to make available its Tax returns (or any other information relating to its Taxes that it deems confidential) to the indemnifying party or any other Person.

(h) Issuing Bank. For purposes of Sections 2.17(e) and 2.17(f), the term "Lender" shall include each Issuing Bank.

SECTION 2.18. Payments Generally; Pro Rata Treatment; Sharing of Setoffs. (a) The Borrower shall make each payment required to be made by it hereunder or under any other Loan Document prior to the time expressly required hereunder or under such other Loan Document for such payment (or, if no such time is expressly required, prior to 12:00 noon, Pittsburgh time), on the date when due, in immediately available funds, without any defense, setoff, recoupment or counterclaim. Any amounts received after such time on any date may, in the discretion of the Administrative Agent, be deemed to have been received on the next succeeding Business Day for purposes of calculating interest thereon. All such payments shall be made to such account as may be specified by the Administrative Agent, except that payments required to be made directly to any Issuing Bank or the Swingline Lender shall be so made, payments pursuant to Sections 2.15, 2.16, 2.17 and 9.03 shall be made directly to the Persons entitled thereto and payments pursuant to other Loan Documents shall be made to the Persons specified therein. The Administrative Agent shall distribute any such payment received by it for the account of any other Person to the appropriate recipient promptly following receipt thereof. If any payment under any Loan Document shall be due on a day that is not a Business Day, the date for payment shall be extended to the next succeeding Business Day and, in the case of any payment accruing interest, interest thereon shall be payable for the period of such extension. All payments under each Loan Document shall be made in Dollars other than, to the extent specified herein (including in Section 2.25), with respect to Optional Currency Swingline Loans or Letters of Credit denominated in an Optional Currency.

(b) If at any time insufficient funds are received by and available to the Administrative Agent to pay fully all amounts of principal, unreimbursed LC Disbursements, interest and fees then due hereunder, such funds shall be applied towards payment of the amounts then due hereunder ratably among the parties entitled thereto, in accordance with the amounts then due to such parties.

(c) If any Lender shall, by exercising any right of setoff or counterclaim or otherwise, obtain payment in respect of any principal of or interest on any of its Loans or participations in LC Disbursements or Swingline Loans resulting in such Lender receiving payment of a greater proportion of the aggregate amount of its Loans and participations in LC Disbursements and Swingline Loans and accrued interest thereon than the proportion received by any other Lender, then the Lender receiving such greater proportion shall purchase (for cash at face value) participations in the Loans and participations in LC Disbursements and Swingline Loans of other Lenders to the extent necessary so that the amount of all such payments shall be shared by the Lenders ratably in accordance with the aggregate amounts of principal of and accrued interest on their Loans and participations in LC Disbursements and Swingline Loans; provided that (i) if any such participations are purchased and all or any portion of the payment giving rise thereto is recovered, such participations shall be rescinded and the purchase price restored to the extent of such recovery, without interest, and (ii) the provisions of this paragraph shall not be construed to apply to any payment made by the Borrower pursuant to and in accordance with the express terms of this Agreement (for the avoidance of doubt, as in effect from time to time) or any payment obtained by a Lender as consideration for the assignment of or sale of a participation in any of its Loans or participations in LC Disbursements or Swingline Loans to any Person that is an Eligible Assignee (as such term is defined from time to time). The Borrower consents to the foregoing and agrees, to the extent it may effectively do so under applicable Law, that any Lender acquiring a participation pursuant to the foregoing arrangements may exercise against the Borrower rights of setoff and counterclaim with respect to such participation as fully as if such Lender were a direct creditor of the Borrower in the amount of such participation.

(d) Unless the Administrative Agent shall have received notice from the Borrower prior to the date on which any payment is due to the Administrative Agent for the account of the Lenders or Issuing Banks hereunder that the Borrower will not make such payment, the Administrative Agent may assume that the Borrower has made such payment on such date in accordance herewith and may, in reliance upon such assumption, distribute to the Lenders or Issuing Banks, as the case may be, the amount due. In such event, if the Borrower has not in fact made such payment, then each of the Lenders or Issuing Banks, as the case may be, severally agrees to repay to the Administrative Agent forthwith on demand the amount so distributed to such Lender or Issuing Bank with interest thereon, for each day from and including the date such amount is distributed to it to but excluding the date of payment to the Administrative Agent, at the greater of the Federal Funds Effective Rate and a rate determined by the Administrative Agent in accordance with banking industry rules on interbank compensation.

(e) If any Lender shall fail to make any payment required to be made by it hereunder to or for the account of the Administrative Agent, any Issuing Bank or the Swingline Lender, then the Administrative Agent may, in its discretion (notwithstanding any contrary

provision hereof), (i) apply any amounts thereafter received by the Administrative Agent for the account of such Lender to satisfy such Lender's obligations in respect of such payment until all such unsatisfied obligations have been discharged or (ii) hold any such amounts in a segregated account as cash collateral for, and application to, any future funding obligations of such Lender pursuant to Sections 2.04(d), 2.05(d), 2.05(f), 2.06(b), 2.18(d) and 9.03(c), in each case in such order as shall be determined by the Administrative Agent in its discretion.

(f) In the event that any financial statements delivered under Section 5.01(a) or 5.01(b), or any Compliance Certificate delivered under Section 5.01(d), shall prove to have been materially inaccurate, and such inaccuracy shall have resulted in the payment of any interest or fees at rates lower than those that were in fact applicable for any period (based on the actual Net Leverage Ratio), then, if such inaccuracy is discovered prior to the termination of the Commitments and the repayment in full of the principal of all Loans and the reduction of the LC Exposure to zero, the Borrower shall pay to the Administrative Agent, for distribution to the Lenders (or former Lenders) as their interests may appear, the accrued interest or fees that should have been paid but were not paid as a result of such misstatement.

SECTION 2.19. Mitigation Obligations; Replacement of Lenders. (a) If any Lender requests compensation under Section 2.15, or if the Borrower is required to pay any additional amount to any Lender or to any Governmental Authority for the account of any Lender pursuant to Section 2.17, then such Lender shall use commercially reasonable efforts to designate a different lending office for funding or booking its Loans hereunder or to assign and delegate its rights and obligations hereunder to another of its offices, branches or Affiliates if, in the judgment of such Lender, such designation or assignment and delegation (i) would eliminate or reduce amounts payable pursuant to Section 2.15 or 2.17, as the case may be, in the future and (ii) would not subject such Lender to any unreimbursed cost or expense and would not otherwise be disadvantageous to such Lender. The Borrower hereby agrees to pay all reasonable costs and expenses incurred by any Lender in connection with any such designation or assignment and delegation.

(b) If (i) any Lender requests compensation under Section 2.15, (ii) the Borrower is required to pay any additional amount to any Lender or any Governmental Authority for the account of any Lender pursuant to Section 2.17, (iii) any Lender has become a Defaulting Lender or (iv) any Lender has failed to consent to a proposed amendment, waiver, discharge or termination that under Section 9.02 requires the consent of all the Lenders (or all the affected Lenders or all the Lenders of the affected Class) and with respect to which the Required Lenders (or, in circumstances where Section 9.02 does not require the consent of the Required Lenders, a Majority in Interest of the Lenders of the affected Class) shall have granted their consent, then the Borrower may, at its sole expense and effort, upon notice to such Lender and the Administrative Agent, require such Lender to assign and delegate, without recourse (in accordance with and subject to the restrictions contained in Section 9.04), all its interests, rights and obligations under this Agreement and the other Loan Documents (or, in the case of any such assignment and delegation resulting from a failure to provide a consent, all its interests, rights and obligations under this Agreement and the other Loan Documents as a Lender of a particular Class) to an Eligible Assignee that shall assume such obligations (which may be another Lender, if a Lender accepts such assignment and delegation); provided that (A) the Borrower shall have received the prior written consent of the Administrative Agent, each Issuing Bank and the

Swingline Lender, which consents shall not unreasonably be withheld, (B) such Lender shall have received payment of an amount equal to the outstanding principal of its Loans and, if applicable, participations in LC Disbursements and Swingline Loans, accrued interest thereon, accrued fees and all other amounts payable to it hereunder (if applicable, in each case only to the extent such amounts relate to its interest as a Lender of a particular Class) from the assignee (in the case of such principal and accrued interest and fees) or the Borrower (in the case of all other amounts), (C) in the case of any such assignment and delegation resulting from a claim for compensation under Section 2.15 or payments required to be made pursuant to Section 2.17, such assignment will result in a reduction in such compensation or payments and (D) in the case of any such assignment and delegation resulting from the failure to provide a consent, the assignee shall have given such consent and, as a result of such assignment and delegation and any contemporaneous assignments and delegations and consents, the applicable amendment, waiver, discharge or termination can be effected. A Lender shall not be required to make any such assignment and delegation if, prior thereto, as a result of a waiver or consent by such Lender or otherwise, the circumstances entitling the Borrower to require such assignment and delegation have ceased to apply. Each party hereto agrees that an assignment and delegation required pursuant to this paragraph may be effected pursuant to an Assignment and Assumption executed by the Borrower, the Administrative Agent and the assignee and that the Lender required to make such assignment and delegation need not be a party thereto.

SECTION 2.20. Defaulting Lenders. Notwithstanding any provision of this Agreement to the contrary, if any Lender becomes a Defaulting Lender, then the following provisions shall apply for so long as such Lender is a Defaulting Lender:

(a) commitment fees shall cease to accrue on the unused amount of the Revolving Commitment of such Defaulting Lender pursuant to Section 2.12(b);

(b) the Revolving Commitment and Revolving Exposure of such Defaulting Lender shall not be included in determining whether the Required Lenders or any other requisite Lenders have taken or may take any action hereunder or under any other Loan Document (including any consent to any amendment, waiver or other modification pursuant to Section 9.02); provided that any amendment, waiver or other modification (i) requiring the consent of all Lenders or all Lenders directly affected thereby shall, except as otherwise provided in Section 9.02, require the consent of such Defaulting Lender in accordance with the terms hereof or (ii) that by its terms affects any Defaulting Lender disproportionately adversely relative to the other affected Lenders shall require the consent of such Defaulting Lender;

(c) if any Swingline Exposure or LC Exposure exists at the time such Lender becomes a Defaulting Lender then:

(i) all or any part of the Swingline Exposure and LC Exposure of such Defaulting Lender shall be reallocated among the Non-Defaulting Lenders in accordance with their respective Applicable Percentages (calculated without regard to such Defaulting Lender's Revolving Commitment) but only to the extent that such reallocation does not cause the Revolving Exposure of any Non-Defaulting Lender to exceed such Non-Defaulting Lender's Revolving

Commitment. Subject to Section 9.17, no reallocation hereunder shall constitute a waiver or release of any claim of any party hereunder against a Defaulting Lender arising from that Lender having become a Defaulting Lender, including any claim of a Non-Defaulting Lender as a result of such Non-Defaulting Lender's increased exposure following such reallocation;

(ii) if the reallocation described in clause (i) above cannot, or can only partially, be effected, the Borrower shall within one Business Day following notice by the Administrative Agent (A) first, prepay the portion of such Defaulting Lender's Swingline Exposure that has not been reallocated and (B) second, cash collateralize for the benefit of the Issuing Banks the portion of such Defaulting Lender's LC Exposure that has not been reallocated in accordance with the procedures set forth in Section 2.05(i) for so long as such LC Exposure is outstanding;

(iii) if the Borrower cash collateralizes any portion of such Defaulting Lender's LC Exposure pursuant to clause (ii) above, the Borrower shall not be required to pay participation fees to such Defaulting Lender pursuant to Section 2.12(c) with respect to such portion of such Defaulting Lender's LC Exposure for so long as such Defaulting Lender's LC Exposure is cash collateralized;

(iv) if any portion of the LC Exposure of such Defaulting Lender is reallocated pursuant to clause (i) above, then the fees payable to the Lenders pursuant to Sections 2.12(b) and 2.12(c) shall be adjusted to give effect to such reallocation; and

(v) if all or any portion of such Defaulting Lender's LC Exposure is neither reallocated nor cash collateralized pursuant to clause (i) or (ii) above, then, without prejudice to any rights or remedies of any Issuing Bank or any other Lender hereunder, all commitment fees that otherwise would have been payable to such Defaulting Lender (solely with respect to the portion of such Defaulting Lender's Commitment utilized by such LC Exposure) and participation fees payable under Section 2.12(c) with respect to such Defaulting Lender's LC Exposure shall be payable to the Issuing Banks (and allocated among them ratably based on the amount of such Defaulting Lender's LC Exposure attributable to Letters of Credit issued by each Issuing Bank) until and to the extent that such LC Exposure is reallocated and/or cash collateralized; and

(d) so long as such Lender is a Defaulting Lender, the Swingline Lender shall not be required to fund any Swingline Loan and no Issuing Bank shall be required to issue, amend, renew or extend any Letter of Credit, unless in each case it is satisfied that the related exposure and the Defaulting Lender's then outstanding Swingline Exposure or LC Exposure, as applicable, will be fully covered by the Revolving Commitments of the Non-Defaulting Lenders and/or cash collateral provided by the Borrower in accordance with Section 2.20(c), and participating interests in any such funded Swingline Loan or in any such issued, amended, reviewed or extended Letter of Credit will be allocated among

the Non-Defaulting Lenders in a manner consistent with Section 2.20(c)(i) (and such Defaulting Lender shall not participate therein).

In the event that (x) a Bankruptcy Event with respect to a Lender Parent shall have occurred following the date hereof and for so long as such Bankruptcy Event shall continue or (y) the Swingline Lender or any Issuing Bank has a good faith belief that any Lender has defaulted in fulfilling its obligations under one or more other agreements in which such Lender commits to extend credit, the Swingline Lender shall not be required to fund any Swingline Loan, and no Issuing Bank shall be required to issue, amend, renew or extend any Letter of Credit, unless the Swingline Lender or such Issuing Bank, as the case may be, shall have entered into arrangements with the Borrower or such Lender satisfactory to the Swingline Lender or such Issuing Bank, as the case may be, to defease any risk to it in respect of such Lender hereunder.

In the event that the Administrative Agent, the Borrower, the Swingline Lender and each Issuing Bank each agree that a Defaulting Lender has adequately remedied all matters that caused such Lender to be a Defaulting Lender, then the Swingline Exposure and LC Exposure of the Lenders shall be readjusted to reflect the inclusion of such Lender's Revolving Commitment and on such date such Lender shall purchase at par such of the Revolving Loans of the other Lenders (other than Swingline Loans) as the Administrative Agent shall determine may be necessary in order for such Lender to hold such Loans in accordance with its Applicable Percentage.

SECTION 2.21. Incremental Revolving Commitments. (a) The Borrower may on one or more occasions, by written notice to the Administrative Agent, request during the Revolving Availability Period, the establishment of Incremental Revolving Commitments, provided that (i) the aggregate amount of all the Incremental Revolving Commitments shall not exceed $100,000,000 and (ii) each Incremental Revolving Commitment shall be in integral multiples of $5,000,000. Each such notice shall specify (A) the date on which the Borrower proposes that the Incremental Revolving Commitments shall be effective, which shall be a date not less than 10 Business Days (or such shorter period as may be agreed to by the Administrative Agent) after the date on which such notice is delivered to the Administrative Agent and (B) the amount of the Incremental Revolving Commitments being requested (it being agreed that (x) any Lender approached to provide any Incremental Revolving Commitment may elect or decline, in its sole discretion, to provide such Incremental Revolving Commitment and (y) any Person that the Borrower proposes to become an Incremental Revolving Lender, if such Person is not then a Lender, must be an Eligible Assignee and must be reasonably acceptable to the Administrative Agent and each Issuing Bank and the Swingline Lender).

(b) The terms and conditions of any Incremental Revolving Commitment and Loans and other extensions of credit to be made thereunder shall be identical to those of the Revolving Commitments and Loans and other extensions of credit made thereunder, and shall be treated as a single Class with such Revolving Commitments and Loans.

(c) The Incremental Revolving Commitments shall be effected pursuant to one or more Incremental Facility Agreements executed and delivered by the Borrower, each Incremental Revolving Lender providing such Incremental Revolving Commitments and the Administrative Agent; provided that no Incremental Revolving Commitments shall become

effective unless (i) no Default or Event of Default shall have occurred and be continuing on the date of effectiveness thereof, both immediately prior to and immediately after giving effect to such Incremental Revolving Commitments and the making of Loans and issuance of Letters of Credit thereunder to be made on such date, (ii) on the date of effectiveness thereof, the representations and warranties of each Loan Party set forth in the Loan Documents shall be true and correct (A) in the case of the representations and warranties qualified as to materiality, in all respects and (B) otherwise, in all material respects, in each case on and as of such date, except in the case of any such representation and warranty that expressly relates to a prior date, in which case such representation and warranty shall be so true and correct on and as of such prior date, (iii) after giving effect to such Incremental Revolving Commitments and the making of Loans and other extensions of credit thereunder to be made on the date of effectiveness thereof and assuming that all Incremental Revolving Commitments are fully drawn, (A) the Net Leverage Ratio, calculated at the end of the last fiscal quarter of the Borrower for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) or (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)), both on an actual basis and on a pro forma basis in accordance with Section 1.04(b), shall not exceed the Maximum Permitted Net Leverage Ratio then in effect minus 0.25 to 1.00 and (B) the Borrower shall be in compliance with the financial covenants set forth in Sections 6.12 and 6.13 at the end of the last fiscal quarter of the Borrower for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) or (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)), calculated on both an actual basis and on a pro forma basis in accordance with Section 1.04(b), (iv) the Borrower shall make any payments required to be made pursuant to Section 2.16 in connection with such Incremental Revolving Commitments and the related transactions under this Section and (v) the Borrower shall have delivered to the Administrative Agent such legal opinions, board resolutions, secretary's certificates, officer's certificates and other documents as shall reasonably be requested by the Administrative Agent in connection with any such transaction. Each Incremental Facility Agreement may, without the consent of any Lender, effect such amendments to this Agreement and the other Loan Documents as may be necessary or appropriate, in the opinion of the Administrative Agent, to give effect to the provisions of this Section.

(d) Upon the effectiveness of an Incremental Revolving Commitment of any Incremental Revolving Lender, (i) such Incremental Revolving Lender shall be deemed to be a "Lender" hereunder, and henceforth shall be entitled to all the rights of, and benefits accruing to, Lenders hereunder and shall be bound by all agreements, acknowledgements and other obligations of Lenders hereunder and under the other Loan Documents, (ii) such Incremental Revolving Commitment shall constitute (or, in the event such Incremental Revolving Lender already has a Revolving Commitment, shall increase) the Revolving Commitment of such Incremental Revolving Lender and (iii) the aggregate amount of the Revolving Commitments shall be increased by the amount of such Incremental Revolving Commitment, in each case, subject to further increase or reduction from time to time as set forth in the definition of the term "Revolving Commitment". For the avoidance of doubt, upon the effectiveness of any Incremental Revolving Commitment, the Revolving Exposure of the Incremental Revolving Lender holding such Commitment, and the Applicable Percentage of all the Lenders, shall automatically be adjusted to give effect thereto.

(e) On the date of effectiveness of any Incremental Revolving Commitments, each Lender shall assign to each Incremental Revolving Lender holding such Incremental Revolving Commitment, and each such Incremental Revolving Lender shall purchase from each Lender, at the principal amount thereof (together with accrued interest), such interests in the Revolving Loans and participations in Letters of Credit outstanding on such date as shall be necessary in order that, after giving effect to all such assignments and purchases, such Revolving Loans and participations in Letters of Credit will be held by all the Lenders (including such Incremental Lenders) ratably in accordance with their Applicable Percentages after giving effect to the effectiveness of such Incremental Revolving Commitment.

(f) [Intentionally Omitted]

(g) The Administrative Agent shall notify the Lenders promptly upon receipt by the Administrative Agent of any notice from the Borrower referred to in Section 2.21(a) and of the effectiveness of any Incremental Revolving Commitments, in each case advising the Lenders of the details thereof and of the Applicable Percentages of the Lenders after giving effect thereto and of the assignments required to be made pursuant to Section 2.21(e).

SECTION 2.22. Loan Modification Offers. (a) The Borrower may on one or more occasions, by written notice to the Administrative Agent, make one or more offers (each, a "Loan Modification Offer") to all the Lenders of one or more Classes (each Class subject to such a Loan Modification Offer, an "Affected Class") to make one or more Permitted Amendments pursuant to procedures reasonably specified by the Administrative Agent and reasonably acceptable to the Borrower. Such notice shall set forth (i) the terms and conditions of the requested Permitted Amendment and (ii) the date on which such Permitted Amendment is requested to become effective (which shall not be less than 10 Business Days nor more than 30 Business Days after the date of such notice, unless otherwise agreed to by the Administrative Agent). Permitted Amendments shall become effective only with respect to the Loans and Commitments of the Lenders of the Affected Class that accept the applicable Loan Modification Offer (such Lenders, the "Accepting Lenders") and, in the case of any Accepting Lender, only with respect to such Lender's Loans and Commitments of such Affected Class as to which such Lender's acceptance has been made.

(b) A Permitted Amendment shall be effected pursuant to a Loan Modification Agreement executed and delivered by the Borrower, each applicable Accepting Lender and the Administrative Agent; provided that no Permitted Amendment shall become effective unless the Borrower shall have delivered to the Administrative Agent such legal opinions, board resolutions, secretary's certificates, officer's certificates and other documents as shall reasonably be requested by the Administrative Agent in connection therewith. The Administrative Agent shall promptly notify each Lender as to the effectiveness of each Loan Modification Agreement. Each Loan Modification Agreement may, without the consent of any Lender other than the applicable Accepting Lenders, effect such amendments to this Agreement and the other Loan Documents as may be necessary or appropriate, in the opinion of the Administrative Agent, to give effect to the provisions of this Section, including any amendments necessary to treat the applicable Loans and/or Commitments of the Accepting Lenders as a new "Class" of loans and/or commitments hereunder; provided that, in the case of any Loan Modification Offer, except as otherwise agreed to by each Issuing Bank and the Swingline

Lender, (i) the allocation of the participation exposure with respect to any then-existing or subsequently issued or made Letter of Credit or Swingline Loan as between the commitments of such new "Class" and the remaining Revolving Commitments shall be made on a ratable basis as between the commitments of such new "Class" and the remaining Revolving Commitments and (ii) the Revolving Availability Period and the Revolving Maturity Date, as such terms are used in reference to Letters of Credit or Swingline Loans, may not be extended without the prior written consent of each Issuing Bank and the Swingline Lender, as applicable.

SECTION 2.23. Additional Reserve Requirements for Optional Currency Swingline Loans; Computation Dates; Misc. (a) The Borrower shall pay to the Swingline Lender (i) as long as the Swingline Lender shall be required to maintain reserves with respect to liabilities or assets consisting of or including eurocurrency funds or deposits, additional interest on the unpaid principal amount of each Optional Currency Swingline Loan equal to the actual costs of such reserves allocated to such Loan by the Swingline Lender (as determined by the Swingline Lender in good faith, which determination shall be conclusive absent manifest error), and (ii) as long as the Swingline Lender shall be required to comply with any reserve ratio requirement under Regulation D or under any similar, successor or analogous requirement of the Board of Governors of the Federal Reserve System (or any successor) or any other central banking or financial regulatory authority imposed in respect of the maintenance of the Swingline Loan Commitment or the funding of the Optional Currency Swingline Loans, such additional costs (expressed as a percentage per annum and rounded upwards, if necessary, to the nearest five decimal places) equal to the actual costs allocated to such Commitment or Optional Currency Swingline Loan by the Swingline Lender (as determined by the Swingline Lender in good faith, which determination shall be conclusive absent manifest error), which in each case shall be due and payable on each date on which interest is payable on such Optional Currency Swingline Loan; provided that in each case the Borrower shall have received at least ten days' prior notice (with a copy to the Administrative Agent) of such additional interest or costs from the Swingline Lender. If the Swingline Lender fails to give notice ten (10) days prior to the relevant interest payment date, such additional interest or costs shall be due and payable ten (10) days from receipt of such notice. At the written request of the Borrower, the Swingline Lender shall use commercially reasonable efforts to assign and delegate its rights and obligations with respect to Optional Currency Swingline Loans to another of its offices, branches or Affiliates if, in the judgment of the Swingline Lender, such designation or assignment and delegation (i) would eliminate or reduce amounts payable pursuant to this Section 2.23(a) in the future and (ii) would not subject the Swingline Lender to any unreimbursed cost or expense and would not otherwise be disadvantageous to the Swingline Lender; provided that this sentence shall not apply to any such additional amounts arising as a result of the application of any reserve requirement or reserve ratio requirement. The Borrower hereby agrees to pay all reasonable costs and expenses incurred by the Swingline Lender in connection with any such designation or assignment and delegation.

(b) The Administrative Agent will determine the Dollar Equivalent amount of (i) the outstanding and proposed Optional Currency Swingline Loans and Letters of Credit to be denominated in an Optional Currency as of the requested Borrowing Date or date of issuance, as the case may be, (ii) the outstanding LC Exposure in respect of Letters of Credit denominated in an Optional Currency as of the last Business Day of each month, and (iii) the outstanding Optional Currency Swingline Loans as of the end of each Interest Period (each such date under

clauses (i) through (iii), and any other date on which the Administrative Agent determines it is necessary or advisable to make such computation, in its sole discretion, is referred to as a "Computation Date").

(c) If (i) any Optional Currency ceases to be lawful currency of the nation issuing the same and is replaced by the Euro or (ii) any Optional Currency and the Euro are at the same time recognized by any Governmental Authority of the nation issuing such currency as lawful currency of such nation and the Administrative Agent or the Swingline Lender shall so request in a notice delivered to the Borrower, then any amount payable hereunder by any party hereto in such Optional Currency shall instead be payable in the Euro and the amount so payable shall be determined by translating the amount payable in such Optional Currency to the Euro at the exchange rate established by that nation for the purpose of implementing the replacement of the relevant Optional Currency by the Euro (and the provisions governing payments in Optional Currencies in this Agreement shall apply to such payment in the Euro as if such payment in the Euro were a payment in an Optional Currency). Prior to the occurrence of the event or events described in clause (i) or (ii) of the preceding sentence, each amount payable by the Borrower hereunder in any Optional Currency will, except as otherwise provided herein, continue to be payable only in that currency.

(d) The Borrower agrees, at the request of any Lender (including, for the avoidance of doubt, the Swingline Lender), to compensate such Lender for any loss, cost, expense or reduction in return that such Lender shall reasonably determine shall be incurred or sustained by such Lender as a result of the replacement of any Optional Currency by the Euro and that would not have been incurred or sustained but for the transactions provided for herein. A certificate of any Lender setting forth such Lender's determination of the amount or amounts necessary to compensate such Lender shall be delivered to the Borrower and shall be conclusive absent manifest error so long as such determination is made on a reasonable basis. The Borrower shall pay such Lender the amount shown as due on any such certificate within ten (10) days after receipt thereof.

(e) The Borrower may deliver to the Administrative Agent a written request that Optional Currency Swingline Loans hereunder also be permitted to be made in any other lawful currency (other than Dollars), in addition to the currencies specified in the definition of "Optional Currency" herein, provided that such currency must be freely traded in the offshore interbank foreign exchange markets, freely transferable, freely convertible into Dollars and available to the Swingline Lender and each of the Issuing Banks in the Relevant Interbank Market. The Administrative Agent will promptly notify the Swingline Lender and the Issuing Banks of any such request promptly after the Administrative Agent receives such request. The Administrative Agent will promptly notify the Borrower of the acceptance or rejection by the Administrative Agent, the Swingline Lender and each of the Issuing Banks of the Borrower's request. The requested currency shall be approved as an Optional Currency hereunder only if the Administrative Agent, the Swingline Lender and each of the Issuing Banks approve of the Borrower's request.

SECTION 2.24. Optional Currency Not Available. The Swingline Lender shall be under no obligation to make the Optional Currency Swingline Loans and no Issuing Bank shall be under any obligation to issue Letters of Credit requested by the Borrower which are

denominated in an Optional Currency if the Swingline Lender or such Issuing Bank, as the case may be, notifies the Administrative Agent by 5:00 p.m. (Pittsburgh time) three (3) Business Days prior to the Borrowing Date for such Optional Currency Swingline Loans or date of issuance that (i) the making, maintenance or funding of such Optional Currency Swingline Loan, the issuance of such Letter of Credit, or the funding of any draw thereunder has been made or, in the case of a draw, would be made, impracticable or unlawful by compliance by the Swingline Lender or such Issuing Bank in good-faith with any Law or any interpretation or application thereof by any Governmental Authority or with any request or directive of any such Governmental Authority (whether or not having the force of Law), (ii) after making all reasonable efforts, deposits of the relevant amount in the relevant Optional Currency (including, if applicable, for the relevant Interest Period) are not available to the Swingline Lender or such Issuing Bank with respect to such Optional Currency Swingline Loan or Letter of Credit in such Optional Currency in the Relevant Interbank Market or (iii) the Administrative Agent shall have determined, or the Swingline Lender or any Issuing Bank shall have notified the Administrative Agent in writing that it has determined, that a fundamental change has occurred in the foreign exchange or interbank markets with respect to any Optional Currency (including, without limitation, changes in national or international financial, political or economic conditions or currency exchange rates or exchange controls). In the event that the Administrative Agent receives a timely notice from the Swingline Lender or an Issuing Bank pursuant to the preceding sentence, the Administrative Agent will notify the Borrower, (1) no later than 12:00 noon (Pittsburgh time) two (2) Business Days prior to the Borrowing Date for such Optional Currency Swingline Loans that the Optional Currency is not then available for such Optional Currency Swingline Loans, or (2) prior to the issuance of an Optional Currency Letter of Credit, that Letters of Credit are not then available in such Optional Currency. If the Borrower receives a notice described in the preceding sentence, the Borrower may, by notice from the Borrower to the Administrative Agent not later than 5:00 p.m. (Pittsburgh time) two (2) Business Days prior to the Borrowing Date for such Optional Currency Swingline Loans, or prior to the issuance date of such Letter of Credit, as the case may be, either (a) withdraw the Swingline Loan Borrowing Request for such Optional Currency Loan or request for such Letter of Credit in such Optional Currency, as the case may be, in which event the Administrative Agent will promptly notify the Swingline Lender and applicable Issuing Bank of the same and the Swingline Lender shall not make such Optional Currency Swingline Loans, and such Issuing Bank shall not issue such Letter of Credit or (b) request that the Swingline Loans referred to in its Swingline Loan Borrowing Request or Letter of Credit, as the case may be, be made in Dollars or in a different Optional Currency in an amount equal to the Dollar Equivalent or other Optional Currency Equivalent Amount of such Swingline Loans or Letter of Credit and shall (A) in the case of Swingline Loans denominated in Dollars, bear interest at the rate determined pursuant to Section 2.13(c), or (B) in the case of Swingline Loans denominated in an Optional Currency, bear interest at the applicable LIBO Rate plus the Applicable Percentage, in which event the Administrative Agent shall promptly deliver a notice to the Swingline Lender and/or the Issuing Bank, as the case may be, stating: in the case of (X) Swingline Loans, (I) that such Swingline Loans shall be made in the applicable currency and the interest rate applicable thereto, and (II) the aggregate amount of such Swingline Loans and, (Y) Letters of Credit (I) such Letters of Credit shall be issued in the applicable currency and (II) the stated face amount of such Letters of Credit. If the Borrower does not withdraw such Swingline Loan Borrowing Request or request for Letter of Credit before such time as provided in clause (a) or request before such time that the requested Swingline Loans referred to in its Swingline

Loan Borrowing Request or Letter of Credit be made in Dollars or a different Optional Currency as provided in clause (b), then (i) the Borrower shall be deemed to have withdrawn such Swingline Loan Borrowing Request or request for Letter of Credit, as the case may be, and (ii) the Administrative Agent shall promptly deliver a notice to the Swingline Lender and/or the applicable Issuing Bank thereof and the Swingline Lender shall not be obligated to make such Swingline Loans and such Issuing Bank shall not be obligated to issue such Letter of Credit.

SECTION 2.25. Currency Repayments.

Notwithstanding anything contained herein to the contrary, except as expressly provided in Section 2.04(c) in connection with the repayment of an Optional Currency Swingline Loan with the proceeds of ABR Loans, or as otherwise agreed to by the Swingline Lender, the entire amount of principal of and interest on any Optional Currency Swingline Loan shall be repaid by the Borrower in the same Optional Currency in which such Optional Currency Swingline Loan was made, provided, however, that if it is impossible or illegal for the Borrower to effect payment of a Swingline Loan in the Optional Currency in which such Loan was made, or if the Borrower defaults in its obligations to do so, the Swingline Lender, may at its option permit such payment to be made (a) at and to a different location, subsidiary, affiliate or correspondent of the Administrative Agent, or (b) in the Dollar Equivalent, or (c) in an Equivalent Amount of such other currency (freely convertible into Dollars) as the Swingline Lender may solely at its option designate. Upon any events described in (a) through (c) of the preceding sentence, the Borrower shall make such payment. In all events, whether described in such clauses (a) through (c), whether the Borrower makes such required payments, or otherwise, (i) the Borrower agrees to hold the Swingline Lender, each Issuing Bank and each Lender harmless from and against any loss incurred by any of them arising from the cost to such indemnified party of any premium, any costs of exchange, the cost of hedging and covering the Optional Currency in which such Optional Currency Swingline Loan was originally made, and from any change in the value of Dollars, or such other currency, in relation to the Optional Currency that was due and owing, and (ii) each Lender agrees to hold the Swingline Lender and each Issuing Bank harmless from and against any loss incurred by the Swingline Lender or such Issuing Bank arising from the cost to the Swingline Lender or such Issuing Bank of any premium, any costs of exchange, the cost of hedging and covering the Optional Currency in which such Optional Currency Swingline Loan or Letter of Credit, as the case may be, was originally made, and from any change in the value of Dollars or such other currency in relation to the Optional Currency that was due and owing. Such loss shall be calculated for the period commencing with the first day of the Interest Period for such Loan and continuing through the date of payment thereof. Without prejudice to the survival of any other agreement of the Borrower or Lenders hereunder, the Borrower's and Lenders' respective obligations under this Section 2.25 shall survive termination of this Agreement.

SECTION 2.26. Optional Currency Amounts.

Notwithstanding anything contained herein to the contrary, the Swingline Lender may, with respect to notices by the Borrower for Optional Currency Swingline Loans or voluntary prepayments of less than the full amount of an Optional Currency Swingline Loan, engage in reasonable rounding of the Optional Currency amounts requested to be loaned or repaid; and, in such event, the Swingline Lender shall promptly notify the Borrower and the Administrative

Agent of such rounded amounts and the Borrower's request or notice shall thereby be deemed to reflect such rounded amounts.

SECTION 2.27. Additional Mandatory Prepayments and Commitment Reductions. If on any Computation Date (a) the Aggregate Revolving Exposure is greater than the Aggregate Revolving Commitment, (b) the Swingline Exposure shall exceed the Swingline Loan Commitment, or (c) the LC Exposure shall exceed the Letter of Credit Sublimit, as a result of a change in exchange rates between one (1) or more Optional Currencies and Dollars, then the Administrative Agent shall notify the Borrower of the same. The Borrower shall pay or prepay the Revolving Loans and/or Swingline Loans (subject to the Borrower's indemnity obligations under Sections 2.16, 2.23 and 2.25) within one (1) Business Day after the Borrower receives such notice such that after giving effect to such payments or prepayments (I) the Aggregate Revolving Exposure shall not exceed the Aggregate Revolving Commitment and (II) the Swingline Exposure shall not exceed the Swingline Loan Commitment. With respect to the circumstance identified in clause (c) of the first sentence of this paragraph, the Borrower shall cash collateralize the LC Exposure to the extent of the amount by which the LC Exposure exceeds the Letter of Credit Sublimit in accordance with Section 2.05(i). All prepayments required pursuant to this Section 2.27 shall first be applied among the Interest Rate Options to the principal amount of the Revolving Loans subject to the Base Rate Option, then to Revolving Loans subject to a LIBO Rate Option and then to Optional Currency Swingline Loans. In accordance with Section 2.16, the Borrower shall indemnify the Lenders for any loss or expense incurred with respect to any such prepayments applied against Loans subject to a LIBO Rate Option on any day other than the last day of the applicable Interest Period.

SECTION 2.28. Interbank Market Presumption.

For all purposes of this Agreement and each Note with respect to any aspects of the LIBO Rate or any Loan under the LIBO Rate Option (including any Optional Currency Swingline Loan), each Lender (including, for the avoidance of doubt, the Swingline Lender) and the Administrative Agent shall be presumed to have obtained rates, funding, currencies, deposits, and the like in the Relevant Interbank Market regardless whether it did so or not; and, each Lender's (including the Swingline Lender's) and the Administrative Agent's determination of amounts payable under, and actions required or authorized by, Sections 2.14, 2.16 and 2.23 shall be calculated, at each Lender's and the Administrative Agent's option, as though each Lender and the Administrative Agent funded its each Borrowing Tranche of Loans under the LIBO Rate Option through the purchase of deposits of the types and maturities corresponding to the deposits used as a reference in accordance with the terms hereof in determining the LIBO Rate (and any additional reserves pursuant to Section 2.23(a)) applicable to such Loans, whether in fact that is the case.

SECTION 2.29. Judgment Currency.

(a) If for the purposes of obtaining judgment in any court it is necessary to convert a sum due hereunder or under a Note in any currency (the "Original Currency") into another currency (the "Other Currency"), the parties hereby agree, to the fullest extent permitted by Law, that the rate of exchange used shall be that at which in accordance with normal banking procedures each Lender could purchase the Original Currency with the Other Currency after any

premium and costs of exchange on the Business Day preceding that on which final judgment is given.

(b) The obligation of the Borrower in respect of any sum due from the Borrower to any Lender (including, for the avoidance of doubt, the Swingline Lender) hereunder shall, notwithstanding any judgment in an Other Currency, whether pursuant to a judgment or otherwise, be discharged only to the extent that, on the Business Day following receipt by any Lender of any sum adjudged to be so due in such Other Currency, such Lender may in accordance with normal banking procedures purchase the Original Currency with such Other Currency. If the amount of the Original Currency so purchased is less than the sum originally due to such Lender in the Original Currency, the Borrower agrees, as a separate obligation and notwithstanding any such judgment or payment, to indemnify such Lender against such loss to the extent of such deficit.

ARTICLE III

Representations and Warranties

The Borrower represents and warrants to the Lenders that:

SECTION 3.01. Organization; Powers. The Borrower and each Subsidiary is duly organized, validly existing and (to the extent the concept is applicable in such jurisdiction) in good standing under the laws of the jurisdiction of its organization, has all power and authority and all material Governmental Approvals required for the ownership and operation of its properties and the conduct of its business as now conducted and as proposed to be conducted and, except where the failure to do so, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect, is qualified to do business, and is in good standing, in every jurisdiction where such qualification is required.

SECTION 3.02. Authorization; Enforceability. The Transactions to be entered into by each Loan Party are within such Loan Party's corporate or other organizational powers and have been duly authorized by all necessary corporate or other organizational and, if required, stockholder or other equityholder action of each Loan Party. Each of this Agreement, the Collateral Agreement and any IP Security Agreement executed on or before the Restatement Effective Date has been duly executed and delivered by the Borrower and each other Loan Party that is party thereto and constitutes, and each other Loan Document to which any Loan Party is to be a party, when executed and delivered by such Loan Party, will constitute, a legal, valid and binding obligation of the Borrower or such Loan Party, as the case may be, enforceable against it in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or other Laws affecting creditors' rights generally and to general principles of equity, regardless of whether considered in a proceeding in equity or at law.

SECTION 3.03. Governmental Approvals; Absence of Conflicts. The Transactions (a) do not require any consent or approval of, registration or filing with or any other action by any Governmental Authority, except (i) such as have been obtained or made and are in full force and effect and (ii) filings necessary to perfect Liens created under the Loan Documents, (b) will not violate any applicable Law, including any order of any Governmental

Authority, (c) will not violate the charter, by-laws or other organizational documents of the Borrower or any Subsidiary, (d) will not violate or result (alone or with notice or lapse of time, or both) in a default under any Material Contract of the Borrower or any Subsidiary, or give rise to a right thereunder to require any payment, repurchase or redemption to be made by the Borrower or any Subsidiary, or give rise to a right of, or result in, any termination, cancellation, acceleration or right of renegotiation of any obligation thereunder, and (e) except for Liens created under the Loan Documents, will not result in the creation or imposition of any Lien on any asset of the Borrower or any Subsidiary. There is no default under any Material Agreement and none of the Loan Parties or their Subsidiaries is bound by any contractual obligation, or subject to any restriction in any organization document, or any requirement of Law, which could in any such case reasonably be expected to result in a Material Adverse Effect.

SECTION 3.04. Financial Condition; No Material Adverse Change. (a) The Borrower has heretofore furnished to the Lenders its consolidated balance sheet and statements of operations, stockholders' equity, comprehensive income and cash flows (i) as of and for the fiscal year ended December 31, 2016, audited by and accompanied by the opinion of KPMG LLP, independent registered public accounting firm, (ii) as of and for each of the fiscal quarters and the portion of the fiscal year ended March 31, June 30 and September 30, 2017, in the case of clause (ii) above, certified by its chief financial officer. Such financial statements present fairly, in all material respects, the financial position, results of operations and cash flows of the Borrower and its consolidated Subsidiaries as of such dates and for such periods in accordance with GAAP, subject to normal year-end audit adjustments and the absence of certain footnotes in the case of the statements referred to in clause (ii) above.

(b) [Intentionally Omitted]

(c) Except as disclosed in the financial statements referred to above or the notes thereto, neither the Borrower nor any Subsidiary has, as of the Restatement Effective Date, any material contingent liabilities, unusual long-term commitments or unrealized losses.

(d) Since December 31, 2016, there has been no event or condition that has resulted, or could reasonably be expected to result, in a material adverse change in the business, assets, operations or condition (financial or otherwise) of the Borrower and the Subsidiaries, taken as a whole.

SECTION 3.05. Properties. The Borrower and each Subsidiary has good title to, or valid leasehold interests in, all its property material to its business, except for minor defects in title that do not interfere with its ability to conduct its business as currently conducted or to utilize such properties for their intended purposes.

SECTION 3.06. Intellectual Property. (a) The Borrower and each Subsidiary owns, or is licensed to use, all patents, trademarks, copyrights, licenses, technology, software, domain names and other intellectual property that is necessary for the conduct of their business as currently conducted, and proposed to be conducted, and without conflict with the rights of any other Person, except to the extent any such conflict, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect. No patents, trademarks, copyrights, licenses, technology, software, domain names or other intellectual property used by

the Borrower or any Subsidiary in the operation of its business infringes upon the rights of any other Person, except for such infringements that, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect. No claim or litigation regarding patents, trademarks, copyrights, licenses, technology, software, domain names or other intellectual property owned or used by the Borrower or any Subsidiary is pending or, to the knowledge of the Borrower and the Subsidiaries, threatened against the Borrower or any Subsidiary that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Effect. As of the Restatement Effective Date, each patent, trademark, copyright or other intellectual property that, individually or in the aggregate, is material to the business of the Borrower and the Subsidiaries (or to the business of the Borrower and the Domestic Subsidiaries) is owned by the Borrower or a Domestic Subsidiary.

(b) Schedule 3.06 sets forth all source code licenses (whether as part of an escrow arrangement or otherwise) granted by the Borrower or any Subsidiary as of the Restatement Effective Date, other than any such licenses to software developers that have entered into use and nondisclosure agreements, and, if applicable, the escrow agent with respect thereto.

SECTION 3.07. Litigation and Environmental Matters. (a) There are no actions, suits or proceedings by or before any arbitrator or Governmental Authority pending against or, to the knowledge of the Borrower or any Subsidiary, threatened against or affecting the Borrower or any Subsidiary that (i) could reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect or (ii) involve any of the Loan Documents or the Transactions.

(b) Except with respect to any matters that, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect, neither the Borrower nor any Subsidiary (i) has failed to comply with any Environmental Law or to obtain, maintain or comply with any permit, license or other approval required under any Environmental Law, (ii) has become subject to any Environmental Liability, (iii) has received notice of any claim with respect to any Environmental Liability or (iv) knows of any basis for any Environmental Liability.

SECTION 3.08. Compliance with Laws and Agreements; No Default. The Borrower and each Subsidiary is in compliance with all Laws, including all orders of Governmental Authorities, applicable to it or its property and indentures, loan or credit agreements, mortgages, deeds of trust, contracts, undertakings or other agreements or instruments to which the Borrower or such Subsidiary is a party or by which it or any of its properties is bound, except where the failure to comply, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect. No Default has occurred and is continuing.

SECTION 3.09. Investment Company Status. Neither the Borrower nor any Subsidiary is an "investment company" as defined in, or subject to regulation under, the Investment Company Act of 1940.

SECTION 3.10. Taxes. The Borrower and each Subsidiary has timely filed or caused to be filed all Tax returns and reports required to have been filed and has paid or caused

to be paid all Taxes required to have been paid by it, except where (a) (i) the validity or amount thereof is being contested in good faith by appropriate proceedings, (ii) the Borrower or such Subsidiary has set aside on its books reserves with respect thereto to the extent required by GAAP and (iii) such contest effectively suspends collection of the contested obligation and the enforcement of any Lien securing such obligation or (b) the failure to do so could not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

SECTION 3.11. ERISA. No ERISA Events have occurred or are reasonably expected to occur that could, in the aggregate, reasonably be expected to result in a Material Adverse Effect. The present value of all accumulated benefit obligations under each Plan (based on the assumptions used for purposes of Accounting Standards Codification Topic 715) did not, as of the date of the most recent financial statements reflecting such amounts, exceed by more than $3,000,000 the fair value of the assets of such Plan, and the present value of all accumulated benefit obligations of all underfunded Plans (based on the assumptions used for purposes of Accounting Standards Codification Topic 715) did not, as of the date or dates of the most recent financial statements reflecting such amounts, exceed by more than $3,000,000 the fair value of the assets of all such underfunded Plans.

SECTION 3.12. Subsidiaries and Joint Ventures; Equity Interests in the Borrower. The Equity Interests in each Subsidiary have been duly authorized and validly issued and are fully paid and non-assessable. Except as set forth on Schedule 3.12, as of the Restatement Effective Date, there is no existing option, warrant, call, right, commitment or other agreement to which the Borrower or any Subsidiary is a party requiring, and there are no Equity Interests in any Subsidiary outstanding that upon conversion or exchange would require, the issuance by any Subsidiary of any additional Equity Interests or other securities convertible into, exchangeable for or evidencing the right to subscribe for or purchase any Equity Interests in any Subsidiary. Schedule 3.12A sets forth, as of the Restatement Effective Date, the name and jurisdiction of organization of, and the percentage of each class of Equity Interests owned by the Borrower or any Subsidiary in, (a) each Subsidiary and (b) each joint venture in which the Borrower or any Subsidiary owns any Equity Interests. Schedule 3.12 sets forth, as of the Restatement Effective Date, the percentage of each class of Equity Interests in the Borrower owned by the Permitted Holders.

SECTION 3.13. Insurance. Schedule 3.13 sets forth a description of all insurance maintained by or on behalf of the Borrower and the Subsidiaries as of the Restatement Effective Date.

SECTION 3.14. Solvency. Immediately after the consummation of the Transactions to occur on the Restatement Effective Date, including the making of each Loan to be made on the Restatement Effective Date and the application of the proceeds of such Loans, and after giving effect to the rights of subrogation and contribution under the Collateral Agreement, (a) the fair value of the assets of each Loan Party will exceed its debts and liabilities, subordinated, contingent or otherwise, (b) the present fair saleable value of the assets of each Loan Party will be greater than the amount that will be required to pay the probable liability on its debts and other liabilities, subordinated, contingent or otherwise, as such debts and other liabilities become absolute and matured, (c) each Loan Party will be able to pay its debts and liabilities, subordinated, contingent or otherwise, as such debts and liabilities become absolute

and matured and (d) each Loan Party will not have unreasonably small capital with which to conduct the business in which it is engaged, as such business is now conducted and is proposed to be conducted following the Restatement Effective Date.

SECTION 3.15. Disclosure. The Borrower has disclosed to the Lenders all agreements, instruments and corporate or other restrictions to which the Borrower or any Subsidiary is subject, and all other matters known to the Borrower, that, individually or in the aggregate, could reasonably be expected to result in a Material Adverse Effect. None of the reports, financial statements, certificates or other information furnished by or on behalf of the Borrower or any Subsidiary to the Administrative Agent, any Arranger or any Lender in connection with the negotiation of this Agreement or any other Loan Document, included herein or therein or furnished hereunder or thereunder (as modified or supplemented by other information so furnished) contains any material misstatement of fact or omits to state any material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that, with respect to forecasts or projected financial information, the Borrower represents only that such information was prepared in good faith based upon assumptions believed by it to be reasonable at the time made and at the time so furnished and, if furnished prior to the Restatement Effective Date, as of the Restatement Effective Date (it being understood that such forecasts and projections may vary from actual results and that such variances may be material).

SECTION 3.16. Collateral Matters. (a) The Collateral Agreement creates in favor of the Administrative Agent, for the benefit of the Secured Parties, a valid and enforceable security interest in the Collateral (as defined therein) and (i) in the case of Collateral (as defined therein) constituting certificated securities (as defined in the Uniform Commercial Code) delivered to the Administrative Agent on or prior to the Restatement Effective Date, together with instruments of transfer duly endorsed in blank, the security interest created under the Collateral Agreement constitutes a fully perfected security interest in all right, title and interest of the pledgors thereunder in such Collateral, prior and superior in right to any other Person, (ii) in the case of financing statements filed prior to the Restatement Effective Date in connection with the Existing Credit Agreement, the security interest created under the Collateral Agreement constitutes a fully perfected security interest in all right, title and interest of the Loan Parties in the remaining Collateral (as defined therein) to the extent perfection can be obtained by filing Uniform Commercial Code financing statements, prior and superior to the rights of any other Person, except for rights secured by Liens permitted under Section 6.02, (iii) when any other Collateral (as defined therein) constituting certificated securities (as defined in the Uniform Commercial Code) is delivered to the Administrative Agent after the Restatement Effective Date, together with instruments of transfer duly endorsed in blank, the security interest created under the Collateral Agreement will constitute a fully perfected security interest in all right, title and interest of the pledgors thereunder in such Collateral, prior and superior in right to any other Person, and (iv) when financing statements in appropriate form are filed in the applicable filing offices with respect to any Loan Party joined as a Loan Party after the Restatement Effective Date, the security interest created under the Collateral Agreement will constitute a fully perfected security interest in all right, title and interest of such Loan Parties in the Collateral (as defined therein) of such Loan Party to the extent perfection can be obtained by filing Uniform Commercial Code financing statements, in each case prior and superior to the rights of any other Person, except for rights secured by Liens permitted under Section 6.02.

(b) [Intentionally Omitted].

(c) (i) With respect to IP Security Agreements recorded with the United States Patent and Trademark Office or the United States Copyright Office, as applicable, prior to the Restatement Effective Date, the security interest created under the Collateral Agreement constitutes, effective upon the filing of (1) the IP Security Agreement recorded on March 2, 2012, with the United States Patent and Trademark Office at Reel 027794/Frame 0026, and (2) the IP Security Agreement recorded on March 2, 2012, with the United States Copyright Office in Volume 3613, Document 384, a fully perfected security interest in all right, title and interest of the Loan Parties in the Intellectual Property (as defined in the Collateral Agreement) covered by such IP Security Agreements in which a security interest may be perfected by filing in the United States of America, in each case prior and superior in right to any other Person, but subject to Liens permitted under Section 6.02 (it being understood that subsequent recordings in the United States Patent and Trademark Office or the United States Copyright Office may be necessary to perfect a security interest in such Intellectual Property acquired by a Loan Party after the date of such prior recording).

(ii) Upon the recordation of any IP Security Agreements executed on or after the Restatement Effective Date with the United States Patent and Trademark Office or the United States Copyright Office, as applicable, and the filing of the financing statements referred to in paragraph (a) of this Section, the security interest created under the Collateral Agreement will constitute a fully perfected security interest in all right, title and interest of the Loan Parties in the Intellectual Property (as defined in the Collateral Agreement) covered by such IP Security Agreements in which a security interest may be perfected by filing in the United States of America, in each case prior and superior in right to any other Person, but subject to Liens permitted under Section 6.02 (it being understood that subsequent recordings in the United States Patent and Trademark Office or the United States Copyright Office may be necessary to perfect a security interest in such Intellectual Property acquired by the Loan Parties after the Restatement Effective Date).

(d) Each Security Document, other than any Security Document referred to in the preceding paragraphs of this Section, upon execution and delivery thereof by the parties thereto and the making of the filings and taking of the other actions provided for therein, will be effective under applicable Law to create in favor of the Administrative Agent, for the benefit of the Secured Parties, a valid and enforceable security interest in the Collateral subject thereto, and will constitute a fully perfected security interest in all right, title and interest of the Loan Parties in the Collateral subject thereto, prior and superior to the rights of any other Person, except for rights secured by Liens permitted under Section 6.02.

SECTION 3.17. Federal Reserve Regulations. Neither the Borrower nor any Subsidiary is engaged or will engage, principally or as one of its important activities, in the business of purchasing or carrying margin stock (within the meaning of Regulation U of the Board of Governors), or extending credit for the purpose of purchasing or carrying margin stock. No part of the proceeds of the Loans or any issuance of Letters of Credit will be used, directly or indirectly, for any purpose that entails a violation (including on the part of any Lender) of any of the regulations of the Board of Governors, including Regulations U and X. Not more than 25% of the value of the assets subject to any provision of this Agreement or any other Loan Document

that restricts the ability of the Borrower or any Subsidiary to sell, create any Lien on or otherwise dispose of its assets will at any time be represented by margin stock.

SECTION 3.18. [Intentionally Omitted].

SECTION 3.19. Anti-Money Laundering/International Trade Law Compliance. No Covered Entity is a Sanctioned Person. No Covered Entity, either in its own right or through any third party (a) has any of its assets in a Sanctioned Country or in the possession, custody or control of a Sanctioned Person in violation of any Anti-Terrorism Law; (b) does business in or with, or derives any of its income from investments in or transactions with, any Sanctioned Country or Sanctioned Person in violation of any Anti-Terrorism Law; or (c) engages in any dealings or transactions prohibited by any Anti-Terrorism Law. The Loan Parties have instituted and maintain policies and procedures designed to promote and achieve continued compliance with Anti-Terrorism Laws.

SECTION 3.20. Anti-Corruption. Neither the Borrower nor any of its Subsidiaries, nor, to the knowledge of any Financial Officer or other executive officer of any Loan Party, any director, officer, agent, employee or other person acting on behalf of the Borrower or any of its Subsidiaries, has taken any action, directly or indirectly, that would result in a violation by such persons of the FCPA or any other applicable anti-corruption law; and the Loan Parties have instituted and maintain policies and procedures designed to promote and achieve continued compliance therewith.

SECTION 3.21. EEA Financial Institution. No Loan Party is an EEA Financial Institution.

ARTICLE IV

Conditions

SECTION 4.01. Conditions to Effectiveness(a) . The Existing Credit Agreement shall not be deemed amended and restated by this Agreement and no Lender (including the Swingline Lender) shall have any obligation to make any Loan under this Agreement and no Issuing Bank shall have any obligation to issue any Letter of Credit under this Agreement, unless and until each of the following conditions precedent shall have been satisfied (or waived in accordance with Section 9.02):

(a) The Administrative Agent shall have received from each party hereto either (i) a counterpart of this Agreement, the Reaffirmation Agreement and any Notes to be executed on the Restatement Effective Date, each signed on behalf of such party or (ii) evidence satisfactory to the Administrative Agent (which may include a facsimile transmission) that such party has signed a counterpart of this Agreement and such other documents.

(b) The Administrative Agent shall have received such documents and certificates as the Administrative Agent may reasonably request relating to the organization, existence and good standing of the Borrower and each Subsidiary Loan

Party, the authorization of the Transactions by the Borrower and each Subsidiary Loan Party, the incumbency of each person signing any Loan Document on behalf of the Borrower or any Subsidiary Loan Party and any other legal matters relating to the Borrower and the Subsidiary Loan Parties, the Credit Agreement, the other Loan Documents or the Transactions, all in form and substance reasonably satisfactory to the Administrative Agent.

(c) The Administrative Agent shall have received a certificate, dated the Restatement Effective Date and signed by the chief executive officer or the chief financial officer of the Borrower, confirming that, after giving effect to the provisions hereof (i) the representations and warranties of the Borrower set forth in this Agreement are true and correct (A) in the case of the representations and warranties qualified as to materiality, in all respects and (B) otherwise, in all material respects, in each case on and as of the Restatement Effective Date and (ii) no Default has occurred and is continuing on the Restatement Effective Date.

(d) The Administrative Agent shall have received a Compliance Certificate signed by a Financial Officer of the Borrower setting forth pro forma compliance with the financial covenants set forth in Sections 6.12 and 6.13.

(e) The Administrative Agent and the Arrangers shall have received all fees and other amounts due and payable on or prior to the Restatement Effective Date, including, to the extent invoiced, payment or reimbursement of all fees and expenses (including fees, charges and disbursements of counsel) required to be paid or reimbursed by any Loan Party under the Engagement Letter, the Fee Letter or the Loan Documents.

(f) The Lenders shall have received the financial statements, opinions and certificates referred to in Section 3.04.

(g) The Administrative Agent shall have received the annual financial projections for the Borrower and its consolidated Subsidiaries for the years 2018 through 2022, including a balance sheet statement of operations and cash flow (including the assumptions used in preparing such projections), in form and substance reasonably acceptable to the Administrative Agent.

(h) The Lenders shall have received all documentation and other information required by bank regulatory authorities under applicable "know your customer" and anti-money laundering rules and regulations, including the USA PATRIOT Act.

(i) The Collateral and Guarantee Requirement shall have been satisfied. The Administrative Agent shall have received a completed Perfection Certificate, dated the Restatement Effective Date and signed by an executive officer or a Financial Officer of the Borrower, together with all attachments contemplated thereby, including the results of a search of the Uniform Commercial Code (or equivalent) filings made with respect to the Loan Parties in the jurisdictions contemplated by the Perfection Certificate and copies of the financing statements (or similar documents) disclosed by such search and evidence reasonably satisfactory to the Administrative Agent that the Liens indicated by such

financing statements (or similar documents) are permitted under Section 6.02 or have been, or substantially contemporaneously with the initial funding of Loans on the Restatement Effective Date will be, released.

(j) The Administrative Agent shall have received evidence that the insurance required by Section 5.08 is in effect, together with endorsements naming the Administrative Agent, for the benefit of the Secured Parties, as additional insured and loss payee thereunder to the extent required under Section 5.08.

(k) The Administrative Agent shall have received a favorable written opinion (addressed to the Administrative Agent, the Lenders and the Issuing Banks and dated the Restatement Effective Date) of each of (i) Drinker Biddle & Reath LLP, counsel for the Borrower, (ii) if requested by the Administrative Agent, local counsel for the Borrower in each jurisdiction in which any Subsidiary Loan Party is organized, and the laws of which are not covered by the opinion letter referred to in clause (i) above, and (iii) to the extent requested by the Administrative Agent, foreign counsel for the Borrower and/or, to the extent requested by the Administrative Agent and customary in such jurisdiction, the Administrative Agent in each foreign jurisdiction in which Pledged Collateral (as defined in the Collateral Agreement) is located, in each case in form and substance reasonably satisfactory to the Administrative Agent.

(l) The Administrative Agent shall have received a certificate, dated the Restatement Effective Date and signed by the chief executive officer or the chief financial officer of the Borrower, confirming compliance with the conditions set forth in the first sentence of paragraph (i) of this Section and in paragraphs (a) and (b) of Section 4.02.

(m) All (i) "Loans" (as defined in the Existing Credit Agreement) outstanding under the Existing Credit Agreement as of the Restatement Effective Date of the Departing Lenders, including any accrued interest and fees thereon, and all other amounts owed to the Departing Lenders under the Existing Credit Agreement and (ii) all Term Loans (as defined in the Existing Credit Agreement) and accrued interest thereon, shall have been paid in full, it being understood that such payments may be made from proceeds of Loans hereunder on the Restatement Effective Date.

(n) The Administrative Agent shall have received a certificate, dated the Restatement Effective Date and signed by the chief financial officer of the Borrower, as to the solvency of the Loan Parties on a consolidated basis after giving effect to the Transactions occurring on the Restatement Effective Date, in form and substance reasonably satisfactory to the Administrative Agent.

(o) The Administrative Agent shall have received a certificate dated the Restatement Effective Date and signed by the chief executive officer or the chief financial officer of the Borrower either (i) attaching copies of all consents, licenses and approvals required in connection with the execution, delivery and performance by the Borrower and the other Loan Parties and the validity against the Borrower and the other Loan Parties of the Loan Documents to which they are a party, and such consents,

licenses and approvals shall be in full force and effect, or (ii) stating that no such consents, licenses or approvals are so required.

The Administrative Agent shall notify the Borrower and the Lenders of the Restatement Effective Date, and such notice shall be conclusive and binding.

SECTION 4.02. Each Credit Event. The obligation of each Lender to make a Loan on the occasion of any Borrowing, and of each Issuing Bank to issue, amend, renew or extend any Letter of Credit, is subject to receipt of the request therefor in accordance herewith and to the satisfaction of the following conditions:

(a) The representations and warranties of each Loan Party set forth in the Loan Documents shall be true and correct (i) in the case of representations and warranties qualified as to materiality, in all respects and (ii) otherwise, in all material respects, in each case on and as of the date of such Borrowing or the date of issuance, amendment, renewal or extension of such Letter of Credit, as applicable, except in the case of any such representation and warranty that expressly relates to a prior date, in which case such representation and warranty shall be so true and correct on and as of such prior date.

(b) At the time of and immediately after giving effect to such Borrowing or the issuance, amendment, renewal or extension of such Letter of Credit, as applicable, no Default shall have occurred and be continuing.

On the date of any Borrowing or the issuance, amendment, renewal or extension of any Letter of Credit, the Borrower shall be deemed to have represented and warranted that the conditions specified in paragraphs (a) and (b) of this Section have been satisfied and that, after giving effect to such Borrowing, or such issuance, amendment, renewal or extension of a Letter of Credit, the Aggregate Revolving Exposure (or any component thereof) shall not exceed the maximum amount thereof (or the maximum amount of any such component) specified in Section 2.01, 2.04(a) or 2.05(b).

ARTICLE V

Affirmative Covenants

The Borrower covenants and agrees with the Lenders, the Issuing Banks and the Administrative Agent that until the Commitments shall have expired or been terminated, the principal of and interest on each Loan and all fees and other amounts payable hereunder shall have been paid in full, all Letters of Credit shall have expired or been terminated and all LC Disbursements shall have been reimbursed:

SECTION 5.01. Financial Statements and Other Information. The Borrower will furnish to the Administrative Agent, for distribution to the Lenders:

(a) no later than March 31 of each fiscal year of the Borrower (or, if the Borrower is subject to periodic reporting obligations under the Exchange Act, by the date that the Annual Report on Form 10-K of the Borrower for the immediately preceding fiscal year would be required to be filed under the rules and regulations of the SEC,

giving effect to any automatic extension available thereunder for the filing of such form but not any other extension that is granted), its audited consolidated balance sheet and related consolidated statements of operations, stockholders' equity, comprehensive income and cash flows as of the end of and for the immediately preceding fiscal year, setting forth in each case in comparative form the figures for the prior fiscal year, all audited by and accompanied by the opinion of KPMG LLP or another independent registered public accounting firm of recognized national standing (without a "going concern" qualification or exception and without any qualification or exception as to the scope of such audit) to the effect that such consolidated financial statements present fairly, in all material respects, the financial position, results of operations and cash flows of the Borrower and its consolidated Subsidiaries on a consolidated basis as of the end of and for such year in accordance with GAAP and accompanied by a narrative report describing the financial position, results of operations and cash flows of the Borrower and its consolidated Subsidiaries in a form reasonably satisfactory to the Administrative Agent;

(b) within 45 days after the end of each of the first three fiscal quarters of each fiscal year of the Borrower (or, if the Borrower is subject to periodic reporting obligations under the Exchange Act, by the date that the Quarterly Report on Form 10-Q of the Borrower for such fiscal quarter would be required to be filed under the rules and regulations of the SEC, giving effect to any automatic extension available thereunder for the filing of such form but not any other extension that is granted), its consolidated balance sheet and related consolidated statements of operations, stockholders' equity, comprehensive income and cash flows as of the end of and for such fiscal quarter and the then elapsed portion of the fiscal year, setting forth in each case in comparative form the figures for the corresponding period or periods of (or, in the case of the balance sheet, as of the end of) the prior fiscal year, all certified by a Financial Officer of the Borrower as presenting fairly, in all material respects, the financial position, results of operations and cash flows of the Borrower and its consolidated Subsidiaries on a consolidated basis as of the end of and for such fiscal quarter and such portion of the fiscal year in accordance with GAAP, subject to normal year-end audit adjustments and the absence of certain footnotes, and accompanied by a narrative report describing the financial position, results of operations and cash flows of the Borrower and its consolidated Subsidiaries in a form reasonably satisfactory to the Administrative Agent;

(c) [Intentionally Omitted];

(d) concurrently with each delivery of financial statements under clause (a) or (b) above, a completed Compliance Certificate signed by a Financial Officer of the Borrower, (i) certifying as to whether a Default has occurred and, if a Default has occurred, specifying the details thereof and any action taken or proposed to be taken with respect thereto, (ii) setting forth reasonably detailed calculations demonstrating compliance with Sections 6.12 and 6.13, (iii) setting forth a list of Investments made in such period in reliance on Section 6.04(o)-(p) as well as a list of the aggregate amount of all Investments made in reliance on such Sections outstanding on the last day of the period covered by such Compliance Certificate, (iv) stating whether any change in GAAP or in the application thereof has occurred since the date of the consolidated balance sheet

of the Borrower most recently theretofore delivered under clause (a) or (b) above (or, prior to the first such delivery, referred to in Section 3.04) and, if any such change has occurred, specifying the effect of such change on the financial statements (including those for the prior periods) accompanying such certificate, and (v) certifying that all notices required to be provided under Sections 5.02, 5.03 and 5.04 have been provided;

(e) concurrently with any delivery of financial statements under clause (a) above, a certificate of the accounting firm that audited such financial statements stating whether it obtained knowledge during the course of its examination of such financial statements of any Default and, in the case it shall have obtained knowledge of any Default, specifying the details thereof (which certificate may be limited to the extent required by accounting rules or guidelines);

(f) no later than March 31 of each fiscal year of the Borrower, a certificate of a Financial Officer or other executive officer of the Borrower setting forth (i) all Equity Interests owned by any Loan Party, (ii) all Intellectual Property owned by any Loan Party and (iii) all commercial tort claims in respect of which a complaint or a counterclaim has been filed by any Loan Party and that, in each case, (A) if so owned or filed by a Loan Party as of the Restatement Effective Date would have been required to be set forth on the applicable schedule to the Collateral Agreement pursuant to the terms of such agreement and (B) have not been set forth on such schedule or on a certificate previously delivered pursuant to this clause (f);

(g) within 60 days after the end of each fiscal year of the Borrower, a detailed consolidated budget for the next two succeeding fiscal years (including a projected consolidated balance sheet and related projected statements of operations and cash flows as of the end of and for each such fiscal year and setting forth the assumptions used for purposes of preparing such budget) and, promptly after the same become available, any significant revisions to such budget;

(h) promptly after the same become publicly available, copies of all periodic and other reports, proxy statements and other materials filed by the Borrower or any Subsidiary with the SEC or with any national securities exchange, or distributed by the Borrower to its shareholders generally, as the case may be;

(i) promptly after any request therefor by the Administrative Agent or any Lender, copies of (i) any documents described in Section 101(k)(1) of ERISA that the Borrower or any of its ERISA Affiliates may request with respect to any Multiemployer Plan and (ii) any notices described in Section 101(l)(1) of ERISA that the Borrower or any of its ERISA Affiliates may request with respect to any Multiemployer Plan; provided that if the Borrower or any of its ERISA Affiliates has not requested such documents or notices from the administrator or sponsor of the applicable Multiemployer Plan, the Borrower or the applicable ERISA Affiliate shall promptly make a request for such documents and notices from such administrator or sponsor and shall provide copies of such documents and notices promptly after receipt thereof;

(j) promptly after the request by any Lender, all documentation and other information that such Lender reasonably requests in order to comply with its ongoing obligations under applicable "know your customer" and anti-money laundering rules and regulations, including the USA PATRIOT Act; and

(k) promptly after any request therefor, such other information regarding the operations, business affairs, assets, liabilities (including contingent liabilities) and financial condition of the Borrower or any Subsidiary, or compliance with the terms of any Loan Document, as the Administrative Agent or any Lender may reasonably request, including consolidating financial information.

Information required to be delivered pursuant to this Section shall be deemed to have been delivered if such information, or one or more annual or quarterly reports containing such information, shall have been posted by the Administrative Agent on Syndtrak or similar site to which the Lenders have been granted access or shall be available on the website of the SEC at http://www.sec.gov. Information required to be delivered pursuant to this Section may also be delivered by electronic communications pursuant to procedures approved by the Administrative Agent. In the event any financial statements delivered under clause (a) or (b) above shall be restated, the Borrower shall deliver, promptly after such restated financial statements become available, revised Compliance Certificates with respect to the periods covered thereby that give effect to such restatement, signed by a Financial Officer of the Borrower.

Notwithstanding anything to the contrary contained herein, if the due date by which any report, document or other information required to be furnished by the Borrower to the Administrative Agent pursuant to this Section 5.01 falls on a date that is not a Business Day, such due date will be the immediately following Business Day.

SECTION 5.02. Notices of Material Events. The Borrower will furnish to the Administrative Agent, for distribution to the Lenders, prompt written notice of the following:

(a) the occurrence of, or receipt by the Borrower of any written notice claiming the occurrence of, any Default;

(b) the filing or commencement of any action, suit or proceeding by or before any arbitrator or Governmental Authority against or affecting the Borrower or any Subsidiary, or any adverse development in any such pending action, suit or proceeding not previously disclosed in writing by the Borrower to the Administrative Agent and Lenders, that in each case could reasonably be expected to result in a Material Adverse Effect or that in any manner questions the validity of any Loan Document;

(c) the occurrence of any ERISA Event that, alone or together with any other ERISA Events that have occurred, could reasonably be expected to result in liability of the Borrower and the Subsidiaries in an aggregate amount of $5,000,000 or more;

(d) the occurrence of any casualty or other insured damage to any material portion of the Collateral or the commencement of any action or proceeding for the taking or expropriation of any material portion of the Collateral under power of eminent domain or by condemnation or similar proceeding; and

(e) any other development that has resulted, or could reasonably be expected to result, in a Material Adverse Effect.

Each notice delivered under this Section shall be accompanied by a statement of a Financial Officer or other executive officer of the Borrower setting forth the details of the event or development requiring such notice and any action taken or proposed to be taken with respect thereto.

SECTION 5.03. Additional Subsidiaries. If any Subsidiary is formed or acquired after the Restatement Effective Date, the Borrower will, as promptly as practicable, and in any event within 30 days (or such longer period as the Administrative Agent may agree to in writing), notify the Administrative Agent thereof and cause the Collateral and Guarantee Requirement to be satisfied with respect to such Subsidiary (if it is a Domestic Subsidiary) and with respect to any Equity Interests in or Indebtedness of such Subsidiary owned by any Loan Party.

SECTION 5.04. Information Regarding Collateral; Deposit and Securities Accounts. (a) The Borrower will furnish to the Administrative Agent prompt written notice of any change in (i) the legal name of any Loan Party, as set forth in its organizational documents, (ii) the jurisdiction of organization or the form of organization of any Loan Party (including as a result of any merger or consolidation), (iii) the location of the chief executive office of any Loan Party or (iv) the organizational identification number, if any, or, with respect to any Loan Party organized under the Laws of a jurisdiction that requires such information to be set forth on the face of a Uniform Commercial Code financing statement, the Federal Taxpayer Identification Number of such Loan Party. The Borrower agrees to promptly provide the Administrative Agent with certified organizational documents reflecting any of the changes described in the first sentence of this paragraph. The Borrower agrees not to effect or permit any change referred to in the first sentence of this paragraph unless all filings have been made under the Uniform Commercial Code or otherwise that are required in order for the Administrative Agent to continue at all times following such change to have a valid, legal and perfected security interest in all the Collateral.

(b) The Borrower will furnish to the Administrative Agent prompt written notice of the acquisition by any Loan Party of any material assets after the Restatement Effective Date, other than any assets constituting Collateral under the Security Documents in which the Administrative Agent shall have a valid, legal and perfected security interest (with the priority contemplated by the applicable Security Document) upon the acquisition thereof.

(c) The Borrower will promptly notify the Administrative Agent of the existence of any deposit account or securities account maintained by a Loan Party in respect of which a Control Agreement is required to be in effect pursuant to clause (f) of the definition of the term "Collateral and Guarantee Requirement" but is not yet in effect.

SECTION 5.05. Existence; Conduct of Business. (a) The Borrower and each Subsidiary will do or cause to be done all things necessary to preserve, renew and keep in full force and effect its legal existence and the rights, licenses, permits, privileges, franchises, patents, copyrights, trademarks and trade names material to the conduct of its business except,

other than in the case of the legal existence of the Borrower, where the failure to do so, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect; provided that the foregoing shall not prohibit any transaction permitted under Section 6.03 or 6.05.

(b) The Borrower and each Subsidiary will take all actions reasonably necessary to protect all patents, trademarks, copyrights, licenses, technology, software, domain names and other intellectual property necessary to the conduct of their business as currently conducted, and proposed to be conducted, including (i) protecting the secrecy and confidentiality of the Borrower's and the Subsidiaries' confidential information and trade secrets by having and enforcing a policy requiring all employees, consultants, licensees, vendors and contractors to execute confidentiality and invention assignment agreements, (ii) taking all actions reasonably necessary to ensure that no trade secrets of the Borrower or the Subsidiaries shall fall or have fallen into the public domain and (iii) protecting the secrecy and confidentiality of the source code of all computer software programs and applications owned or licensed by the Borrower or the Subsidiaries by having and enforcing a policy requiring any licensees of such source code (including any licensees under any source code escrow agreement) to enter into license agreements with appropriate use and nondisclosure restrictions, except in each case where the failure to take any such action, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect.

SECTION 5.06. Payment of Obligations. The Borrower and each Subsidiary will pay its obligations, including Tax liabilities, before the same shall become delinquent or in default, except where (a) (i) the validity or amount thereof is being contested in good faith by appropriate proceedings, (ii) the Borrower or such Subsidiary has set aside on its books reserves with respect thereto to the extent required by GAAP and (iii) such contest effectively suspends collection of the contested obligation and the enforcement of any Lien securing such obligation or (b) the failure to make payment could not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

SECTION 5.07. Maintenance of Properties. The Borrower and each Subsidiary will keep and maintain all property material to the conduct of its business in good working order and condition, ordinary wear and tear excepted.

SECTION 5.08. Insurance. The Borrower and each Subsidiary will maintain, with financially sound and reputable insurance companies, insurance in such amounts (with no greater risk retention) and against such risks as are customarily maintained by companies of established repute engaged in the same or similar businesses operating in the same or similar locations. Each such policy of liability, casualty or business interruption insurance maintained by or on behalf of Loan Parties shall (a) in the case of each liability insurance policy, name the Administrative Agent, on behalf of the Secured Parties, as an additional insured thereunder, (b) in the case of each casualty or business interruption insurance policy, contain a loss payable clause or endorsement that names the Administrative Agent, on behalf of the Secured Parties, as the loss payee thereunder and (c) provide for at least 30 days' (or such shorter number of days as may be agreed to by the Administrative Agent) prior written notice to the Administrative Agent of any cancellation of such policy.

SECTION 5.09. Books and Records; Inspection and Audit Rights. The Borrower and each Subsidiary will keep proper books of record and account in which full, true and correct entries in accordance with GAAP and applicable Law are made of all dealings and transactions in relation to its business and activities. The Borrower and each Subsidiary will permit the Administrative Agent or any Lender, and any agent designated by any of the foregoing, upon reasonable prior notice, (a) to visit and inspect its properties, (b) to examine and make extracts from its books and records and (c) to discuss its operations, business affairs, assets, liabilities (including contingent liabilities) and financial condition with its officers and independent accountants, all at such reasonable times and as often as reasonably requested; provided that unless an Event of Default shall have occurred and be continuing, (i) no more than two such visits and inspections may be made during any calendar year and (ii) each such visit and inspection shall be made upon at least three Business Days' prior notice to the Borrower or such Subsidiary.

SECTION 5.10. Compliance with Laws. The Borrower and each Subsidiary will comply with (i) all Laws, including all orders of any Governmental Authority, applicable to it or its property (including any applicable Environmental Laws) and (ii) all indentures, agreements and other instruments binding upon it or its property, except in each case where the failure to do so, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect.

SECTION 5.11. Use of Proceeds and Letters of Credit. (a) The proceeds of the Revolving Loans will be used solely for (i) the payment of the costs and expenses associated with the Transactions (ii) the payment on the Restatement Effective Date of the "Term Loans" (as defined in the Existing Credit Agreement), the obligations owed to the Departing Lenders under the Existing Credit Agreement and any other loans or obligations owed under the Existing Credit Agreement, if any, that are being paid on the Restatement Effective Date, and (iii) working capital and other general corporate purposes of the Borrower and the Subsidiaries.

(b) The proceeds of Swingline Loans will be used solely for working capital and other general corporate purposes of the Borrower and the Subsidiaries. Letters of Credit will be issued only to support obligations of the Borrower and the Subsidiaries incurred in the ordinary course of business.

SECTION 5.12. Further Assurances. The Borrower and each other Loan Party will execute any and all further documents, financing statements, agreements and instruments, and take all such further actions (including the filing and recording of financing statements, fixture filings and other documents), that may be required under any applicable Law, or that the Administrative Agent may reasonably request, to cause the Collateral and Guarantee Requirement to be and remain satisfied at all times or otherwise to effectuate the provisions of the Loan Documents, all at the expense of the Loan Parties. The Borrower will provide to the Administrative Agent, from time to time upon request, evidence reasonably satisfactory to the Administrative Agent as to the perfection and priority of the Liens created or intended to be created by the Security Documents.

ARTICLE VI

Negative Covenants

The Borrower covenants and agrees with the Lenders that during the period commencing on the Restatement Effective Date and until the Commitments shall have expired or been terminated, the principal of and interest on each Loan and all fees and other amounts payable hereunder shall have been paid in full, all Letters of Credit shall have expired or been terminated and all LC Disbursements shall have been reimbursed:

SECTION 6.01. Indebtedness; Certain Equity Securities. (a) Neither the Borrower nor any Subsidiary will create, incur, assume or permit to exist any Indebtedness, except:

(i) Indebtedness created under the Loan Documents;

(ii) Indebtedness existing on the Restatement Effective Date and set forth on Schedule 6.01 and Refinancing Indebtedness in respect thereof;

(iii) Indebtedness of the Borrower or any Subsidiary to the Borrower or any Subsidiary; provided that (A) such Indebtedness shall not have been transferred to any Person other than the Borrower or any Subsidiary, (B) any such Indebtedness owing by any Loan Party shall be subordinated to the Loan Document Obligations on terms customary for intercompany subordinated Indebtedness, as reasonably determined by the Administrative Agent, (C) any such Indebtedness owing to any Loan Party shall be evidenced by a promissory note that shall have been pledged pursuant to the Collateral Agreement and (D) any such Indebtedness owing by any Subsidiary that is not a Loan Party to any Loan Party shall be incurred in compliance with Section 6.04;

(iv) Guarantees incurred in compliance with Section 6.04;

(v) Indebtedness of the Borrower or any Subsidiary (A) incurred to finance the acquisition, construction and improvement of any fixed or capital assets, including Capital Lease Obligations; provided that such Indebtedness is incurred prior to or within 90 days after such acquisition or the completion of such construction or improvement and the principal amount of such Indebtedness does not exceed the cost of acquiring, constructing or improving such fixed or capital assets, or (B) assumed in connection with the acquisition of any fixed or capital assets, and Refinancing Indebtedness in respect of any of the foregoing; provided that the aggregate principal amount of Indebtedness permitted by this clause (v) shall not exceed $25,000,000 at any time outstanding;

(vi) Indebtedness of the Borrower or any Subsidiary (A) incurred to finance the acquisition, construction and improvement of any real property, provided that such Indebtedness is incurred prior to or within 90 days after such acquisition and the principal amount of such Indebtedness does not exceed the cost of acquiring such real property or (B) assumed in connection with the acquisition of any real property, and Refinancing Indebtedness in respect of any of the foregoing; provided that the aggregate principal

amount of Indebtedness permitted by this clause (vi) shall not exceed $25,000,000 at any time outstanding;

(vii) Indebtedness of any Person that becomes a Subsidiary (or of any Person not previously a Subsidiary that is merged or consolidated with or into a Subsidiary in a transaction permitted hereunder) after the date hereof, or Indebtedness of any Person that is assumed by the Borrower or any Subsidiary in connection with an acquisition of assets by the Borrower or such Subsidiary in a Permitted Acquisition, provided that (A) such Indebtedness exists at the time such Person becomes a Subsidiary (or is so merged or consolidated) or such assets are acquired and is not created in contemplation of or in connection with such Person becoming a Subsidiary (or such merger or consolidation) or such assets being acquired and (B) neither the Borrower nor any Subsidiary (other than such Person or the Subsidiary with which such Person is merged or consolidated or the Person that so assumes such Person's Indebtedness) shall Guarantee or otherwise become liable for the payment of such Indebtedness, and Refinancing Indebtedness in respect of any of the foregoing; provided that the aggregate principal amount of Indebtedness permitted by this clause (vii) that is secured or is owing by any Subsidiary that is not a Loan Party shall not exceed $10,000,000 at any time outstanding;

(viii) Indebtedness owed in respect of any overdrafts and related liabilities arising from treasury, depository and cash management services or in connection with any automated clearing-house transfers of funds; provided that such Indebtedness shall be repaid in full within five Business Days of the incurrence thereof;

(ix) obligations under bonds securing the performance of bids, tenders, contracts or leases incurred in the ordinary course of business;

(x) endorsement of instruments and other payment items for deposit; and

(xi) other Indebtedness in an aggregate principal amount not exceeding $175,000,000 at any time outstanding; provided that the aggregate principal amount of Indebtedness permitted by this clause (xi) that (A) is secured, (B) is owing by any Subsidiary that is not a Loan Party or (C) in the case of any such Indebtedness of the type referred to in clause (a) or (b) of the definition of the term "Indebtedness", has the stated final maturity that is, or upon nonsatisfaction of certain conditions could be, earlier than the date 90 days after the latest Revolving Maturity Date in effect on the date of incurrence of such Indebtedness, shall not exceed $35,000,000 at any time outstanding.

(b) Neither the Borrower nor any Subsidiary will issue or permit to exist any Disqualified Equity Interests.

SECTION 6.02. Liens. Neither the Borrower nor any Subsidiary will create, incur, assume or permit to exist any Lien on any asset now owned or hereafter acquired by it, or assign or sell any income or revenues (including accounts receivable) or rights in respect of any thereof, except:

(a) Liens created under the Loan Documents;

(b) Permitted Encumbrances;

(c) any Lien on any asset of the Borrower or any Subsidiary existing on the date hereof and set forth on Schedule 6.02; provided that (i) such Lien shall not apply to any other asset of the Borrower or any Subsidiary and (ii) such Lien shall secure only those obligations that it secures on the date hereof and any extensions, renewals and refinancings thereof that do not increase the outstanding principal amount thereof and, in the case of any such obligations constituting Indebtedness, that are permitted under Section 6.01 as Refinancing Indebtedness in respect thereof;

(d) any Lien existing on any asset prior to the acquisition thereof by the Borrower or any Subsidiary or existing on any asset of any Person that becomes a Subsidiary after the date hereof prior to the time such Person becomes a Subsidiary; provided that (i) such Lien secures only Indebtedness permitted by clause (vii) of Section 6.01(a) and obligations relating thereto not constituting Indebtedness, (ii) such Lien is not created in contemplation of or in connection with such acquisition or such Person becoming a Subsidiary, as the case may be, (iii) such Lien shall not apply to any other asset of the Borrower or any Subsidiary and (iv) such Lien shall secure only those obligations that it secures on the date of such acquisition or the date such Person becomes a Subsidiary, as the case may be, and any extensions, renewals and refinancings thereof that do not increase the outstanding principal amount thereof and, in the case of any such obligations constituting Indebtedness, that are permitted under Section 6.01 as Refinancing Indebtedness in respect thereof;

(e) Liens on fixed or capital assets acquired, constructed or improved by the Borrower or any Subsidiary; provided that (i) such Liens secure only Indebtedness permitted by clause (v) of Section 6.01(a) and obligations relating thereto not constituting Indebtedness and (ii) such Liens shall not apply to any other asset of the Borrower or any Subsidiary; provided further that in the event purchase money obligations are owed to any Person with respect to financing of more than one purchase of any fixed or capital assets, such Liens may secure all such purchase money obligations and may apply to all such fixed or capital assets financed by such Person;

(f) Liens on real property acquired, constructed or improved by the Borrower or any Subsidiary; provided that (i) such Liens secure only Indebtedness permitted by clause (vi) of Section 6.01(a) and obligations relating thereto not constituting Indebtedness and (ii) such Liens shall not apply to any other property of the Borrower or any Subsidiary;

(g) in connection with the sale or transfer of all the Equity Interests in a Subsidiary in a transaction permitted under Section 6.05, customary rights and restrictions contained in agreements relating to such sale or transfer pending the completion thereof;

(h) in the case of any Subsidiary that is not a wholly owned Subsidiary, any put and call arrangements related to its Equity Interests set forth in its organizational documents or any related joint venture or similar agreement;

(i) any Lien on assets of any Foreign Subsidiary; provided that (i) such Lien shall not apply to any Collateral (including any Equity Interests in any Subsidiary that constitute Collateral) or any other assets of the Borrower or any Domestic Subsidiary and (ii) such Lien shall secure only Indebtedness or other obligations of such Foreign Subsidiary permitted hereunder;

(j) Liens solely on any cash earnest money deposits, escrow arrangements or similar arrangements made by the Borrower or any Subsidiary in connection with any letter of intent or purchase agreement for an acquisition or other transaction permitted hereunder; and

(k) other Liens securing Indebtedness or other obligations in an aggregate principal amount not to exceed $25,000,000 at any time outstanding.

SECTION 6.03. Fundamental Changes; Business Activities. (a) Neither the Borrower nor any Subsidiary will merge into or consolidate with any other Person, or permit any other Person to merge into or consolidate with it, or liquidate or dissolve, except that, if at the time thereof and immediately after giving effect thereto no Default shall have occurred and be continuing, (i) any Person may merge into the Borrower in a transaction in which the Borrower is the surviving corporation, (ii) any Person (other than the Borrower) may merge or consolidate with any Subsidiary in a transaction in which the surviving entity is a Subsidiary (and, if any party to such merger or consolidation is a Subsidiary Loan Party, is a Subsidiary Loan Party), (iii) any Subsidiary may merge into or consolidate with any Person in a transaction permitted under Section 6.05 in which, after giving effect to such transaction, the surviving entity is not a Subsidiary and (iv) any Subsidiary may liquidate or dissolve if the Borrower determines in good faith that such liquidation or dissolution is in the best interests of the Borrower and is not materially disadvantageous to the Lenders; provided that any such merger or consolidation involving a Person that is not a wholly owned Subsidiary immediately prior thereto shall not be permitted unless it is also permitted under Section 6.04.

(b) Neither the Borrower nor any Subsidiary will engage to any material extent in any business other than businesses of the type conducted by the Borrower and the Subsidiaries on the Restatement Effective Date and businesses reasonably related thereto.

(c) Except as set forth on Schedule 3.12, the Borrower will not permit any Person other than the Borrower, or one or more of the Domestic Subsidiaries, to own any Equity Interests in any Subsidiary that is incorporated or organized under the Laws of the United States of America, any State thereof or the District of Columbia (other than any such Subsidiary acquired after the Restatement Effective Date).

(d) The Borrower will not permit any Subsidiary other than any Subsidiary Loan Party or any Material Foreign IP Subsidiary to own any patent, trademark, copyright or other intellectual property that, individually or in the aggregate, is material to the business of the Borrower and the Subsidiaries, provided that, in the case of any such patent, trademark, copyright or other intellectual property that is acquired in a Permitted Acquisition after the Restatement Effective Date, the Borrower will not be required to comply with the requirements of this paragraph (i) until the 30th day following the date of the acquisition thereof or (ii) if and

for so long as compliance with the requirements of this paragraph shall result, in the reasonable determination of a Financial Officer of the Borrower, in adverse tax consequences to the Borrower and the Subsidiaries that are material in relation to the aggregate consideration (including, in each case, Indebtedness assumed in connection therewith, all obligations in respect of deferred purchase price (including obligations under any purchase price adjustment but excluding earnout and similar payments) and all other consideration payable in connection therewith (including payment obligations in respect of noncompetition agreements or other arrangements representing acquisition consideration)) paid for such Permitted Acquisition (it being understood that nothing in this paragraph shall be deemed to limit the covenants of the Borrower under the final paragraph of Section 6.05).

SECTION 6.04. Investments, Loans, Advances, Guarantees and Acquisitions. Neither the Borrower nor any Subsidiary will purchase, hold, acquire (including pursuant to any merger or consolidation with any Person that was not a wholly owned Subsidiary prior thereto), make or otherwise permit to exist any Investment in any other Person, or purchase or otherwise acquire (in one transaction or a series of transactions) all or substantially all the assets of any other Person or of a business unit, division, product line or line of business of any other Person, or assets acquired other than in the ordinary course of business that, following the acquisition thereof, would constitute a substantial portion of the assets of the Borrower and the Subsidiaries, taken as a whole, except:

(a) Permitted Investments;

(b) Investments (i) existing on the date hereof (but not any additions thereto (including any capital contributions) made after the date hereof) or (ii) contemplated to be made pursuant to contractual obligations existing on the date hereof and, in the case of clauses (i) and (ii) above, set forth on Schedule 6.04;

(c) investments by the Borrower and the Subsidiaries in Equity Interests in their subsidiaries; provided that (i) such subsidiaries are Subsidiaries prior to such investments, (ii) any such Equity Interests held by a Loan Party shall be pledged in accordance with the requirements of the definition of the term "Collateral and Guarantee Requirement" and (iii) the aggregate amount of such investments by the Loan Parties in, and loans and advances by the Loan Parties to, and Guarantees by the Loan Parties of Indebtedness and other obligations of, Subsidiaries that are not Loan Parties (excluding all such investments, loans, advances and Guarantees existing on the date hereof and permitted by clause (b) above) shall not exceed $20,000,000 at any time outstanding;

(d) loans or advances made by the Borrower or any Subsidiary to the Borrower or any Subsidiary; provided that (i) the Indebtedness resulting therefrom is permitted by clause (iii) of Section 6.01(a) and (ii) the amount of such loans and advances made by the Loan Parties to Subsidiaries that are not Loan Parties shall be subject to the limitation set forth in clause (c) above;

(e) Guarantees by the Borrower or any Subsidiary of Indebtedness or other obligations of the Borrower or any Subsidiary (including any such Guarantees arising as a result of any such Person being a joint and several co-applicant with respect to any

letter of credit or letter of guaranty); provided that (i) a Subsidiary that has not Guaranteed the Secured Obligations pursuant to the Collateral Agreement shall not Guarantee any Indebtedness or other obligations of any Loan Party and (ii) the aggregate amount of Indebtedness and other obligations of Subsidiaries that are not Loan Parties that is Guaranteed by any Loan Party shall be subject to the limitation set forth in clause (c) above;

(f) to the extent constituting Investments, customer indemnification and warranty obligations arising under software license agreements, in each case in the ordinary course of business and consistent with past practices;

(g) Investments received in connection with the bankruptcy or reorganization of, or settlement of delinquent accounts and disputes with, customers and suppliers, in each case in the ordinary course of business;

(h) Investments made as a result of the receipt of noncash consideration from a sale, transfer, lease or other disposition of any asset in compliance with Section 6.05;

(i) Investments by the Borrower or any Subsidiary that result solely from the receipt by the Borrower or such Subsidiary from any of its subsidiaries of a dividend or other Restricted Payment in the form of Equity Interests, evidences of Indebtedness or other securities (but not any additions thereto made after the date of the receipt thereof);

(j) Investments in the form of Hedging Agreements permitted under Section 6.07;

(k) (i) payroll, travel and similar advances to directors and employees of the Borrower or any Subsidiary to cover matters that are expected at the time of such advances to be treated as expenses of the Borrower or such Subsidiary for accounting purposes and that are made in the ordinary course of business and (ii) with respect to any funds representing deferred compensation of any director or employee of the Borrower or any Subsidiary, any portfolio of investments approved by the board of directors of the Borrower configured to provide investment performance that simulates that which is invested by participants in the Borrower's Nonqualified Deferred Compensation Plan, provided that such portfolio of investments shall not exceed the obligations of such plan;

(l) loans or advances to directors and employees of the Borrower or any Subsidiary made in the ordinary course of business; provided that (i) the aggregate amount of such loans and advances outstanding at any time shall not exceed $1,000,000 and (ii) the proceeds of any such loans or advances shall not be used to purchase Equity Interests in the Borrower;

(m) any Permitted Acquisitions for aggregate consideration not exceeding $35,000,000 (including, in each case, Indebtedness assumed in connection therewith, all obligations in respect of deferred purchase price (including, obligations under any purchase price adjustment but excluding earnout or similar payments) and all other consideration payable in connection therewith (including payment obligations in respect

of noncompetition agreements or other arrangements representing acquisition consideration) in the aggregate in any fiscal year of the Borrower**;**

(n) any Permitted Acquisition; provided that at the time of, and immediately after giving effect to, such Permitted Acquisition, the Net Leverage Ratio, calculated at the end of the last fiscal quarter of the Borrower for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) and (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)), both on an actual basis and on a pro forma basis in accordance with Section 1.04(b), shall not exceed the Maximum Permitted Net Leverage Ratio then in effect minus 0.50 to 1.00; provided further that, with respect to each such Permitted Acquisition, the Borrower shall have delivered to the Administrative Agent a certificate of a Financial Officer of the Borrower, in form and substance reasonably satisfactory to the Administrative Agent, certifying that all the requirements set forth in the definition of the term "Permitted Acquisition" and in this clause (n) have been satisfied with respect to such Permitted Acquisition, together with reasonably detailed calculations in support thereof;

(o) Investments that constitute Minority Investments in an aggregate amount not to exceed $20,000,000 in any fiscal year of the Borrower (such amount for any fiscal year being referred to as the "Permitted Minority Investment Amount"), provided that (i) commencing with the fiscal year ending on December 31, 2018**,** the portion of the Permitted Minority Investment Amount for any fiscal year that has not been used to make Minority Investments during such fiscal year may be carried over for use in any subsequent fiscal year, (ii) the aggregate amount of all Minority Investments made in reliance on this clause (o) shall not exceed $50,000,000 at any time outstanding and (iii) at the time of, and immediately after giving effect to, any such Investment (x) no Default or Event of Default shall have occurred and be continuing or would result therefrom and (y) without limiting clause (x) immediately above, the Borrower is in compliance (calculated at the end of the last fiscal quarter of the Borrower for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) and (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)), both on an actual basis and on a pro forma basis in accordance with Section 1.04(b)) with the financial covenants contained in Sections 6.12 and 6.13;

(p) loans or advances made by the Borrower or any Subsidiary to its directors and senior executive officers for the sole purpose of purchasing Equity Interests in the Borrower; provided that (i) at the time of, and immediately after giving effect to, any such loans or advances (x) no Default or Event of Default shall have occurred and be continuing or would result therefrom and (y) without limiting clause (x) immediately above, the Borrower is in compliance (calculated at the end of the last fiscal quarter of the Borrower for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) and (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)), both on an actual basis and on a pro forma basis in accordance with Section 1.04(b)) with the financial covenants contained in Sections 6.12 and 6.13

and (ii) the aggregate amount of all Investments made in reliance on this clause (p) shall not exceed $25,000,000 at any time outstanding; and

(q) other Investments (excluding (i) Minority Investments, which may only be made after the Restatement Effective Date to the extent permitted under clause (o) above, and (ii) loans or advances by the Borrower or any Subsidiary to its directors and senior executive officers for the purpose of purchasing Equity Interests in the Borrower, which may only be made after the Restatement Effective Date to the extent permitted under clause (p) above); provided that, at the time each such Investment is purchased, made or otherwise acquired, (A) no Default shall have occurred and be continuing or would result therefrom, (B) the Borrower shall be in compliance with the covenants set forth in Sections 6.12 and 6.13 at the end of the last fiscal quarter of the Borrower for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) or (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)), both on an actual basis and on a pro forma basis in accordance with Section 1.04(b) and (C) the aggregate amount of all Investments made in reliance on this clause (q) shall not exceed $10,000,000 at any time outstanding.

SECTION 6.05. Asset Sales. Neither the Borrower nor any Subsidiary will sell, transfer, lease or otherwise dispose of any asset, including any Equity Interest owned by it, nor will any Subsidiary issue any additional Equity Interest in such Subsidiary (other than to the Borrower or any Subsidiary in compliance with Section 6.04, and other than directors' qualifying shares and other nominal amounts of Equity Interests that are required to be held by other Persons under applicable Law), except:

(a) sales, transfers, leases and other dispositions of inventory or used or surplus equipment in the ordinary course of business or of cash and Permitted Investments;

(b) grants of outbound term or perpetual licenses of patents, trademarks, copyrights or other intellectual property in the ordinary course of business that are non-exclusive;

(c) the abandonment, cancellation, non-renewal or discontinuance of use or maintenance of non-material intellectual property or failure to maintain in any material respect the integrity and security of the software used in the business of the Borrower or any Subsidiary, except in each case to the extent any such abandonment, cancellation, non-renewal, discontinuance or failure, individually or in the aggregate, would reasonably be expected to result in a Material Adverse Effect;

(d) sales, transfers, leases and other dispositions to the Borrower or any Subsidiary; provided that any such sales, transfers, leases or other dispositions involving a Subsidiary that is not a Loan Party shall be made in compliance with Sections 6.04 and 6.09; and

(e) sales, transfers, leases and other dispositions of assets that are not permitted by any other clause of this Section; provided that (i) the aggregate fair value of all assets sold, transferred, leased or otherwise disposed of in reliance on this clause shall not exceed $20,000,000 during any fiscal year of the Borrower, (ii) all sales, transfers, leases and other dispositions made in reliance on this clause shall be made for fair value and at least 90% cash consideration, and (iii) at the time of such sale, transfer, lease or other disposition, no Default shall have occurred and be continuing.

Notwithstanding the foregoing, (i) no such sale or transfer of any Equity Interests in any Subsidiary shall be permitted unless (A) such Equity Interests constitute all the Equity Interests in such Subsidiary held by the Borrower and the Subsidiaries and (B) immediately after giving effect to such transaction, the Borrower and the Subsidiaries shall otherwise be in compliance with Section 6.04, (ii) neither the Borrower nor any Subsidiary shall enter into any exclusive license of any patent, trademark, copyright or other intellectual property that, individually or in the aggregate with all other such licensed items of intellectual property, is material to the business of the Borrower and the Subsidiaries and (iii) neither the Borrower nor any Domestic Subsidiary shall sell, transfer, lease or otherwise dispose of (other than pursuant to non-exclusive licenses held by any Foreign Subsidiary, including licenses under the Technology License Agreement) to any Foreign Subsidiary any patent, trademark, copyright or other intellectual property that, individually or in the aggregate with all other such disposed items of intellectual property, is material to the business of the Borrower and the Subsidiaries (or to the business of the Borrower and the Domestic Subsidiaries).

SECTION 6.06. Sale/Leaseback Transactions. Neither the Borrower nor any Subsidiary will enter into any Sale/Leaseback Transaction unless (a) the sale or transfer of the property thereunder is permitted under Section 6.05, (b) any Capital Lease Obligations arising in connection therewith are permitted under Section 6.01 and (c) any Liens arising in connection therewith (including Liens deemed to arise in connection with any such Capital Lease Obligations) are permitted under Section 6.02.

SECTION 6.07. Hedging Agreements. Neither the Borrower nor any Subsidiary will enter into any Hedging Agreement, except (a) Hedging Agreements entered into to hedge or mitigate risks to which the Borrower or any Subsidiary has actual exposure (other than in respect of Equity Interests or Indebtedness of the Borrower or any Subsidiary) and not for speculative purposes and (b) Hedging Agreements entered into in order to effectively cap, collar or exchange interest rates (from fixed to floating rates, from one floating rate to another floating rate or otherwise) with respect to any interest-bearing liability or investment of the Borrower or any Subsidiary.

SECTION 6.08. Restricted Payments; Certain Payments of Indebtedness.

(a) Neither the Borrower nor any Subsidiary will declare or make, or agree to pay or make, directly or indirectly, any Restricted Payment, or incur any obligation (contingent or otherwise) to do so, except that:

(i) the Borrower may declare and pay dividends with respect to its Equity Interests payable solely in additional Equity Interests that are not Disqualified Equity Interests;

(ii) any Subsidiary may declare and pay dividends or make other distributions with respect to its capital stock, partnership or membership interests or other similar Equity Interests, ratably to the holders of such Equity Interests;

(iii) the Borrower may repurchase Equity Interests upon the cashless exercise of stock options if such Equity Interests represent a portion of the exercise price of such options and applicable withholding Taxes;

(iv) the Borrower may make cash payments in lieu of the issuance of fractional shares representing insignificant interests in the Borrower in connection with the exercise of warrants, options or other securities convertible into or exchangeable for capital stock in the Borrower;

(v) so long as no Default shall have occurred and be continuing, the Borrower may purchase its common stock (A) upon the exercise of "Put Rights" by the holders of such common stock and (B) in the case of termination of any employee's (other than any employee that is a Significant Equity Holder) employment with the Borrower or any Subsidiary (including as a result of death and disability of such employee), upon the exercise of "Continuing Repurchase Rights" or "Call Rights" by the Borrower with respect to shares of common stock held by such employee, in each case pursuant to and in accordance with the Stock Option Plan;

(vi) the Borrower may make Restricted Payments without limitation as to amount so long as (I) the Borrower satisfies each of the conditions described in clauses (I) and (II) of clause (vii) immediately below and (II) at the end the last fiscal quarter of the Borrower preceding the time that any such additional Restricted Payment is paid for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) or (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)), both on an actual basis and after giving pro forma effect to the payment of such additional Restricted Payment, the Net Leverage Ratio (calculated on a pro forma basis in accordance with Section 1.04(b)) shall be less than 3.00 to 1.00; and

(vii) the Borrower may make additional Restricted Payments not exceeding $35,000,000 in the aggregate in any fiscal year of the Borrower so long as (I) no Default shall have occurred and be continuing and (II) the Borrower is in compliance (calculated at the end of the last fiscal quarter of the Borrower for which financial statements have been delivered to the Lenders pursuant to Section 5.01(a) and (b) (or, prior to the delivery of any such financial statements, at the end of the last fiscal quarter of the Borrower included in the financial statements referred to in Section 3.04(a)), both on an actual basis and on a pro forma basis in accordance with Section 1.04(b)), with the financial covenants contained in Sections 6.12 and 6.13.

(b) Neither the Borrower nor any Subsidiary will make or agree to pay or make, directly or indirectly, any payment or other distribution (whether in cash, securities or other property) of or in respect of principal of or interest on any Indebtedness, or any payment or other distribution (whether in cash, securities or other property), including any sinking fund or

similar deposit, on account of the purchase, redemption, retirement, acquisition, defeasance, cancelation or termination of any Indebtedness, except:

(i) payments of or in respect of Indebtedness created under the Loan Documents;

(ii) regularly scheduled interest and principal payments as and when due in respect of any Indebtedness;

(iii) refinancings of Indebtedness with the proceeds of other Indebtedness permitted under Section 6.01;

(iv) payments of secured Indebtedness that becomes due as a result of the voluntary sale or transfer of the assets securing such Indebtedness in transactions permitted hereunder; and

(v) payments of or in respect of Indebtedness made solely with Equity Interests in the Borrower (other than Disqualified Equity Interests).

SECTION 6.09. Transactions with Affiliates. Neither the Borrower nor any Subsidiary will sell, lease, license or otherwise transfer any assets to, or purchase, lease, license or otherwise acquire any assets from, or otherwise engage in any other transactions with, any of its Affiliates, except (a) transactions in the ordinary course of business that are at prices and on terms and conditions not less favorable to the Borrower or such Subsidiary than those that would prevail in arm's-length transactions with unrelated third parties, provided that any payments under the Executive Bonus Plan shall not be permitted under this clause (a) unless also permitted under clause (f) below, (b) transactions between or among the Loan Parties not involving any other Affiliate, (c) any Restricted Payment permitted under Section 6.08, (d) issuances by the Borrower of Equity Interests (other than Disqualified Equity Interests), and receipt by the Borrower of capital contributions, (e) compensation and indemnification of, and other employment arrangements with, directors, officers and employees of the Borrower or any Subsidiary entered in the ordinary course of business, (f) bonus payments pursuant to and in accordance with the Executive Bonus Plan, provided that no Default shall have occurred and be continuing or would result therefrom, (g) loans and advances permitted under clauses (k), (l) and (p) of Section 6.04 and (h) licenses and other transactions pursuant to the Technology License Agreement and the Cost Sharing Agreement.

SECTION 6.10. Restrictive Agreements. Neither the Borrower nor any Subsidiary will, directly or indirectly, enter into or permit to exist any agreement or other arrangement that restricts or imposes any condition upon (a) the ability of the Borrower or any Subsidiary to create, incur or permit to exist any Lien upon any of its assets to secure any Secured Obligations or (b) the ability of any Subsidiary to pay dividends or other distributions with respect to its Equity Interests or to make or repay loans or advances to the Borrower or any Domestic Subsidiary or to Guarantee Indebtedness of the Borrower or any Domestic Subsidiary; provided that (i) the foregoing shall not apply to (A) restrictions and conditions imposed by Law or by any Loan Document, (B) restrictions and conditions existing on the date hereof identified on Schedule 6.10 (but shall apply to any extension or renewal of, or any amendment or

modification expanding the scope of, any such restriction or condition), and (C) in the case of any Subsidiary that is not a wholly owned Subsidiary, restrictions and conditions imposed by its organizational documents or any related joint venture or similar agreement, provided that such restrictions and conditions apply only to such Subsidiary and to any Equity Interests in such Subsidiary, (ii) clause (a) of the foregoing shall not apply to (A) restrictions or conditions imposed by any agreement relating to secured Indebtedness permitted by clause (v), (vi), (vii), (viii) or (xi) of Section 6.01(a) if such restrictions or conditions apply only to the property or assets securing such Indebtedness or (B) customary provisions in leases and other agreements restricting the assignment thereof and (iii) clause (b) of the foregoing shall not apply to (A) customary restrictions and conditions contained in agreements relating to the sale of a Subsidiary, or a business unit, division, product line or line of business, that are applicable solely pending such sale, provided that such restrictions and conditions apply only to the Subsidiary, or the business unit, division, product line or line of business, that is to be sold and such sale is permitted hereunder, or (B) restrictions and conditions imposed by agreements relating to Indebtedness of any Subsidiary in existence at the time such Subsidiary became a Subsidiary and otherwise permitted by clause (vii) of Section 6.01(a) (but shall apply to any extension or renewal of, or any amendment or modification expanding the scope of, any such restriction or condition), provided that such restrictions and conditions apply only to such Subsidiary, and (C) restrictions and conditions imposed by agreements relating to Indebtedness of Foreign Subsidiaries permitted under Section 6.01(a), provided that such restrictions and conditions apply only to Foreign Subsidiaries. Nothing in this Section shall be deemed to modify the requirements set forth in the definition of the term "Collateral and Guarantee Requirement" or the obligations of the Loan Parties under Sections 5.03, 5.04 or 5.12 or under the Security Documents.

SECTION 6.11. Amendment of Material Documents; Technology License Agreements; Etc. (a) Neither the Borrower nor any Subsidiary will amend, modify or waive any of its rights under (i) its certificate of incorporation, bylaws or other organizational documents to the extent that such amendment, modification or waiver shall be materially adverse to the Lenders when taken as a whole (as determined in good faith by the Borrower), or (ii) the Technology License Agreement or the Cost Sharing Agreement, in each case under this clause (ii) to the extent such amendment, modification or waiver could reasonably be expected to result in a Material Adverse Effect.

(b) The Borrower shall not permit the licensee under the Technology License Agreement or the counterparty to the Cost Sharing Agreement, or the licensee or counterparty to any similar technology license or cost sharing agreement (including any replacement or extension of the Technology License Agreement or the Cost Sharing Agreement, as the case may be) entered into by the Borrower or any Subsidiary, to be any Person other than the Borrower or a wholly owned Subsidiary.

SECTION 6.12. Net Leverage Ratio. The Borrower will not permit the Net Leverage Ratio to exceed 3.50 to 1.00 determined as at the end of each fiscal quarter; provided however, the Loan Parties shall have the right, exercisable not more than two (2) times during the term of this Agreement by giving written notice to the Administrative Agent, to increase the maximum Net Leverage Ratio permitted hereunder to 4.00 to 1.0, calculated as of the end of

each fiscal quarter during the twelve month period commencing on the date immediately preceding the date of a Material Acquisition.

SECTION 6.13. Minimum Interest Coverage Ratio. The Borrower will not permit the Interest Coverage Ratio to be less than 3.00 to 1.00 determined as at the end of each fiscal quarter.

SECTION 6.14. [Intentionally Omitted].

SECTION 6.15. Fiscal Year. The Borrower will not, and the Borrower will not permit any other Loan Party to, change its fiscal year to end on a date other than December 31.

SECTION 6.16. Anti-Money Laundering/International Trade Law Compliance. (a) No Covered Entity will become a Sanctioned Person, (b) no Covered Entity, either in its own right or through any third party, will (i) have any of its assets in a Sanctioned Country or in the possession, custody or control of a Sanctioned Person in violation of any Anti-Terrorism Law; (ii) do business in or with, or derive any of its income from investments in or transactions with, any Sanctioned Country or Sanctioned Person in violation of any Anti-Terrorism Law; (iii) engage in any dealings or transactions prohibited by any Anti-Terrorism Law or (iv) use any part of the proceeds of the Loans or any Letter of Credit to fund any operation in, finance any investments or activities in, or, make any payments to, a Sanctioned Country or Sanctioned Person in violation of any Anti-Terrorism Law, (c) the funds used to repay the Obligations will not be derived from any unlawful activity, (d) each Covered Entity shall comply with all Anti-Terrorism Laws, and (e) the Borrower shall promptly notify the Administrative Agent in writing upon the occurrence of a Reportable Compliance Event.

SECTION 6.17. Anti-Corruption. The Borrower shall not permit any part of the proceeds of the Loans or any Letter of Credit to be used, directly or indirectly, in furtherance of an offer, payment, promise to pay, or authorization of the payment or giving of money, or anything else of value, to any Person in violation of the FCPA or any other applicable anti-corruption law. The Borrower shall maintain in effect policies and procedures designed to promote compliance by the Borrower, its Subsidiaries, and their respective directors, officers, employees and agents with the FCPA and any other applicable anti-corruption laws.

ARTICLE VII

Events of Default

If any of the following events ("Events of Default") shall occur:

(a) the Borrower shall fail to pay any principal of any Loan or any reimbursement obligation in respect of any LC Disbursement when and as the same shall become due and payable, whether at the due date thereof or at a date fixed for prepayment thereof or otherwise;

(b) the Borrower shall fail to pay any interest on any Loan or any fee or any other amount (other than an amount referred to in clause (a) of this Article) payable under this Agreement or any other Loan Document, when and as the same shall become due

and payable, and such failure shall continue unremedied for a period of three Business Days;

(c) any representation, warranty or statement made or deemed made by or on behalf of the Borrower or any Subsidiary in any Loan Document or in any report, certificate, financial statement or other information provided pursuant to or in connection with any Loan Document or any amendment or modification thereof or waiver thereunder shall prove to have been false or misleading in any material respect (or, in the case of any such representation or warranty qualified as to the materiality, in any respect) as of the time it was made or furnished;

(d) the Borrower shall fail to observe or perform any covenant, condition or agreement contained in Section 5.02, 5.05(a) (with respect to the existence of the Borrower), 5.05(b) or 5.11 or in Article VI;

(e) any Loan Party shall fail to observe or perform any covenant, condition or agreement contained in any Loan Document (other than those specified in clause (a), (b) or (d) of this Article), and such failure shall continue unremedied for a period of 30 days after the earlier of (i) notice thereof from the Administrative Agent or any Lender to the Borrower (with a copy to the Administrative Agent in the case of any such notice from a Lender) and (ii) a Financial Officer or any other senior officer of the Borrower becoming aware of such failure;

(f) the Borrower or any Subsidiary shall fail to make any payment (whether of principal, interest, termination payment or other payment obligation and regardless of amount) in respect of any Material Indebtedness, when and as the same shall become due and payable;

(g) any event or condition occurs that results in any Material Indebtedness becoming due prior to its scheduled maturity or that enables or permits (with or without the giving of notice, the lapse of time or both) the holder or holders of any Material Indebtedness or any trustee or agent on its or their behalf, or, in the case of any Hedging Agreement, the applicable counterparty, to cause such Material Indebtedness to become due, or to require the prepayment, repurchase, redemption or defeasance thereof, prior to its scheduled maturity or, in the case of any Hedging Agreement, to cause the termination thereof; provided that this clause (g) shall not apply to secured Indebtedness that becomes due as a result of the voluntary sale or transfer of the assets securing such Indebtedness;

(h) an involuntary proceeding shall be commenced or an involuntary petition shall be filed seeking (i) liquidation, reorganization or other relief in respect of the Borrower or any Subsidiary or its debts, or of a substantial part of its assets, under any Federal, state or foreign bankruptcy, insolvency, receivership or similar Law now or hereafter in effect or (ii) the appointment of a receiver, trustee, custodian, sequestrator, conservator or similar official for the Borrower or any Subsidiary or for a substantial part of its assets, and, in any such case, such proceeding or petition shall continue undismissed for 60 days or an order or decree approving or ordering any of the foregoing shall be entered;

(i) the Borrower or any Subsidiary shall (i) voluntarily commence any proceeding or file any petition seeking liquidation (other than any liquidation permitted by clause (iv) of Section 6.03(a)), reorganization or other relief under any Federal, state or foreign bankruptcy, insolvency, receivership or similar Law now or hereafter in effect, (ii) consent to the institution of, or fail to contest in a timely and appropriate manner, any proceeding or petition described in clause (h) of this Article, (iii) apply for or consent to the appointment of a receiver, trustee, custodian, sequestrator, conservator or similar official for the Borrower or any Subsidiary or for a substantial part of its assets, (iv) file an answer admitting the material allegations of a petition filed against it in any such proceeding, (v) make a general assignment for the benefit of creditors or (vi) the board of directors (or similar governing body) of the Borrower or any Subsidiary (or any committee thereof) shall adopt any resolution or otherwise authorize any action to approve any of the actions referred to in this clause (i) or in clause (h) of this Article;

(j) the Borrower or any Subsidiary shall become unable, admit in writing its inability or fail generally to pay its debts as they become due;

(k) one or more judgments for the payment of money in an aggregate amount in excess of $10,000,000 (other than any such judgment covered by insurance (other than under a self-insurance program) to the extent a claim therefor has been made in writing and liability therefor has not been denied by the insurer, so long as, in the opinion of the Required Lenders, such insurer is financially sound), shall be rendered against the Borrower, any Subsidiary or any combination thereof and the same shall remain undischarged for a period of 30 consecutive days during which execution shall not be effectively stayed, or any action shall be legally taken by a judgment creditor to attach or levy upon any assets of the Borrower or any Subsidiary to enforce any such judgment;

(l) one or more judgments for injunctive relief shall be rendered against the Borrower, any Subsidiary or any combination thereof that could, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect;

(m) one or more ERISA Events shall have occurred that, in the opinion of the Required Lenders, could, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect;

(n) any Lien purported to be created under any Security Document shall cease to be, or shall be asserted by any Loan Party not to be, a valid and perfected Lien on any material Collateral, with the priority required by the applicable Security Document, except as a result of (i) a sale or transfer of the applicable Collateral in a transaction permitted under the Loan Documents or (ii) the Administrative Agent's failure to maintain possession of any stock certificate, promissory note or other instrument delivered to it under the Collateral Agreement;

(o) any Guarantee purported to be created under any Loan Document shall cease to be, or shall be asserted by any Loan Party not to be, in full force and effect, except upon the consummation of any transaction permitted under this Agreement as a result of which the Subsidiary Loan Party providing such Guarantee ceases to be a

Subsidiary or upon the termination of such Loan Document in accordance with its terms; or

(p) on or after the Restatement Effective Date, a Change in Control shall occur;

then, and in every such event (other than an event with respect to the Borrower described in clause (h) or (i) of this Article), and at any time thereafter during the continuance of such event, the Administrative Agent may, and at the request of the Required Lenders shall, by notice to the Borrower, take any or all of the following actions, at the same or different times: (i) terminate the Commitments, and thereupon the Commitments shall terminate immediately, (ii) declare the Loans then outstanding to be due and payable in whole (or in part (but ratably as among the Classes of Loans and the Loans of each Class at the time outstanding), in which case any principal not so declared to be due and payable may thereafter be declared to be due and payable), and thereupon the principal of the Loans so declared to be due and payable, together with accrued interest thereon and all fees and other obligations of the Borrower hereunder, shall become due and payable immediately, and (iii) require the deposit of cash collateral in respect of LC Exposure as provided in Section 2.05(i), in each case without presentment, demand, protest or other notice of any kind, all of which are hereby waived by the Borrower; and in the case of any event with respect to the Borrower described in clause (h) or (i) of this Article, the Commitments shall automatically terminate, the principal of the Loans then outstanding, together with accrued interest thereon and all fees and other obligations of the Borrower hereunder, shall immediately and automatically become due and payable and the deposit of such cash collateral in respect of LC Exposure shall immediately and automatically become due, in each case without presentment, demand, protest or other notice of any kind, all of which are hereby waived by the Borrower.

ARTICLE VIII

The Administrative Agent

Each of the Lenders and the Issuing Banks hereby irrevocably appoints (and each other Secured Party, whether or not a party hereto, by its acceptance of the benefits of the Collateral and of the Guarantees of the Secured Obligations provided under the Loan Documents, will be deemed to hereby appoint) the entity named as Administrative Agent in the heading of this Agreement to serve as administrative agent and collateral agent under the Loan Documents, and authorizes (and each other Secured Party, whether or not a party hereto, by its acceptance of the benefits of the Collateral and of the Guarantees of the Secured Obligations provided under the Loan Documents, will be deemed to hereby authorize) the Administrative Agent to take such actions and to exercise such powers as are delegated to the Administrative Agent by the terms of the Loan Documents, together with such actions and powers as are reasonably incidental thereto. In addition, to the extent required under the Laws of any jurisdiction other than the United States of America, each of the Lenders and the Issuing Banks hereby grants (and each other Secured Party, whether or not a party hereto, by its acceptance of the benefits of the Collateral and of the Guarantees of the Secured Obligations provided under the Loan Documents, will be deemed to hereby grant) to the Administrative Agent any required

powers of attorney to execute any Security Document governed by the Laws of such jurisdiction on such Lender's or Issuing Bank's behalf.

The Person serving as the Administrative Agent hereunder shall have the same rights and powers in its capacity as a Lender or an Issuing Bank as any other Lender or Issuing Bank and may exercise the same as though it were not the Administrative Agent, and such Person and its Affiliates may accept deposits from, lend money to, act as the financial advisor or in any other advisory capacity for and generally engage in any kind of business with the Borrower or any Subsidiary or other Affiliate thereof as if such Person were not the Administrative Agent hereunder and without any duty to account therefor to the Lenders.

The Administrative Agent shall not have any duties or obligations except those expressly set forth in the Loan Documents. Without limiting the generality of the foregoing, (a) the Administrative Agent shall not be subject to any fiduciary or other implied duties, regardless of whether a Default has occurred and is continuing, (b) the Administrative Agent shall not have any duty to take any discretionary action or to exercise any discretionary power, except discretionary rights and powers expressly contemplated by the Loan Documents that the Administrative Agent is required to exercise as directed in writing by the Required Lenders (or such other number or percentage of the Lenders as shall be necessary, or as the Administrative Agent shall believe in good faith to be necessary, under the circumstances as provided in the Loan Documents), provided that the Administrative Agent shall not be required to take any action that, in its opinion, could expose the Administrative Agent to liability or be contrary to any Loan Document or applicable Law, and (c) except as expressly set forth in the Loan Documents, the Administrative Agent shall not have any duty to disclose, and shall not be liable for the failure to disclose, any information relating to the Borrower, any Subsidiary or any other Affiliate of any of the foregoing that is communicated to or obtained by the Person serving as Administrative Agent or any of its Affiliates in any capacity. The Administrative Agent shall not be liable for any action taken or not taken by it with the consent or at the request of the Required Lenders (or such other number or percentage of the Lenders as shall be necessary, or as the Administrative Agent shall believe in good faith to be necessary, under the circumstances as provided in Section 9.02) or in the absence of its own gross negligence or willful misconduct, as determined by a court of competent jurisdiction by a final and non-appealable judgment. The Administrative Agent shall be deemed not to have knowledge of any Default unless and until written notice thereof is given to the Administrative Agent by the Borrower, a Lender or an Issuing Bank, and the Administrative Agent shall not be responsible for or have any duty to ascertain or inquire into (i) any statement, warranty or representation made in or in connection with any Loan Document, (ii) the contents of any certificate, report or other document delivered thereunder or in connection therewith, (iii) the performance or observance of any of the covenants, agreements or other terms or conditions set forth in any Loan Document or the occurrence of any Default, (iv) the sufficiency, validity, enforceability, effectiveness or genuineness of any Loan Document or any other agreement, instrument or document, or (v) the satisfaction of any condition set forth in Article IV or elsewhere in any Loan Document, other than to confirm receipt of items expressly required to be delivered to the Administrative Agent. Notwithstanding anything herein to the contrary, the Administrative Agent shall not have any liability arising from any confirmation of the Revolving Exposure or the component amounts thereof.

The Administrative Agent shall be entitled to rely, and shall not incur any liability for relying, upon any notice, request, certificate, consent, statement, instrument, document or other writing (including any electronic message, Internet or intranet website posting or other distribution) believed by it to be genuine and to have been signed, sent or otherwise authenticated by the proper Person (whether or not such Person in fact meets the requirements set forth in the Loan Documents for being the signatory, sender or authenticator thereof). The Administrative Agent also shall be entitled to rely, and shall not incur any liability for relying, upon any statement made to it orally or by telephone and believed by it to be made by the proper Person (whether or not such Person in fact meets the requirements set forth in the Loan Documents for being the signatory, sender or authenticator thereof), and may act upon any such statement prior to receipt of written confirmation thereof. In determining compliance with any condition hereunder to the making of a Loan, or the issuance of a Letter of Credit, that by its terms must be fulfilled to the satisfaction of a Lender or Issuing Bank, the Administrative Agent may presume that such condition is satisfactory to such Lender or Issuing Bank unless the Administrative Agent shall have received written notice to the contrary from such Lender or Issuing Bank prior to the making of such Loan or the issuance of such Letter of Credit. The Administrative Agent may consult with legal counsel (who may be counsel for the Borrower), independent accountants and other experts selected by it, and shall not be liable for any action taken or not taken by it in accordance with the advice of any such counsel, accountants or experts.

The Administrative Agent may perform any of and all its duties and exercise its rights and powers hereunder or under any other Loan Document by or through any one or more sub-agents appointed by the Administrative Agent. The Administrative Agent and any such sub-agent may perform any of and all their duties and exercise their rights and powers through their respective Related Parties. The exculpatory provisions of this Article shall apply to any such sub-agent and to the Related Parties of the Administrative Agent and any such sub-agent, and shall apply to their respective activities in connection with the syndication of the credit facilities provided for herein as well as activities as Administrative Agent.

Subject to the terms of this paragraph, the Administrative Agent may resign at any time from its capacity as such. In connection with such resignation, the Administrative Agent shall give notice of its intent to resign to the Lenders, the Issuing Banks and the Borrower. Upon receipt of any such notice of resignation, the Required Lenders shall have the right, in consultation (so long as no Event of Default has occurred and is continuing) with the Borrower, to appoint a successor. If no successor shall have been so appointed by the Required Lenders and shall have accepted such appointment within 30 days after the retiring Administrative Agent gives notice of its intent to resign, then the retiring Administrative Agent may, on behalf of the Lenders and the Issuing Banks, appoint a successor Administrative Agent, which shall be a financial institution or an Affiliate of a financial institution. Upon the acceptance of its appointment as Administrative Agent hereunder by a successor, such successor shall succeed to and become vested with all the rights, powers, privileges and duties of the retiring Administrative Agent, and the retiring Administrative Agent shall be discharged from its duties and obligations hereunder and under the other Loan Documents. The fees payable by the Borrower to a successor Administrative Agent shall be the same as those payable to its predecessor unless otherwise agreed by the Borrower and such successor. Notwithstanding the foregoing, in the event no successor Administrative Agent shall have been so appointed and shall

have accepted such appointment within 30 days after the retiring Administrative Agent gives notice of its intent to resign, the retiring Administrative Agent may give notice of the effectiveness of its resignation to the Lenders, the Issuing Banks and the Borrower, whereupon, on the date of effectiveness of such resignation stated in such notice, (a) the retiring Administrative Agent shall be discharged from its duties and obligations hereunder and under the other Loan Documents, provided that, solely for purposes of maintaining any security interest granted to the Administrative Agent under any Security Document for the benefit of the Secured Parties, the retiring Administrative Agent shall continue to be vested with such security interest as collateral agent for the benefit of the Secured Parties and, in the case of any Collateral in the possession of the Administrative Agent, shall continue to hold such Collateral, in each case until such time as a successor Administrative Agent is appointed and accepts such appointment in accordance with this paragraph (it being understood and agreed that the retiring Administrative Agent shall have no duty or obligation to take any further action under any Security Document, including any action required to maintain the perfection of any such security interest), and (b) the Required Lenders shall succeed to and become vested with all the rights, powers, privileges and duties of the retiring Administrative Agent, provided that (i) all payments required to be made hereunder or under any other Loan Document to the Administrative Agent for the account of any Person other than the Administrative Agent shall be made directly to such Person and (ii) all notices and other communications required or contemplated to be given or made to the Administrative Agent shall also directly be given or made to each Lender and each Issuing Bank until such time as the Required Lenders appoint a successor Administrative Agent as provided for above in this Article VIII. Following the effectiveness of the Administrative Agent's resignation from its capacity as such, the provisions of this Article and Section 9.03, as well as any exculpatory, reimbursement and indemnification provisions set forth in any other Loan Document, shall continue in effect for the benefit of such retiring Administrative Agent, its sub-agents and their respective Related Parties in respect of any actions taken or omitted to be taken by any of them while it was acting as Administrative Agent and in respect of the matters referred to in the proviso under clause (a) above.

To the extent required by any applicable law, the Administrative Agent may withhold from any payment to any Lender or other Secured Party (which terms include, for purposes of this Article VIII, any Issuing Bank) an amount equivalent to any applicable withholding Tax. If any payment has been made to any Lender or other Secured Party by the Administrative Agent without the applicable withholding Tax being withheld from such payment and the Administrative Agent has paid over the applicable withholding Tax to the Internal Revenue Service or any other Governmental Authority, or the Internal Revenue Service or any other Governmental Authority asserts a claim that the Administrative Agent did not properly withhold Tax from amounts paid to or for the account of any Lender or any other Secured Party because the appropriate form was not delivered or was not properly executed or because such Lender or other Secured Party failed to notify the Administrative Agent of a change in circumstance which rendered the exemption from, or reduction of, withholding Tax ineffective or for any other reason, such Lender or other Secured Party, as the case may be, shall indemnify the Administrative Agent fully for all amounts paid, directly or indirectly, by the Administrative Agent as Tax or otherwise, including any penalties or interest and together with all expenses (including legal expenses, allocated internal costs and out-of-pocket expenses) incurred.

Each Lender and Issuing Bank acknowledges that it has, independently and without reliance upon the Administrative Agent, any Arranger or any other Lender or Issuing Bank, or any of the Related Parties of any of the foregoing, and based on such documents and information as it has deemed appropriate, made its own credit analysis and decision to enter into this Agreement. Each Lender and Issuing Bank also acknowledges that it will, independently and without reliance upon the Administrative Agent, any Arranger or any other Lender or Issuing Bank, or any of the Related Parties of any of the foregoing, and based on such documents and information as it shall from time to time deem appropriate, continue to make its own decisions in taking or not taking action under or based upon this Agreement, any other Loan Document or any related agreement or any document furnished hereunder or thereunder.

Each Lender, by delivering its signature page to this Agreement and funding its Loans on the Restatement Effective Date, or delivering its signature page to an Assignment and Assumption or an Incremental Facility Agreement pursuant to which it shall become a Lender hereunder, shall be deemed to have acknowledged receipt of, and consented to and approved, each Loan Document and each other document required to be delivered to, or be approved by or satisfactory to, the Administrative Agent or the Lenders on the Restatement Effective Date.

No Secured Party shall have any right individually to realize upon any of the Collateral or to enforce any Guarantee of the Secured Obligations, it being understood and agreed that all powers, rights and remedies under the Loan Documents may be exercised solely by the Administrative Agent on behalf of the Secured Parties in accordance with the terms thereof. In the event of a foreclosure by the Administrative Agent on any of the Collateral pursuant to a public or private sale or other disposition, the Administrative Agent or any Lender may be the purchaser or licensor of any or all of such Collateral at any such sale or other disposition, and the Administrative Agent, at the direction of the Required Lenders, as agent for and representative of the Secured Parties (but not any Lender or Lenders in its or their respective individual capacities unless the Required Lenders shall otherwise agree in writing) shall be entitled, for the purpose of bidding and making settlement or payment of the purchase price for all or any portion of the Collateral sold at any such public sale, to use and apply any of the Loan Document Obligations as a credit on account of the purchase price for any collateral payable by the Administrative Agent on behalf of the Secured Parties at such sale or other disposition. Each Secured Party, whether or not a party hereto, will be deemed, by its acceptance of the benefits of the Collateral and of the Guarantees of the Secured Obligations provided under the Loan Documents, to have agreed to the foregoing provisions.

Notwithstanding anything herein to the contrary, neither any Arranger nor any Person named on the cover page of this Agreement as a Syndication Agent or a Documentation Agent shall have any duties or obligations under this Agreement or any other Loan Document (except in its capacity, as applicable, as a Lender or an Issuing Bank), but all such Persons shall have the benefit of the indemnities provided for hereunder.

The provisions of this Article are solely for the benefit of the Administrative Agent, the Lenders and the Issuing Banks, and neither the Borrower nor any other Loan Party shall have any rights as a third party beneficiary of any such provisions.

Each Lender acknowledges and agrees that neither such Lender, nor any of its Affiliates, participants or assignees, may rely on the Administrative Agent to carry out such Lender's, Affiliate's, participant's or assignee's customer identification program, or other obligations required or imposed under or pursuant to the USA Patriot Act or the regulations thereunder, including the regulations contained in 31 CFR 103.121 (as hereafter amended or replaced, the "CIP Regulations"), or any other Anti-Terrorism Law, including any programs involving any of the following items relating to or in connection with any of the Loan Parties, their Affiliates or their agents, the Loan Documents or the transactions hereunder or contemplated hereby: (a) any identity verification procedures, (b) any recordkeeping, (c) comparisons with government lists, (d) customer notices or (e) other procedures required under the CIP Regulations or such other Laws.

ARTICLE IX

Miscellaneous

SECTION 9.01. Notices. (a) Except in the case of notices and other communications expressly permitted to be given by telephone (and subject to paragraph (b) below), all notices and other communications provided for herein shall be in writing and shall be delivered by hand or overnight courier service, mailed by certified or registered mail or sent by fax, as follows:

(i) if to the Borrower, to it at 685 Stockton Drive, Exton, PA 19341, Attention of Chief Financial Officer (Tel. No. (610) 458-5000; Fax No. (610) 458-3025), with a copy to the General Counsel (Tel. No. (610) 458-5000; Fax No. (610) 458-3181);

(ii) if to the Administrative Agent, to PNC Bank, National Association, 1000 Westlakes Drive, Suite 300, Berwyn, PA 19312, Attention of Domenic D'Ginto (Tel. No. (610) 699-5548; Fax No. (610) 725-5799), with a copy to PNC Bank, National Association, Agency Services, Mail Stop: P7-PFSC-04-I, PNC Firstside Center, 500 First Avenue, 4th Floor, Pittsburgh, PA 15219, Attention of Agency Services (Tel. No. (412) 762-6442; Fax No. (412) 762-8672);

(iii) if to any Issuing Bank, to it at its address (or telephone number or fax number) most recently specified by it in a notice delivered to the Administrative Agent and the Borrower (or, in the absence of any such notice, to the address (or telephone number or fax number) set forth in the Administrative Questionnaire of the Lender that is serving as such Issuing Bank or is an Affiliate thereof);

(iv) if to the Swingline Lender, to PNC Bank, National Association, 1000 Westlakes Drive, Suite 300, Berwyn, PA 19312, Attention of Domenic D'Ginto (Tel. No. (610) 699-5548; Fax No. (610) 725-5799), with a copy to PNC Bank, National Association, Agency Services, Mail Stop: P7-PFSC-04-I, PNC Firstside Center, 500 First Avenue, 4th Floor, Pittsburgh, PA 15219, Attention of Agency Services (Tel. No. (412) 762-6442; Fax No. (412) 762-8672); and

(v) if to any other Lender, to it at its address (or telephone number or fax number) set forth in its Administrative Questionnaire.

Notices sent by hand or overnight courier service, or mailed by certified or registered mail, shall be deemed to have been given when received; notices sent by fax shall be deemed to have been given when sent (except that, if not given during normal business hours for the recipient, shall be deemed to have been given at the opening of business on the next business day for the recipient); and notices delivered through electronic communications to the extent provided in paragraph (b) below shall be effective as provided in such paragraph. Notices delivered through electronic communications to the extent provided in Section 9.01(b) shall be effective as provided in such Section. Notwithstanding the foregoing, notice by the Administrative Agent and/or the Lenders of the existence of a Default or Event of Default shall not be effective if only sent by fax.

(b) Notices and other communications to the Lenders and Issuing Banks hereunder may be delivered or furnished by electronic communications (including email and Internet and intranet websites) pursuant to procedures approved by the Administrative Agent; provided that the foregoing shall not apply to notices under Article II to any Lender or Issuing Bank if such Lender or Issuing Bank, as applicable, has notified the Administrative Agent that it is incapable of receiving notices under such Article by electronic communication. Any notices or other communications to the Administrative Agent or the Borrower may be delivered or furnished by electronic communications pursuant to procedures approved by the recipient thereof prior thereto; provided that approval of such procedures may be limited or rescinded by any such Person by notice to each other such Person. Unless the Administrative Agent otherwise prescribes, (i) notices and other communications sent to an e-mail address shall be deemed received upon the sender's receipt of an acknowledgement from the intended recipient (such as by the "return receipt requested" function, as available, return e-mail or other written acknowledgement); provided that if such notice or other communication is not sent during the normal business hours of the recipient, such notice or communication shall be deemed to have been sent at the opening of business on the next Business Day for the recipient, and (ii) notices or communications posted to an Internet or intranet website shall be deemed received upon the deemed receipt by the intended recipient at its e-mail address as described in the foregoing clause (i) of notification that such notice or communication is available and identifying the website address therefor.

(c) Any party hereto may change its address or fax number for notices and other communications hereunder by notice to the other parties hereto.

SECTION 9.02. Waivers; Amendments. (a) No failure or delay by the Administrative Agent, any Issuing Bank or any Lender in exercising any right or power hereunder or under any other Loan Document shall operate as a waiver thereof, nor shall any single or partial exercise of any such right or power, or any abandonment or discontinuance of steps to enforce such a right or power, preclude any other or further exercise thereof or the exercise of any other right or power. The rights and remedies of the Administrative Agent, the Issuing Banks and the Lenders hereunder and under the other Loan Documents are cumulative and are not exclusive of any rights or remedies that they would otherwise have. No waiver of any provision of any Loan Document or consent to any departure by any Loan Party therefrom

shall in any event be effective unless the same shall be permitted by paragraph (b) of this Section, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. Without limiting the generality of the foregoing, the execution and delivery of this Agreement, the making of a Loan or the issuance of a Letter of Credit shall not be construed as a waiver of any Default, regardless of whether the Administrative Agent, any Lender or any Issuing Bank may have had notice or knowledge of such Default at the time.

(b) Except as provided in Sections 2.14(b), 2.21 and 2.22 and in the Collateral Agreement, none of this Agreement, any other Loan Document or any provision hereof or thereof may be waived, amended or modified except, in the case of this Agreement, pursuant to an agreement or agreements in writing entered into by the Borrower, the Administrative Agent and the Required Lenders and, in the case of any other Loan Document, pursuant to an agreement or agreements in writing entered into by the Administrative Agent and the Loan Party or Loan Parties that are parties thereto, in each case with the consent of the Required Lenders, provided that (i) any provision of this Agreement or any other Loan Document may be amended by an agreement in writing entered into by the Borrower and the Administrative Agent to cure any ambiguity, omission, defect or inconsistency so long as, in each case, the Lenders shall have received at least five Business Days' prior written notice thereof and the Administrative Agent shall not have received, within five Business Days of the date of such notice to the Lenders, a written notice from the Required Lenders stating that the Required Lenders object to such amendment and (ii) no such agreement shall (A) increase the Commitment of any Lender without the written consent of such Lender, (B) reduce the principal amount of any Loan or LC Disbursement or reduce the rate of interest thereon (other than as a result of any waiver of any increase in the interest rate applicable to any Loan pursuant to Section 2.13(d) or any change in the definition, or in any components thereof, of the term "Net Leverage Ratio"), or reduce any fees payable hereunder, without the written consent of each Lender directly affected thereby, (C) postpone the scheduled maturity date of any Loan, or the required date of reimbursement of any LC Disbursement, or any date for the payment of any interest or fees payable hereunder, or reduce the amount of, waive or excuse any such payment, or postpone the scheduled date of expiration of any Commitment, without the written consent of each Lender directly affected thereby, (D) change Section 2.18(b), 2.18(c) or clause SECOND of Section 5.02 of the Collateral Agreement in a manner that would alter the pro rata sharing of payments required thereby without the written consent of each Lender, (E) change any of the provisions of this Section or the percentage set forth in the definition of the term "Required Lenders" or any other provision of any Loan Document specifying the number or percentage of Lenders (or Lenders of any Class) required to waive, amend or modify any rights thereunder or make any determination or grant any consent thereunder, without the written consent of each Lender (or each Lender of such Class, as the case may be), provided that, with the consent of the Required Lenders, the provisions of this Section and the definition of the term "Required Lenders" may be amended to include references to any new class of loans created under this Agreement (or to lenders extending such loans), (F) release any Subsidiary Loan Party from its Guarantee under the Collateral Agreement (except as expressly provided in Section 9.14 or the Collateral Agreement), or limit its liability in respect of such Guarantee, without the written consent of each Lender, (G) release all or substantially all the Collateral from the Liens of the Security Documents, without the written consent of each Lender (except as expressly provided in Section 9.14 or the applicable Security Document (including any such release by the Administrative Agent in connection with any sale or other disposition of the Collateral upon the

exercise of remedies under the Security Documents), it being understood that an amendment or other modification of the type of obligations secured by the Security Documents shall not be deemed to be a release of the Collateral from the Liens of the Security Documents), (H) amend the definition of Optional Currency or Section 2.23(e) without the written consent of the Administrative Agent, the Swingline Lender and each Issuing Bank and (I) change any provisions of any Loan Document in a manner that by its terms adversely affects the rights in respect of payments due to Lenders holding Loans of any Class differently than those holding Loans of any other Class, without the written consent of Lenders representing a Majority in Interest of each affected Class; provided further that (1) no such agreement shall amend, modify, extend or otherwise affect the rights or obligations of the Administrative Agent, any Issuing Bank or the Swingline Lender without the prior written consent of the Administrative Agent, such Issuing Bank or the Swingline Lender, as the case may be, and (2) any waiver, amendment or modification of this Agreement that by its terms affects the rights or duties under this Agreement of the Lenders of a particular Class (but not the Lenders of any other Class), may be effected by an agreement or agreements in writing entered into by the Borrower and the requisite number or percentage in interest of the affected Class of Lenders that would be required to consent thereto under this Section if such Class of Lenders were the only Class of Lenders hereunder at the time. Notwithstanding the foregoing, no consent of any Defaulting Lender shall be required with respect to any amendment, waiver or other modification of this Agreement or any other Loan Document, except with respect to those referred to in clauses (B), (C) and (D) of the first proviso of this paragraph and then only in the event such Defaulting Lender shall be directly affected by such amendment, waiver or other modification.

SECTION 9.03. Expenses; Indemnity; Damage Waiver. (a) The Borrower shall pay (i) all reasonable out-of-pocket expenses incurred by the Administrative Agent, PNC Capital Markets LLC (as an Arranger) and their Affiliates, including the reasonable fees, charges and disbursements of counsel for any of the foregoing, in connection with the structuring, arrangement and syndication of the credit facilities provided for herein and any credit or similar facility refinancing or replacing, in whole or in part, any of the credit facilities provided for herein, including the preparation, execution and delivery of the Engagement Letter and the Fee Letter, as well as the preparation, execution, delivery and administration of this Agreement, the other Loan Documents or any amendments, modifications or waivers of the provisions hereof or thereof (whether or not the transactions contemplated hereby or thereby shall be consummated), (ii) all reasonable out-of-pocket expenses incurred by any Issuing Bank in connection with the issuance, amendment, renewal or extension of any Letter of Credit or any demand for payment thereunder and (iii) all out-of-pocket expenses incurred by the Administrative Agent, any Arranger, any Issuing Bank or any Lender, including the reasonable fees, charges and disbursements of any counsel for any of the foregoing, in connection with the enforcement or protection of its rights in connection with the Loan Documents, including its rights under this Section, or in connection with the Loans made or Letters of Credit issued hereunder, including all such out-of-pocket expenses incurred during any workout, restructuring or negotiations in respect of such Loans or Letters of Credit.

(b) The Borrower shall indemnify the Administrative Agent (and any sub-agent thereof), each Arranger, the Syndication Agent, the Documentation Agent, each Lender and Issuing Bank, and each Related Party of any of the foregoing Persons (each such Person being called an "Indemnitee"), against, and hold each Indemnitee harmless from, any and all

losses, claims, damages, penalties, liabilities and related expenses, including the reasonable fees, charges and disbursements of any counsel for any Indemnitee, incurred by or asserted against any Indemnitee arising out of, in connection with, or as a result of (i) the structuring, arrangement and the syndication of the credit facilities provided for herein, the preparation, execution, delivery and administration of the Engagement Letter, the Fee Letter, this Agreement, the other Loan Documents or any other agreement or instrument contemplated hereby or thereby, the performance by the parties to the Engagement Letter, the Fee Letter, this Agreement or the other Loan Documents of their obligations thereunder or the consummation of the Transactions or any other transactions contemplated thereby, (ii) any Loan or Letter of Credit or the use of the proceeds therefrom (including any refusal by any Issuing Bank to honor a demand for payment under a Letter of Credit if the documents presented in connection with such demand do not strictly comply with the terms of such Letter of Credit), (iii) any actual or alleged presence or Release of Hazardous Materials on or from any property currently or formerly owned or operated by the Borrower or any Subsidiary, or any Environmental Liability related in any way to the Borrower or any Subsidiary, or (iv) any actual or prospective claim, litigation, investigation or proceeding relating to any of the foregoing, whether based on contract, tort or any other theory and whether initiated against or by any party to the Engagement Letter, the Fee Letter, this Agreement or any other Loan Document, any Affiliate of any of the foregoing or any third party (and regardless of whether any Indemnitee is a party thereto); provided that such indemnity shall not, as to any Indemnitee, be available to the extent that such losses, claims, damages, liabilities or related expenses are determined by a court of competent jurisdiction by final and nonappealable judgment to have resulted from the gross negligence or willful misconduct of such Indemnitee. This Section 9.03(b) shall not apply with respect to Taxes, other than any Taxes that represent losses or damages arising from any non-Tax claim.

(c) To the extent that the Borrower shall fail to pay any amount required to be paid by it under paragraph (a) or (b) of this Section to the Administrative Agent (or any sub-agent thereof), any Issuing Bank, the Swingline Lender or any Related Party of any of the foregoing, each Lender severally agrees to pay to the Administrative Agent (or any such sub-agent), such Issuing Bank, the Swingline Lender or such Related Party, as the case may be, such Lender's pro rata share (determined as of the time that the applicable unreimbursed expense or indemnity payment is sought) of such unpaid amount; provided that the unreimbursed expense or indemnified loss, claim, damage, liability or related expense, as the case may be, was incurred by or asserted against the Administrative Agent (or such sub-agent), such Issuing Bank or the Swingline Lender in its capacity as such, or against any Related Party of any of the foregoing acting for the Administrative Agent (or any such sub-agent), any Issuing Bank or the Swingline Lender in connection with such capacity. For purposes of this Section, a Lender's "pro rata share" shall be determined based upon its share of the sum of the total Revolving Exposures and unused Commitments at the time (or most recently outstanding and in effect).

(d) To the extent permitted by applicable Law, the Borrower shall not assert, or permit any of their Affiliates or Related Parties to assert, and each hereby waives, any claim against any Indemnitee (i) for any damages arising from the use by others of information or other materials obtained through telecommunications, electronic or other information transmission systems (including the Internet), or (ii) on any theory of liability, for special, indirect, consequential or punitive damages (as opposed to direct or actual damages) arising out of, in connection with, or as a result of this Agreement, any other Loan Document or any agreement or

instrument contemplated hereby or thereby, the Transactions, any Loan or Letter of Credit or the use of the proceeds thereof.

(e) All amounts due under this Section shall be payable promptly after written demand therefor.

SECTION 9.04. Successors and Assigns. (a) The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns permitted hereby (including any Affiliate of any Issuing Bank that issues any Letter of Credit), except that (i) the Borrower may not assign or otherwise transfer any of its rights or obligations hereunder without the prior written consent of the Administrative Agent and each Lender (and any attempted assignment or transfer by the Borrower without such consent shall be null and void) and (ii) no Lender may assign or otherwise transfer its rights or obligations hereunder except in accordance with this Section. Nothing in this Agreement, expressed or implied, shall be construed to confer upon any Person (other than the parties hereto, their respective successors and assigns permitted hereby (including any Affiliate of any Issuing Bank that issues any Letter of Credit), Participants (to the extent provided in paragraph (c) of this Section), the Arrangers and, to the extent expressly contemplated hereby, the Related Parties of any of the Administrative Agent, any Arranger, any Issuing Bank and any Lender) any legal or equitable right, remedy or claim under or by reason of this Agreement.

(b) (i) Subject to the conditions set forth in paragraph (b)(ii) below, any Lender may assign to one or more Eligible Assignees all or a portion of its rights and obligations under this Agreement (including all or a portion of its Commitment and Loans of any Class) with the prior written consent (such consent not to be unreasonably withheld) of:

(A) the Borrower; provided that no consent of the Borrower shall be required (1) for an assignment to a Lender, an Affiliate of a Lender or an Approved Fund, and (2) if an Event of Default has occurred and is continuing, for any other assignment; provided further that the Borrower shall be deemed to have consented to any such assignment unless it shall object thereto by written notice to the Administrative Agent within five Business Days after having received notice thereof;

(B) the Administrative Agent;

(C) each Issuing Bank, in the case of any assignment of all or a portion of a Revolving Commitment or any Lender's obligations in respect of its LC Exposure; and

(D) the Swingline Lender, in the case of any assignment of all or a portion of a Revolving Commitment or any Lender's obligations in respect of its Swingline Exposure.

(ii) Assignments shall be subject to the following additional conditions:

(A) except in the case of an assignment to a Lender, an Affiliate of a Lender or an Approved Fund or an assignment of the entire remaining amount of the assigning Lender's Commitment or Loans of any Class, the amount of the Commitment or Loans of the assigning Lender subject to each such assignment (determined as of the date the Assignment and Assumption with respect to such assignment is delivered to the

Administrative Agent) shall not be less than $5,000,000 unless each of the Borrower and the Administrative Agent otherwise consents; provided that no such consent of the Borrower shall be required if an Event of Default has occurred and is continuing;

(B) each partial assignment shall be made as an assignment of a proportionate part of all the assigning Lender's rights and obligations under this Agreement; provided that this clause (B) shall not be construed to prohibit the assignment of a proportionate part of all the assigning Lender's rights and obligations in respect of one Class of Commitments or Loans;

(C) the parties to each assignment shall execute and deliver to the Administrative Agent an Assignment and Assumption, together with a processing and recordation fee of $3,500, provided that only one such processing and recordation fee shall be payable in the event of simultaneous assignments from any Lender or its Approved Funds to one or more other Approved Funds of such Lender; and

(D) the assignee, if it shall not be a Lender, shall deliver to the Administrative Agent an Administrative Questionnaire.

(iii) Subject to acceptance and recording thereof pursuant to paragraph (b)(v) of this Section, from and after the effective date specified in each Assignment and Assumption the assignee thereunder shall be a party hereto and, to the extent of the interest assigned by such Assignment and Assumption, have the rights and obligations of a Lender under this Agreement, and the assigning Lender thereunder shall, to the extent of the interest assigned by such Assignment and Assumption, be released from its obligations under this Agreement (and, in the case of an Assignment and Assumption covering all the assigning Lender's rights and obligations under this Agreement, such Lender shall cease to be a party hereto but shall continue to be entitled to the benefits of Sections 2.15, 2.16, 2.17 and 9.03).

(iv) The Administrative Agent shall maintain at one of its offices a copy of each Assignment and Assumption delivered to it and records of the names and addresses of the Lenders, and the Commitment of, and principal and interest amounts of the Loans and LC Disbursements owing to, each Lender pursuant to the terms hereof from time to time (the "Register"). The entries in the Register shall be conclusive, and the Borrower, the Administrative Agent, the Issuing Banks and the Lenders shall treat each Person whose name is recorded in the Register pursuant to the terms hereof as a Lender hereunder for all purposes of this Agreement, notwithstanding notice to the contrary. The Register shall be available for inspection by the Borrower and, as to entries pertaining to it, any Issuing Bank or Lender, at any reasonable time and from time to time upon reasonable prior notice.

(v) Upon its receipt of a duly completed Assignment and Assumption executed by an assigning Lender and an assignee, the assignee's completed Administrative Questionnaire (unless the assignee shall already be a Lender hereunder), the processing and recordation fee referred to in this Section and any written consent to such assignment required by this Section, the Administrative Agent shall accept such Assignment and Assumption and record the information contained therein in the Register. No assignment shall be effective for purposes of this Agreement unless it has been recorded in the Register as provided in this paragraph. Each

assignee, by its execution and delivery of an Assignment and Assumption, shall be deemed to have represented to the assigning Lender and the Administrative Agent that such assignee is an Eligible Assignee.

(c) (i) Any Lender may, without the consent of the Borrower, the Administrative Agent or any Issuing Bank, sell participations to one or more Eligible Assignees ("Participants") in all or a portion of such Lender's rights and obligations under this Agreement (including all or a portion of its Commitments and Loans of any Class); provided that (A) such Lender's obligations under this Agreement shall remain unchanged, (B) such Lender shall remain solely responsible to the other parties hereto for the performance of such obligations and (C) the Borrower, the Administrative Agent, the Issuing Banks and the other Lenders shall continue to deal solely and directly with such Lender in connection with such Lender's rights and obligations under this Agreement. Any agreement or instrument pursuant to which a Lender sells such a participation shall provide that such Lender shall retain the sole right to enforce this Agreement and to approve any amendment, modification or waiver of any provision of this Agreement or any other Loan Document; provided that such agreement or instrument may provide that such Lender will not, without the consent of the Participant, agree to any amendment, modification or waiver described in the first proviso to Section 9.02(b) that directly affects such Participant or requires the approval of all the Lenders. The Borrower agrees that each Participant shall be entitled to the benefits of Sections 2.15, 2.16 and 2.17 (subject to the requirements and limitations therein, including the requirements under Section 2.17(f) (it being understood that the documentation required under Section 2.17(f) shall be delivered to the participating Lender)) to the same extent as if it were a Lender and had acquired its interest by assignment pursuant to paragraph (b) of this Section; provided that such Participant (x) agrees to be subject to the provisions of Sections 2.18 and 2.19 as if it were an assignee under paragraph (b) of this Section and (y) shall not be entitled to receive any greater payment under Section 2.15 or 2.17, with respect to any participation, than its participating Lender would have been entitled to receive, except to the extent such entitlement to receive a greater payment results from a Change in Law that occurs after the Participant acquired the applicable participation. To the extent permitted by Law, each Participant also shall be entitled to the benefits of Section 9.08 as though it were a Lender; provided that such Participant agrees to be subject to Section 2.18(c) as though it were a Lender. Each Lender that sells a participation shall, acting solely for this purpose as an agent of the Borrower, maintain a register on which it enters the name and address of each Participant to which it has sold a participation and the principal amounts (and stated interest) of each such Participant's interest in the Loans or other rights and obligations of such Lender under this Agreement (the "Participant Register"); provided that no Lender shall have any obligation to disclose all or any portion of the Participant Register to any Person (including the identity of any Participant or any information relating to a Participant's interest in any Loans or other rights and obligations under this Agreement) except to the extent that such disclosure is necessary to establish that such Loan or other right or obligation is in registered form under Section 5f.103-1(c) of the United States Treasury Regulations. The entries in the Participant Register shall be conclusive absent manifest error, and such Lender shall treat each Person whose name is recorded in the Participant Register as the owner of such participation for all purposes of this Agreement notwithstanding any notice to the contrary.

(d) Any Lender may at any time pledge or assign a security interest in all or any portion of its rights under this Agreement to secure obligations of such Lender, including

any pledge or assignment to secure obligations to a Federal Reserve Bank, and this Section shall not apply to any such pledge or assignment of a security interest; provided that no such pledge or assignment of a security interest shall release a Lender from any of its obligations hereunder or substitute any such pledgee or assignee for such Lender as a party hereto.

SECTION 9.05. Survival. All covenants, agreements, representations and warranties made by the Loan Parties in the Loan Documents and in the certificates or other instruments delivered in connection with or pursuant to this Agreement or any other Loan Document shall be considered to have been relied upon by the other parties hereto and shall survive the execution and delivery of the Loan Documents and the making of any Loans and issuance of any Letters of Credit, regardless of any investigation made by any such other party or on its behalf and notwithstanding that the Administrative Agent, any Arranger, the Syndication Agent, the Documentation Agent, any Issuing Bank or any Lender may have had notice or knowledge of any Default or incorrect representation or warranty at the time any Loan Document is executed and delivered or any credit is extended hereunder, and shall continue in full force and effect as long as the principal of or any accrued interest on any Loan or any fee or any other amount payable under this Agreement is outstanding and unpaid or any Letter of Credit or LC Exposure is outstanding and so long as the Commitments have not expired or terminated. Notwithstanding the foregoing or anything else to the contrary set forth in this Agreement or any other Loan Document, in the event that, in connection with the refinancing or repayment in full of the credit facilities provided for herein, an Issuing Bank shall have provided to the Administrative Agent a written consent to the release of the Lenders from their obligations hereunder with respect to any Letter of Credit issued by such Issuing Bank (whether as a result of the obligations of the Borrower (and any other account party) in respect of such Letter of Credit having been collateralized in full by a deposit of cash with such Issuing Bank, or being supported by a letter of credit that names such Issuing Bank as the beneficiary thereunder, or otherwise), then from and after such time such Letter of Credit shall cease to be a "Letter of Credit" outstanding hereunder for all purposes of this Agreement and the other Loan Documents, and the Lenders shall be deemed to have no participations in such Letter of Credit, and no obligations with respect thereto, under Section 2.05(d) or 2.05(f). The provisions of Sections 2.15, 2.16, 2.17, 2.18(e) and 9.03 and Article VIII shall survive and remain in full force and effect regardless of the consummation of the transactions contemplated hereby, the repayment of the Loans, the expiration or termination of the Letters of Credit and the Commitments or the termination of this Agreement or any provision hereof.

SECTION 9.06. Counterparts; Integration; Effectiveness. This Agreement may be executed in counterparts (and by different parties hereto on different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. This Agreement and the other Loan Documents constitute the entire contract among the parties relating to the subject matter hereof and supersede any and all previous agreements and understandings, oral or written, relating to the subject matter hereof, including the commitments of the Lenders and, if applicable, their Affiliates under any commitment advices submitted by them (but do not supersede any provisions of the Engagement Letter or the Fee Letter (or any separate letter agreements with respect to fees payable to the Administrative Agent) that do not by the terms of such documents terminate upon the effectiveness of this Agreement, all of which provisions shall remain in full force and effect). Except as provided in Section 4.01, this Agreement shall become effective when it shall have been executed by the

Administrative Agent and the Administrative Agent shall have received counterparts hereof that, when taken together, bear the signatures of each of the other parties hereto, and thereafter shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns. Delivery of an executed counterpart of a signature page of this Agreement by facsimile or other electronic imaging shall be effective as delivery of a manually executed counterpart of this Agreement.

SECTION 9.07. Severability. Any provision of this Agreement held to be invalid, illegal or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity, illegality or unenforceability without affecting the validity, legality and enforceability of the remaining provisions hereof; and the invalidity of a particular provision in a particular jurisdiction shall not invalidate such provision in any other jurisdiction.

SECTION 9.08. Right of Setoff. If an Event of Default shall have occurred and be continuing, each Lender and Issuing Bank, and each Affiliate of any of the foregoing, is hereby authorized at any time and from time to time, to the fullest extent permitted by applicable Law, to set off and apply any and all deposits (general or special, time or demand, provisional or final, in whatever currency) or other amounts at any time held and other obligations (in whatever currency) at any time owing by such Lender or Issuing Bank, or by such an Affiliate, to or for the credit or the account of the Borrower against any of and all the obligations then due of the Borrower now or hereafter existing under this Agreement or any other Loan Document held by such Lender or Issuing Bank, irrespective of whether or not such Lender or Issuing Bank shall have made any demand under this Agreement or any other Loan Document. The rights of each Lender and Issuing Bank, and each Affiliate of any of the foregoing, under this Section are in addition to other rights and remedies (including other rights of setoff) that such Lender, Issuing Bank or Affiliate may have.

SECTION 9.09. Governing Law; Jurisdiction; Consent to Service of Process. (a) This Agreement shall be deemed to be a contract under the Laws of the Commonwealth of Pennsylvania without regard to its conflict of laws principles. Each Standby Letter of Credit issued under this Agreement shall be subject either to the rules of the Uniform Customs and Practice for Documentary Credits, as most recently published by the International Chamber of Commerce (the "ICC") at the time of issuance ("UCP") or the rules of the International Standby Practices (ICC Publication Number 590) ("ISP98"), as determined by the applicable Issuing Bank, and each trade Letter of Credit shall be subject to UCP, and in each case to the extent not inconsistent therewith, the Laws of the Commonwealth of Pennsylvania without regard to its conflict of laws principles.

(b) THE BORROWER IRREVOCABLY AND UNCONDITIONALLY SUBMITS, FOR ITSELF AND ITS PROPERTY, TO THE NONEXCLUSIVE JURISDICTION OF THE COURTS OF THE COMMONWEALTH OF PENNSYLVANIA SITTING IN PHILADELPHIA COUNTY AND OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA, AND ANY APPELLATE COURT FROM ANY THEREOF, IN ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY OTHER LOAN DOCUMENT, OR FOR RECOGNITION OR ENFORCEMENT OF ANY JUDGMENT, AND EACH OF THE PARTIES HERETO IRREVOCABLY AND UNCONDITIONALLY AGREES THAT ALL CLAIMS IN RESPECT

OF ANY SUCH ACTION OR PROCEEDING MAY BE HEARD AND DETERMINED IN SUCH COMMONWEALTH OF PENNSYLVANIA COURT OR, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, IN SUCH FEDERAL COURT. EACH OF THE PARTIES HERETO AGREES THAT A FINAL JUDGMENT IN ANY SUCH ACTION OR PROCEEDING SHALL BE CONCLUSIVE AND MAY BE ENFORCED IN OTHER JURISDICTIONS BY SUIT ON THE JUDGMENT OR IN ANY OTHER MANNER PROVIDED BY LAW. NOTHING IN THIS AGREEMENT OR IN ANY OTHER LOAN DOCUMENT SHALL AFFECT ANY RIGHT THAT THE ADMINISTRATIVE AGENT, ANY LENDER OR ANY ISSUING BANK (OR ANY AFFILIATE THEREOF) MAY OTHERWISE HAVE TO BRING ANY ACTION OR PROCEEDING RELATING TO THIS AGREEMENT OR ANY OTHER LOAN DOCUMENT AGAINST THE BORROWER OR ANY OTHER LOAN PARTY OR ITS PROPERTIES IN THE COURTS OF ANY JURISDICTION.

(c) THE BORROWER IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF VENUE OF ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY OTHER LOAN DOCUMENT IN ANY COURT REFERRED TO IN SECTION 9.09(b) ABOVE. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE DEFENSE OF AN INCONVENIENT FORUM TO THE MAINTENANCE OF SUCH ACTION OR PROCEEDING IN ANY SUCH COURT AND AGREES NOT ASSERT ANY SUCH DEFENSE.

(d) EACH PARTY HERETO IRREVOCABLY CONSENTS TO SERVICE OF PROCESS IN THE MANNER PROVIDED FOR NOTICES IN SECTION 9.01. NOTHING IN THIS AGREEMENT WILL AFFECT THE RIGHT OF ANY PARTY HERETO TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY APPLICABLE LAW.

SECTION 9.10. WAIVER OF JURY TRIAL. EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT, ANY OTHER LOAN DOCUMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH PARTY HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

SECTION 9.11. Headings. Article and Section headings and the Table of Contents used herein are for convenience of reference only, are not part of this Agreement and shall not affect the construction of, or be taken into consideration in interpreting, this Agreement.

SECTION 9.12. Confidentiality. Each of the Administrative Agent, the Lenders and the Issuing Banks agrees to maintain the confidentiality of the Information (as defined below), except that Information may be disclosed (a) to its Related Parties, including accountants, legal counsel and other agents and advisors, it being understood that the Persons to whom such disclosure is made will be informed of the confidential nature of such Information and instructed to keep such Information confidential, (b) to the extent requested by any regulatory authority purporting to have jurisdiction over it (including any self-regulatory authority, such as the National Association of Insurance Commissioners), (c) to the extent required by applicable Law or by any subpoena or similar legal process, (d) to any other party to this Agreement, (e) in connection with the exercise of any remedies under this Agreement or any other Loan Document or any suit, action or proceeding relating to this Agreement or any other Loan Document or the enforcement of rights hereunder or thereunder, (f) subject to an agreement containing confidentiality undertakings substantially similar to those of this Section, to (i) any assignee of or Participant in, or any prospective assignee of or Participant in, any of its rights or obligations under this Agreement or (ii) any actual or prospective counterparty (or its Related Parties) to any swap or derivative transaction relating to the Borrower or any Subsidiary and its obligations, (g) with the consent of the Borrower or (h) to the extent such Information (i) becomes publicly available other than as a result of a breach of this Section or (ii) becomes available to the Administrative Agent, any Lender, any Issuing Bank or any Affiliate of any of the foregoing on a nonconfidential basis from a source other than the Borrower. For purposes of this Section, "Information" means all information received from the Borrower relating to the Borrower or any Subsidiary or its or their businesses, other than any such information that is available to the Administrative Agent, any Lender or any Issuing Bank on a nonconfidential basis prior to disclosure by the Borrower. Any Person required to maintain the confidentiality of Information as provided in this Section shall be considered to have complied with its obligation to do so if such Person has exercised the same degree of care to maintain the confidentiality of such Information as such Person would accord to its own confidential information.

SECTION 9.13. Interest Rate Limitation. Notwithstanding anything herein to the contrary, if at any time the interest rate applicable to any Loan, together with all fees, charges and other amounts that are treated as interest on such Loan under applicable Law (collectively the "Charges"), shall exceed the maximum lawful rate (the "Maximum Rate") that may be contracted for, charged, taken, received or reserved by the Lender holding such Loan in accordance with applicable Law, the rate of interest payable in respect of such Loan hereunder, together with all Charges payable in respect thereof, shall be limited to the Maximum Rate and, to the extent lawful, the interest and Charges that would have been payable in respect of such Loan but were not payable as a result of the operation of this Section shall be cumulated and the interest and Charges payable to such Lender in respect of other Loans or periods shall be increased (but not above the Maximum Rate therefor) until such cumulated amount, together with interest thereon at the Federal Funds Effective Rate to the date of repayment, shall have been received by such Lender.

SECTION 9.14. Release of Liens and Guarantees. (a) A Subsidiary Loan Party shall automatically be released from its obligations under the Loan Documents, and all security interests created by the Security Documents in Collateral owned by such Subsidiary Loan Party shall be automatically released, upon the consummation of any transaction permitted by this Agreement as a result of which such Subsidiary Loan Party ceases to be a Subsidiary; provided that, if so required by this Agreement, the Required Lenders shall have consented to such transaction and the terms of such consent shall not have provided otherwise. Upon any sale or other transfer by any Loan Party (other than to the Borrower or any Subsidiary) of any Collateral in a transaction permitted under this Agreement, or upon the effectiveness of any written consent to the release of the security interest created under any Security Document in any Collateral pursuant to Section 9.02, the security interests in such Collateral created by the Security Documents shall be automatically released.

(b) The Guarantees made in the Collateral Agreement and the security interests granted in the Collateral Agreement shall terminate and be released to the extent provided in, and subject to the terms of, Section 7.12(a) of the Collateral Agreement.

(c) In connection with any termination or release pursuant to this Section, the Administrative Agent shall execute and deliver to any Loan Party, at such Loan Party's expense, all documents that such Loan Party shall reasonably request to evidence such termination or release. Any execution and delivery of documents pursuant to this Section shall be without recourse to or warranty by the Administrative Agent.

SECTION 9.15. USA PATRIOT Act Notice. Each Lender and the Administrative Agent (for itself and not on behalf of any Lender) hereby notifies each Loan Party that pursuant to the requirements of the USA PATRIOT Act it is required to obtain, verify and record information that identifies such Loan Party, which information includes the name and address of such Loan Party and other information that will allow such Lender or the Administrative Agent, as applicable, to identify such Loan Party in accordance with such Act.

SECTION 9.16. No Fiduciary Relationship. The Borrower, on behalf of itself and the Subsidiaries, agrees that in connection with all aspects of the transactions contemplated hereby and any communications in connection herewith or therewith, the Borrower, the Subsidiaries and their Affiliates, on the one hand, and the Administrative Agent, the Lenders, the Issuing Banks and their Affiliates, on the other hand, will have a business relationship that does not create, by implication or otherwise, any fiduciary duty on the part of the Administrative Agent, the Lenders or their Affiliates, and no such duty will be deemed to have arisen in connection with any such transactions or communications.

SECTION 9.17. Acknowledgement and Consent to Bail-In of EEA Financial Institutions. Notwithstanding anything to the contrary in any Loan Document or in any other agreement, arrangement or understanding among any such parties, each party hereto acknowledges that any liability of any EEA Financial Institution arising under any Loan Document, to the extent such liability is unsecured, may be subject to the write-down and conversion powers of an EEA Resolution Authority and agrees and consents to, and acknowledges and agrees to be bound by:

(a) the application of any Write-Down and Conversion Powers by an EEA Resolution Authority to any such liabilities arising hereunder which may be payable to it by any party hereto that is an EEA Financial Institution; and

(b) the effects of any Bail-In Action on any such liability, including, if applicable:

(1) a reduction in full or in part or cancellation of any such liability;

(2) a conversion of all, or a portion of, such liability into shares or other instruments of ownership in such EEA Financial Institution, its parent undertaking, or a bridge institution that may be issued to it or otherwise conferred on it, and that such shares or other instruments of ownership will be accepted by it in lieu of any rights with respect to any such liability under this Agreement or any other Loan Document; or

(3) the variation of the terms of such liability in connection with the exercise of the write-down and conversion powers of any EEA Resolution Authority.

[Signature pages follow]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their respective authorized officers as of the day and year first above written.

BENTLEY SYSTEMS, INCORPORATED,

by

/s/ David Hollister
Name: David Hollister
Title: Chief Financial Officer

PNC BANK, NATIONAL ASSOCIATION,
individually and as Administrative Agent,

by

/s/ Domenic D'Ginto
Name: Domenic D'Ginto
Title: Senior Vice President

[Signature Pages of Lenders on file with the Administrative Agent]

Schedule 2.01

Commitments

Lender	Revolving Commitment
PNC Bank, National Association	$100,000,000
Citizens Bank, N.A.	$ 75,000,000
Wells Fargo Capital Finance, LLC	$ 75,000,000
Bank of America, N.A.	$ 60,000,000
TD Bank, N.A.	$ 60,000,000
HSBC Bank USA, N.A.	$ 50,000,000
JPMorgan Chase Bank, N.A.	$ 30,000,000
Manufacturers and Traders Trust Company	$ 25,000,000
Wilmington Savings Fund Society, FSB	$ 25,000,000
Total	**$500,000,000.00**

Exhibit 10.2

Confidential
Execution Version

BENTLEY SYSTEMS, INCORPORATED

Common Stock

PURCHASE AGREEMENT

ARTICLE I.
INTRODUCTORY.

THIS COMMON STOCK PURCHASE AGREEMENT (this "**Agreement**"), is made as of the 23rd day of September, 2016 by and among Bentley Systems, Incorporated, a Delaware corporation (the "**Company**"), Siemens AG, a stock corporation (Aktiengesellschaft) under the laws of Germany (the "**Purchaser**") and the persons listed as "Key Holders" on the signature pages to this Agreement and any person or entity becoming a "Key Holder" after the date hereof in accordance with the terms of this Agreement (each a "**Key Holder**", and each of the Key Holders, the Company and Purchaser, a "**Party**").

Purchaser (directly or through one or more of its Affiliates) and the Company will agree to strategic collaboration and alliance opportunities for the purpose of enabling digital enterprises and creating new offerings for customers of the Purchaser and the Company, all to be set forth in a strategic collaboration agreement (the "**Strategic Collaboration Agreement**"), between the Company and an Affiliate of the Purchaser (the **"Purchaser Collaboration Partner"**).

In addition to the relationship established pursuant to the Strategic Collaboration Agreement, the Purchaser desires that, and the Company is willing to, (i) issue and sell to the Purchaser such number of shares of the Company's Class B Non-Voting Common Stock, par value $0.01 per share (the "**Class B Common Stock**"), as have an aggregate purchase price equal to the Maximum Amount (as defined below) in a series of transactions, and (ii) grant Purchaser certain additional rights, all as set forth in, and subject to the terms and conditions of, this Agreement. Purchaser shall purchase such shares of Class B Common Stock as provided herein.

Each Key Holder is the beneficial owner of capital stock of the Company and, in order to induce the Purchaser and the Company to enter into this Agreement, each Key Holder agrees with Purchaser that it will provide Purchaser with certain additional rights with respect to capital stock held by such Key Holder, all as set forth in, and subject to the terms and conditions of, this Agreement.

For the purposes of this Agreement, "**Maximum Amount**" means $100,000,000 upon the execution of this Agreement; provided that upon the earlier to occur of (i) the fifth anniversary of this Agreement and (ii) the acquisition by the Purchaser of $100,000,000 worth of shares of Class B Common Stock (as measured by the actual cash paid by the Purchaser hereunder), the "Maximum Amount" shall be automatically increased by $20,000,000 on each subsequent anniversary of the Agreement following such earlier occurrence, in each case, so long as the Strategic Collaboration Agreement remains in effect on each such subsequent anniversary. For the avoidance of doubt, the Maximum Amount shall exclude any purchases by the Purchaser pursuant to Article XII.

ARTICLE II.
OFFERS; PURCHASE, SALE AND DELIVERY OF CLASS B COMMON STOCK.

Section 2.01 *Initial Offer and Closing*.

(a) Promptly (but in any event within five (5) business days) following the date hereof, the Company shall commence a share repurchase offer (the "**Initial Offer**"), pursuant to which the Company shall offer to repurchase shares of Class B Common Stock from existing stockholders of the Company at a price of $10.48 per share (the "**Initial Offer Price**"). The Parties agree that the Initial Offer Price is equal to the current FMV (as defined below). The Initial Offer shall be held open by the Company for no less than twenty (20) business days (such twentieth business day being the "**Expiration Date**"). Subject to the terms of this Agreement, the Company may extend the Expiration Date of the Initial Offer and terminate, withdraw or otherwise amend or modify the Initial Offer in its sole discretion.

(b) Promptly (but in any event within five (5) business days) following the Expiration Date, the Company shall provide a written report (the "**Purchase Report**") to the Purchaser setting forth the total number of shares of Class B Common Stock to be sold to Purchaser by the Company and pursuant to any Direct Sales (as defined below) by any Selling Stockholders (as defined below) (collectively, the "**Initial Shares**"). The Initial Shares shall include and consist of all of the following amounts of shares of Class B Common Stock and the Purchase Report shall include a summary thereof (including the names of the record and beneficial owners thereof): (a) the number of shares of Class B Common Stock validly tendered, not withdrawn and accepted for payment by the Company (the "**Tendered Shares**"); (b) the number of Direct Shares offered for sale by the Selling Stockholders in accordance with Section 2.03 hereof, if any (as to which the Company shall waive any applicable transfer restrictions); and (c) the number of shares of Class B Common Stock purchased by the Company from employee stockholders pursuant to the Company's Equity Incentive Plans during the one hundred and eighty (180) day period preceding the Expiration Date that the Company elects to sell to the Purchaser hereunder (collectively, "**Additional Shares**"); provided that, to the extent the aggregate purchase price for the Tendered Shares and Direct Shares to be sold at the Initial Closing is less than $20 million, the Company shall sell to the Purchaser the lesser of (1) all Additional Shares actually purchased by the Company from employee stockholders pursuant to the Company's Equity Incentive Plans during the one hundred and eighty (180) day period preceding the Expiration Date and (2) the number of Additional Shares necessary to cause the aggregate purchase price for all the Initial Shares to equal $20 million. The Company's delivery of the Purchase Report shall create a binding obligation hereunder with respect to the Initial Shares (x) on the Company to sell the Tendered Shares and the Additional Shares, if any, to the Purchaser at the Initial Closing, and (y) on the Purchaser to purchase such Tendered Shares and Additional Shares, if any, from the Company at the Initial Closing and to accept the offer by each Selling Stockholder to purchase the Direct Shares, on and subject to the terms of this Agreement and each Stock Purchase Agreement, as applicable, at the Initial Closing.

(c) No later than five (5) business days following the delivery of the Purchase Report (such date, the "**Closing Date**"), and subject to the fulfillment of the conditions set forth in Articles IV and V hereof, the Purchaser shall purchase the Tendered Shares and Additional Shares, if any, from the Company and the Direct Shares, if any, from the Selling Stockholders.

The aggregate purchase price for the Initial Shares (the "**Initial Purchase Price**") shall be determined by multiplying the number of Initial Shares by the Initial Offer Price, and shall be paid by wire transfer of immediately available funds to an account designated by the Company in the Purchase Report, it being understood and agreed that the Company shall act as paying agent for each Selling Stockholder and in no circumstances shall Purchaser have any obligation to make any payment to any person or entity other than the Company (the initial issuance and sale of the Initial Shares being referred to as the "**Initial Closing**"). At the Initial Closing, the Company shall deliver a stock certificate evidencing the Purchaser's ownership of the Initial Shares. At the Initial Closing, all previously-issued stock certificates representing the Initial Shares sold at the Initial Closing shall be cancelled by the Company and Purchaser shall be registered on the books and records of the Company as the record holder of the Initial Shares.

Section 2.02 *Subsequent Offers and Additional Closings*. To the extent the aggregate of the Initial Purchase Price and, following any Additional Closing (as defined below), each Subsequent Purchase Price (as defined below) paid by the Purchaser hereunder and for any Direct Shares sold in accordance with Section 2.03 is less than the Maximum Amount, the provisions of this Section 2.02 shall apply.

(a) Subject to Section 2.02(f), after the Initial Closing and, if applicable, each Additional Closing Date, the Company shall commence (no more than twice per calendar year beginning in 2017 and promptly after the determination of the applicable FMV as provided below), and shall provide at least ten (10) business days' prior written notice to the Purchaser of the Company's commencement of, a Class B Common Stock share repurchase offer from any or all of its then-existing Company stockholders (other than the Purchaser) and shall sell to the Purchaser, on the terms and subject to the conditions contained in this Agreement (each such subsequent share repurchase offer a "**Subsequent Offer**" and, together with the Initial Offer, each an "**Offer**"), the Subsequent Shares (as defined below).

(b) No more than twice per calendar year beginning in 2017 (i) the Company's board of directors (the "**Board**") shall adopt a new fair market value of a single share of the Company's Class B Common Stock, which shall be the fair market value utilized for financial reporting purposes and for other transactions involving the Company's Class B Common Stock or comparable securities (the "**FMV**") and (ii) the Company shall commence a Subsequent Offer pursuant to which it shall offer to repurchase shares of Class B Common Stock from any or all of its then-existing stockholders (other than the Purchaser) at a price per share equal to such FMV (the applicable "**Subsequent Offer Price**" and together with the Initial Offer Price, each an "**Offer Price**"). At least ten (10) business days prior to commencement of each such Subsequent Offer, the Company shall deliver to the Purchaser a report (the "**FMV Report**") setting forth in reasonable detail the FMV and reasonable supporting materials, assumptions, comparable, analysis and calculations therefor (including copies of any financial statements, projections or other materials referenced in or made a part of such FMV Report). Each FMV Report shall be prepared by CBIZ, LLC (or such other independent third party appraiser approved by the Purchaser, such approval not to be unreasonably withheld, conditioned or delayed) using the same or substantially the same methodologies and similar parameters and approaches to those utilized in the FMV Report, dated as of June 30, 2016, that was used to determine the Initial Offer Price, subject, in all cases, to reasonable variations arising from or related to the passage of time and changing business conditions (the "**Acceptable Methodologies**"). If the FMV adopted

by the Board is different from the fair market value of Class B Common Stock set forth in the FMV Report, the Company shall also deliver to Purchaser a reconciliation or explanation setting forth in reasonable detail the reasons for the difference. The parties agree that the FMV Reports prepared by CBIZ, LLC and included in the Data Room as of the date hereof have been prepared using Acceptable Methodologies and constitute FMV Reports hereunder. The Purchaser shall have ten (10) business days following the delivery of the FMV Report to provide the Company with notice of an FMV Deviation (as defined below). If the Purchaser fails to deliver such notice in a timely fashion, the Purchaser shall be obligated to purchase the Subsequent Shares (as defined below) designated in the applicable Subsequent Purchase Report (as defined below) for the Subsequent Purchase Price (as defined below); provided that, notwithstanding anything to the contrary, if (i) the FMV adopted by the Board is different from the fair market value of Class B Common Stock set forth in the applicable FMV Report, (ii) the applicable FMV Report was not prepared in accordance with Acceptable Methodologies, (iii) the applicable FMV and Subsequent Offer Price with respect to such Subsequent Shares is greater than 10% higher than the FMV and Offer Price utilized in the then most recent prior Closing or (iv) the applicable FMV and Subsequent Offer Price with respect to such Subsequent Shares is greater than 20% higher than the FMV and Offer Price utilized in the then second most recent prior Closing (if any), then in any such case (each, a "**FMV Deviation**"), the Purchaser shall not be bound to purchase any such Subsequent Shares and instead shall have (x) the option, at its sole election and discretion, to purchase such Subsequent Shares at the FMV that gave rise to the FMV Deviation (it being understood and agreed, for the avoidance of doubt, that the Company shall still be bound to sell to the Purchaser, and the Purchaser shall be bound to buy from the Company, such Subsequent Shares if Purchaser so elects), (y) an opportunity to discuss the reasons for the FMV Deviation with the Company, and (z) reasonable access to the documentation and other supporting materials informing the FMV, in each case, as is reasonably necessary in order for the parties to reach an understanding with respect to the reasons for the FMV Deviation. For the avoidance of doubt, the Purchaser's option set forth in clause (x), above, shall expire (with respect to the applicable Subsequent Offer only) if not exercised by the tenth (10th) day following the Purchaser's notification of an FMV Deviation, unless extended by the Company in its sole discretion. If the Purchaser does not exercise the option set forth in clause (x) above in a timely fashion with respect to a particular Subsequent Offer, the Company shall not be obligated to commence such Subsequent Offer, and the Purchaser shall accordingly have irrevocably waived any right to acquire the applicable Subsequent Shares solely with respect to such Subsequent Offer and contemplated Subsequent Closing; provided that, for the avoidance of doubt, the failure to exercise such option with respect to a particular FMV Deviation, Subsequent Offer and contemplated Subsequent Closing shall not constitute a rejection of any other opportunities to purchase any Subsequent Shares at a different Subsequent Closing under this Agreement and the Purchaser's rights and the Company's obligations in clauses (a) and (b) of this Section 2.02 shall continue with respect to future Subsequent Offers.

(c) Each Subsequent Offer shall be held open by the Company for no less than twenty (20) business days (such twentieth business day being the "**Subsequent Expiration Date**"). Subject to the terms of this Agreement, the Company may extend any Subsequent Expiration Date of any Subsequent Offer in its sole discretion and terminate, withdraw or otherwise amend or modify the Subsequent Offer in its sole discretion.

(d) Promptly following each Subsequent Expiration Date with respect to a Subsequent Offer, the Company shall provide a written report (a "**Subsequent Purchase Report**") to the Purchaser setting forth the total number of shares of Class B Common Stock to be sold to Purchaser by the Company and pursuant to any Direct Sales at the applicable Additional Closing (as defined below) (collectively, the "**Subsequent Shares**"). The Subsequent Shares shall include and consist of all of the following amounts of shares of Class B Common Stock and the Subsequent Purchase Report shall include a summary thereof (including the names of the record and beneficial owners thereof): (a) the number of Tendered Shares with respect to such Subsequent Offer (the "**Subsequent Tendered Shares**"); (b) the number of Direct Shares offered for sale by the Selling Stockholders with respect to such Subsequent Offer in accordance with Section 2.03 hereof, if any (as to which the Company shall waive any applicable transfer restrictions); and (c) the number of shares of Class B Common Stock actually purchased by the Company from employee stockholders pursuant to the Company's Equity Incentive Plans during the period beginning on the date the last Subsequent Purchase Report was delivered hereunder (or, in the case of the Initial Offer, the Purchase Report) and ending on the applicable Subsequent Expiration Date (the "**Subsequent Additional Shares**"). The Company's delivery of a Subsequent Purchase Report shall create a binding obligation hereunder with respect to the applicable Subsequent Shares (x) on the Company to sell the Subsequent Tendered Shares and the Subsequent Additional Shares to the Purchaser at the applicable Additional Closing and (y) on the Purchaser to purchase such Subsequent Shares from the Company at such Additional Closing and to accept the offer by each Selling Stockholder to purchase the Direct Shares on and subject to the terms of this Agreement and each applicable Stock Purchase Agreement, at the applicable Additional Closing.

(e) If the Purchaser is bound to do so, no later than ten (10) business days following the delivery of the Subsequent Purchase Report (each such date, an "**Additional Closing Date**"), and subject to the fulfillment of the conditions set forth in Articles IV and V hereof (and any applicable conditions in any Stock Purchase Agreement), the Purchaser shall purchase the Subsequent Tendered Shares and the Subsequent Additional Shares, if any, from the Company and the Direct Shares, if any, from the Selling Stockholders. The aggregate purchase price for the Subsequent Shares (the "**Subsequent Purchase Price**") shall be determined by multiplying the number of Subsequent Shares by the Subsequent Offer Price, and shall be paid by wire transfer of immediately available funds to an account designated by the Company, which shall act as paying agent for each Selling Stockholder (it being understood and agreed that in no circumstances shall Purchaser have any obligation to make any payment to any person or entity other than the Company) (each such issuance and sale of the Subsequent Tendered Shares and Subsequent Additional Shares and each sale of any Direct Shares being referred to as, an "**Additional Closing**" and, collectively with the Initial Closing, the "**Closings**" and each individually a "**Closing**"). At each Additional Closing, the Company shall deliver a stock certificate evidencing the Purchaser's ownership of the Subsequent Shares. At each Additional Closing, all previously-issued stock certificates representing the Subsequent Shares sold at such Additional Closing shall be cancelled by the Company and Purchaser shall be registered on the books and records of the Company as the record holder of the Subsequent Shares.

(f) The Company and the Purchaser shall continue to follow the procedures set forth in Section 2.02 until such time as this Agreement expires or is terminated or the Purchaser has paid the Maximum Amount hereunder (including for any Direct Shares), whichever occurs first.

Following the date on which the Purchaser has paid the Maximum Amount (including for any Direct Shares), the Purchaser shall no longer be obligated to buy any further shares of Class B Common Stock hereunder or from any Selling Stockholder pursuant to a Stock Purchase Agreement (or, for the avoidance of doubt, this Agreement). For the avoidance of doubt, the provisions of this Article II shall automatically terminate and be of no further force or effect upon the effectiveness of a registration statement and/or registration of shares, as applicable, in connection with an underwritten public offering relating to a Registration Event (as defined below) (an "**Effective Registration**"). In addition, if the Board of Directors of the Company, acting on advice of outside counsel, reasonably determines in good faith that commencing a new Subsequent Offer could materially impact, or would reasonably be expected to be materially impacted by, a Registration Event expected to be consummated by the Company in the succeeding 9-month period, the Company may elect to suspend the provisions of this Article II by providing written notice of such election to the Purchaser, and such suspension shall remain in effect until such time that the Company notifies the Purchaser that the Company is no longer actively employing good faith commercially reasonable efforts to cause an Effective Registration. For the purposes of this Agreement, "**Registration Event**" means such time subsequent to the date hereof that the Company first files a registration statement (including a draft registration statement confidentially submitted to the Securities Exchange Commission) with respect to the sale of its common stock to the public under the Act and/or registers its shares under Section 12 of the Securities Exchange Act of 1934, as amended.

Section 2.03 *Direct Shares*. To the extent that any stockholder of the Company (a "**Selling Stockholder**") does not participate in the Initial Offer or a Subsequent Offer for any reasonable reason and wishes to sell Class B Common Stock ("**Direct Shares**") directly to Purchaser at the Initial Offer Price or Subsequent Offer Price per share (as applicable) at an applicable Closing (a "**Direct Sale**"), then the Company shall advise the Purchaser of the proposed sale of such Direct Shares in accordance with the procedures set forth in this Article II, and the provisions of Article XIX shall apply; provided that Purchaser shall purchase all of such Direct Shares, subject to the Maximum Amount and the terms of this Agreement, directly from such Selling Stockholder pursuant to an agreement in the form of the Stock Purchase Agreement attached as Exhibit A hereto (each, a "**Stock Purchase Agreement**"). The purchase price paid by Purchaser for any Direct Shares acquired shall be specified in the Purchase Report and each Subsequent Purchase Report, as applicable, and shall apply toward the Maximum Amount, and shall be paid directly to the Company as paying agent.

Section 2.04 *Future Share Repurchase Programs*. Notwithstanding anything to the contrary contained herein, prior to an Effective Registration, if the Company wishes to initiate any share repurchase program or other program involving a third party purchaser similar to the actions contemplated to be taken by the Company under this Article II, the Company shall notify the Purchaser of its intention and the Purchaser shall have the exclusive option to assume the role of purchaser in such program, which option must be exercised no later than the 20th business day following Purchaser's receipt of the Company's notice, it being understood and agreed that during such 20 business day period, the Company shall be precluded from offering to, or engaging, any other third party to take such role in any such program. The Company agrees to engage with Purchaser in good faith discussions regarding the potential extension or renewal of Article II or any similar share repurchase program beyond the Maximum Amount.

Section 2.05 *Top-Up Shares*. If at the time of an Effective Registration relating to an initial public offering by the Company of its Class B Common Stock (an "**IPO**") the aggregate purchase price paid by the Purchaser hereunder for shares of Class B Common Stock is less than the Maximum Amount (as such amount may be increased from time to time) (such deficit, a "**Shortfall**"), then concurrently with the closing of the IPO (the "**IPO Closing**"), the Company shall, directly or indirectly, cause the sale to the Purchaser of, and the Purchaser shall purchase, the Top-Up Shares (as defined below), at a price per share equal to the price per share that the Class B Common Stock is sold to the public in the IPO at the IPO Closing (the "**IPO Price**"). The "**Top-Up Shares**" means a number of shares of Class B Common Stock determined by dividing the Shortfall by the IPO Price.

ARTICLE III.
CONDITIONS OF THE OBLIGATIONS OF THE PURCHASER

The obligation of the Purchaser to purchase and pay for the Class B Common Stock (whether Initial Shares, Subsequent Shares or otherwise, and whether under this Agreement or any Stock Purchase Agreement) at the Initial Closing and each Additional Closing (if applicable) are subject to the satisfaction as of each such Closing of the following conditions:

Section 3.01 The representations and warranties of the Company set forth in Article V hereof shall be true and correct (for these purposes, disregarding any qualification therein to "Material Adverse Effect", "material adverse effect", "material", "materially" or other terms of a similar nature and related qualifiers) in all material respects (except for the representations and warranties in Sections 5.01, 5.02, 5.03, 5.04, 5.07(1), 5.08(1), 5.10, 5.11, 5.13 and 5.14, which shall be true and correct in all respects) and the representations of each Key Holder set forth in Article VII shall be true and correct in all respects, in each case on and as of the Closing Date and each Additional Closing Date (as applicable) (except those representations and warranties that address matters only as of a specified date, the accuracy of which shall be determined as of that specified date in all material respects), and all of the respective covenants, agreements, obligations and conditions of the Company and Key Holders required to be performed or complied with on or prior to the applicable Closing shall have been performed or complied with in all material respects at or prior to the applicable Closing.

Section 3.02 An authorized officer of the Company shall deliver to the Purchaser at each applicable Closing a certificate certifying that the conditions specified in this Article III have been fulfilled and satisfied.

Section 3.03 All authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Offered Shares pursuant to this Agreement shall be obtained and effective as of each applicable Closing.

Section 3.04 No statute, rule or regulation shall have been enacted or promulgated by any governmental entity which prohibits the consummation of the transactions contemplated by this Agreement, and there shall be no order or injunction of a court of competent jurisdiction in effect preventing the consummation of the transactions contemplated by this Agreement.

Section 3.05 The Company shall have delivered to the Purchaser, whether by uploading to the Data Room or otherwise, a capitalization table updating the information set forth in Section 5.02 as of the most recent practicable date preceding the Closing Date and each Additional Closing Date (as applicable) (but without giving effect to the applicable Closing).

Section 3.06 The Secretary of the Company shall have delivered to the Purchaser at each applicable Closing a certificate certifying (a) the then current Bylaws of the Company, as may be amended and restated from time to time, (b) the then current Certificate of Incorporation of the Company, as may be amended and restated from time to time, (c) resolutions of the Board of the Company, and if required by applicable law, the stockholders of the Company, approving this Agreement, the transactions contemplated hereby and the documents related hereto and (d) that the Company is in good standing in the State of Delaware.

Section 3.07 No action, suit or proceeding shall be pending or threatened before any governmental entity wherein an unfavorable injunction, judgment, order, decree, ruling or charge would reasonably be expected to prevent consummation of any of the transactions contemplated hereby.

Section 3.08 With respect to the Initial Closing and each Additional Closing, the Company shall have made offers to repurchase shares of Class B Common Stock from stockholders of the Company holding such number of shares that, if accepted, would afford the Purchaser the ability to cumulatively purchase the Maximum Amount.

Section 3.09 With respect to each Additional Closing, no FMV Deviation shall have occurred that the Purchaser has not then waived in writing.

Section 3.10 Solely with respect to the sale of any Direct Shares at any Closing, a Stock Purchase Agreement with respect thereto shall have been duly executed and delivered by any Selling Stockholders with respect to such Direct Shares and be in full force and effect with any and all conditions thereunder satisfied (or validly waived) (it being understood and agreed that the failure of the condition set forth in this Section 3.10 shall only relieve the Purchaser of its obligation to purchase Direct Shares from the Selling Stockholder who has failed to deliver a Stock Purchase Agreement or satisfied the conditions thereunder, and shall not relieve the Purchaser from its obligation to purchase the Initial Shares or Subsequent Shares, as applicable, at such Closing).

Section 3.11 The Company shall not have experienced any Material Adverse Effect (as defined below).

ARTICLE IV.
CONDITIONS OF THE OBLIGATIONS OF THE COMPANY

The obligations of the Company to sell Class B Common Stock on the Initial Closing and on any Additional Closing Date (if applicable) are subject to the satisfaction on or prior to each such Closing of the following conditions:

Section 4.01 The representations and warranties of the Purchaser set forth in Article VI hereof shall be true and correct in all material respects at and as of the Closing Date and each

Additional Closing Date (as applicable) (except those representations and warranties that address matters only as of a specified date, the accuracy of which shall be determined as of that specified date in all respects), and all covenants, agreements, obligations and conditions of the Purchaser required to be performed at or prior to the applicable Closing shall have been performed in all material respects at or prior to the applicable Closing.

Section 4.02 An authorized officer of the Purchaser shall deliver to the Company at each applicable Closing a certificate certifying that the conditions specified in this Article IV have been fulfilled and satisfied.

Section 4.03 All authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Offered Shares pursuant to this Agreement shall be obtained and effective as of each applicable Closing.

Section 4.04 No statute, rule or regulation shall have been enacted or promulgated by any governmental entity which prohibits the consummation of the transactions contemplated by this Agreement, and there shall be no order or injunction of a court of competent jurisdiction in effect preventing the consummation of the transactions contemplated by this Agreement.

Section 4.05 No action, suit or proceeding shall be pending or threatened before any governmental entity wherein an unfavorable injunction, judgment, order, decree, ruling or charge would reasonably be expected to prevent consummation of any of the transactions contemplated hereby.

Section 4.06 The Purchaser shall have delivered the Initial Purchase Price or Subsequent Purchase Price, as applicable, in accordance with the Company's payment instructions.

ARTICLE V.
REPRESENTATIONS AND WARRANTIES OF THE COMPANY

Except as set forth on the Disclosure Schedules delivered by the Company to the Purchaser (which Disclosure Schedules shall be arranged in sections and subsections corresponding to the numbered and lettered sections and subsections contained in this Article V, and the disclosures in any section or subsection of the Disclosure Schedules shall qualify other sections and subsections of this Article V only to the extent it is reasonably apparent on its face that the disclosure is applicable to such other sections and subsections), updated from the date of the last applicable Closing solely as permitted below (the "**Disclosure Schedules**"), the Company hereby represents and warrants to the Purchaser the following representations are true and correct as of the date hereof and as of the date of each applicable Closing; provided that the Company shall have the right to deliver an updated Disclosure Schedule to the Purchaser as of the date of any Closing subsequent to the Initial Closing to disclose any actions first taken by the Company or any facts or circumstances first arising subsequent to the immediately prior Closing ("**Updated Schedules**"), which shall be deemed to qualify the representations and warranties to which the Updated Schedules relate for the purposes of this Agreement (it being understood that the representations and warranties made by the Company pursuant to this Article V in respect of

a particular Closing shall be qualified solely by the Disclosure Schedules, including Updated Schedules, delivered in respect of such Closing and not by any Disclosure Schedules delivered in connection with any subsequent Closing). If in the absence of the Updated Schedules the condition set forth in Section 3.01 would not be met, the Purchaser may elect not to consummate the applicable Closing by delivering written notice of such election to the Company within five (5) business days of its receipt of the Updated Schedules. If such timely election is not delivered to the Company, the Purchaser shall have waived any right not to consummate the applicable Closing on the basis of any matters set forth in the Updated Schedules.

For purposes of these representations and warranties (other than those in Sections 5.02, 5.03, 5.04, and 5.06), the term the "**Company**" shall include any subsidiaries of the Company, unless otherwise noted herein.

Section 5.01 *Good Standing of the Company; Subsidiaries*. The Company is a corporation duly incorporated and is existing and in good standing under the laws of the State of Delaware, with corporate power and authority to own its properties and conduct its business as presently conducted; and the Company is duly qualified to do business as a foreign corporation in good standing in all other jurisdictions in which its ownership or lease of property or the conduct of its business requires such qualification, except where the failure to be duly qualified or in good standing in such other jurisdictions would not, individually or in the aggregate, result in a material adverse effect on the condition (financial or otherwise), results of operations, business, properties or prospects of the Company and its subsidiaries taken as a whole ("**Material Adverse Effect**"). Each subsidiary of the Company has been duly incorporated, organized or formed, as applicable, and is existing and in good standing under the laws of the jurisdiction of its incorporation, organization or formation, as applicable, with corporate, limited liability company, as applicable, and/or other similar power and authority to own its properties and conduct its business as presently conducted; and each subsidiary of the Company is duly qualified to do business as a foreign corporation or other entity, as applicable, in good standing in all other jurisdictions in which its ownership or lease of property or the conduct of its business requires such qualification in each case, except where the failure to be so qualified or in good standing in such other jurisdictions as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

Section 5.02 *Capitalization*.

(a) The shares of Class B Common Stock offered hereunder (including any Tendered Shares, Subsequent Tendered Shares, Additional Shares and any Subsequent Additional Shares) together with any Direct Shares sold by the Selling Stockholders (the "**Offered Shares**"), have been duly authorized and, when the Offered Shares have been delivered and paid for in accordance with this Agreement or any Stock Purchase Agreement with a Selling Stockholder on the Initial Closing Date and each Additional Closing Date (as applicable), such Class B Common Stock will be validly issued, fully paid and nonassessable. As of the date hereof, the authorized capital stock of the Company consists of (i) 320,000,000 shares of Class A Voting Common Stock, par value $0.01 per share, of which 11,601,757 shares are issued and outstanding, and (ii) 300,000,000 shares of Class B Common, of which 109,923,520 shares are issued and outstanding (including 77,500 shares of restricted stock (the "**Restricted Stock**")). As of the date hereof, there are (1) 9,607,667 shares of Class B Common Stock subject to outstanding options (the

"**Options**"), (2) 128,864 restricted Class B Common Stock units (the "**RSUs**") and (3) 19,187,777 phantom shares of Class B Common Stock allocated to participants in the Company's non-qualified deferred compensation plans. All issued and outstanding shares have been duly authorized and validly issued and are fully paid and nonassessable, and all shares subject to Options or RSUs will be, when issued, duly authorized, validly issued fully paid and nonassessable.

(b) Except for the rights of Purchaser pursuant hereto or as set forth in the Stockholders Agreement (as defined below), the Company's Financial Statements reflect all of the outstanding (as of the date thereof) options, warrants, rights (including conversion or preemptive rights and rights of first refusal or similar rights) or agreements to purchase or acquire from the Company any shares of Class A Common Stock or Class B Common Stock, or any securities convertible into or exchangeable for shares of Class A Common Stock or Class B Common Stock.

The Company has obtained valid waivers of any rights by other parties to purchase any of the shares covered by this Agreement.

Section 5.03 *Authorization*. All corporate action required to be taken by the Company's Board and stockholders in order to authorize the Company to enter into this Agreement and to consummate the transactions contemplated hereby has been taken. All action on the part of the officers of the Company necessary for the execution and delivery of this Agreement, the performance of all obligations of the Company under this Agreement to be performed as of each Closing has been taken or will be taken prior to such Closing. The Company has full corporate power and authority to enter into this Agreement. This Agreement has been duly authorized, executed and delivered by the Company, and constitutes a valid and legally binding obligation of the Company, enforceable in accordance with its terms, except as limited by (1) laws limiting the availability of specific performance, injunctive relief, and other equitable remedies; and (2) bankruptcy, insolvency, reorganization, moratorium or other similar laws now or hereafter in effect generally relating to or affecting creditors' rights generally.

Section 5.04 *Valid Issuance of Shares*.

(a) The Offered Shares, when issued, sold and delivered in accordance with the terms and for the consideration set forth in this Agreement, will be validly issued, fully paid and nonassessable and free of restrictions on transfer other than applicable state and federal securities laws or as provided in this Agreement, including the transfer restrictions set forth in Section 10.01 hereof. Assuming the accuracy of the representations of the Purchaser in Article VI of this Agreement and subject to the filings described in this Section 5.04 the Company has complied and will comply with all federal and state securities laws applicable to the issuance of the Initial Shares, Additional Shares and Subsequent Shares.

(b) No "bad actor" disqualifying event described in Rule 506(d)(1)(i)-(viii) of the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder ("**Securities Act**") (a "**Disqualification Event**") is applicable to the Company or, to the Company's knowledge, any Company Person listed in the first paragraph of Rule 506(d)(1), except for a Disqualification Event as to which Rule 506(d)(2)(ii–iv) or (d)(3), is applicable.

Section 5.05 *Litigation*. No claim, action, suit, proceeding, arbitration, complaint, charge or investigation is pending or, to the knowledge of the Company, threatened (1) against the Company or any officer, director or key employee of the Company, in each case in such capacity; (2) with respect to the Company's execution and delivery of this Agreement or the consummation by the Company of the transactions contemplated hereby; or (3) to the Company's knowledge, that would reasonably be expected to have, either individually or in the aggregate, a Material Adverse Effect.

Section 5.06 *Absence of Further Requirements*. No consent, approval, authorization, or order of, or filing or registration with, any federal, state, local or foreign governmental or regulatory commission, board, body, authority or agency, or similar body or any court or with any self-regulatory organization or other non-governmental regulatory authority, is required to be obtained or made by the Company for the consummation of the transactions contemplated by this Agreement, except for any such consents, approvals, authorizations, orders, filings or registrations, the absence of which would not, individually or in the aggregate, materially interfere with the consummation of the transactions contemplated hereby.

Section 5.07 *Absence of Defaults and Conflicts Resulting from Transaction*. The execution, delivery and performance of this Agreement, and the sale of the Offered Shares, will not result in a breach or violation of any of the terms and provisions of, or constitute a default under, or result in the imposition of any lien, charge or encumbrance upon any property or assets of the Company or any of its subsidiaries pursuant to, (1) their respective charter, by-laws, certificate of formation, limited liability company agreement, as applicable, or similar organizational documents of the Company or any of its subsidiaries, (2) any statute, rule, regulation or order of any governmental agency or body or any court, domestic or foreign, having jurisdiction over the Company or any of its subsidiaries or any of their properties, or (3) any agreement for borrowed money to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any of the properties of the Company or any of its subsidiaries is subject, except as would not, individually or in the aggregate, have or reasonably be expected to have a Material Adverse Effect.

Section 5.08 *Absence of Existing Defaults and Conflicts*. Neither the Company nor any of its subsidiaries is (1) in violation of its respective charter, by-laws, certificate of formation, limited liability company agreement, as applicable, or other similar organizational documents or (2) in default under any existing material obligation, agreement, covenant or condition contained in any note, indenture, loan agreement, mortgage, lease or other agreement or instrument to which any of them is a party or by which any of them is bound or to which any of the properties of any of them is subject, (3) in violation of any material instrument, judgment, order, writ or decree, or (4) in violation of any federal, state, local or foreign law, regulation or rule, or order of any governmental agency or body or any court having jurisdiction over the Company or any of its subsidiaries or any of their properties, except, in each case, as would not, individually or in the aggregate, result or reasonably be expected to result in a Material Adverse Effect.

Section 5.09 *Financial Statements*. The Company has delivered to Purchaser its most recently available audited year-end and unaudited quarterly financial statements (collectively, the "**Financial Statements**"). The Financial Statements present fairly in all material respects the financial position of the Company and its consolidated subsidiaries as of the dates shown and

their results of operations and cash flows for the periods shown, and, except as otherwise disclosed in such Financial Statements, such Financial Statements have been prepared in conformity with GAAP applied on a consistent basis.

Section 5.10 *No Material Adverse Effect*. Since the end of the period covered by the applicable Financial Statements, no event or circumstance has occurred that, individually or in the aggregate, has had or would reasonably be expected to have a Material Adverse Effect.

Section 5.11 *Registration and Voting Rights*. Except as may be required as a result of the Bentley Systems, Incorporated Profit Sharing/401(k) Plan, as amended, the Company is not under any obligation to register under the Securities Act any of its currently outstanding securities or any securities issuable upon exercise or conversion of its currently outstanding securities. To the Company's knowledge, except as contemplated in the Equity Incentive Plans and the Second Amended and Restated Stockholders Agreement, dated as of March 28, 2013, between the Company and certain Key Holders (the "**Stockholders' Agreement**"), no stockholder of the Company has entered into any agreements with respect to the voting of capital stock of the Company.

Section 5.12 *Taxes*. Except as would not reasonably be expected to result in material liability to the Company, the Company has paid to the extent due and payable, or (to the extent accrued but not yet due and payable) has adequately reserved (in accordance with GAAP) for the payment of, all material taxes that are required to be paid by or on behalf of the Company. The Financial Statements reflect an adequate reserve (in accordance with GAAP) for all material tax obligations owed by the Company through the date of such Financial Statements.

Section 5.13 *Corporate Documents*. The charter and by-laws of the Company are in the form provided to the Purchaser.

Section 5.14 *Broker or Finders*. The Company has not engaged any brokers, finders or agents, and neither the Company nor the Purchaser will incur, directly or indirectly, as a result of any action taken by the Company, any liability for brokerage or finders' fees or agents' commissions or any similar charges in connection with this Agreement.

Section 5.15 *Compliance with Laws; Anti-Corruption Laws.*

(a) The Company is, and its business has been, conducted in compliance in all material respects with all applicable laws and regulations (the "**Applicable Laws**"), except to the extent the non-compliance with any such Applicable Laws would not reasonably be expected to expose the Company to liability in excess of $2,000,000.

(b) None of the Company, any of its subsidiaries or any director or executive officer of the Company or, to the knowledge of the Company, employee, officer of the Company or its subsidiaries or agent of the Company or any of its subsidiaries has (i) used any funds for unlawful contributions, gifts, entertainment or other unlawful payments relating to an act by any governmental authority; (ii) made any unlawful payment to any foreign or domestic government official or employee or to any foreign or domestic political party or campaign or violated any provision of the U.S. Foreign Corrupt Practices Act of 1977; or (iii) made any other unlawful payment under any Applicable Law relating to anti-corruption, bribery or similar matters.

Neither the Company nor any of its subsidiaries has disclosed to any governmental authority that it violated or may have violated any Applicable Law relating to anti-corruption, bribery or similar matters. To the knowledge of the Company, no governmental authority is investigating, examining or reviewing the Company's compliance with any applicable provisions of any Applicable Law relating to anti-corruption, bribery or similar matters.

(c) The Purchaser acknowledges and agrees that, if applicable, the provisions of Section 25.01(a) constitute the Purchaser's sole and exclusive remedy with respect to the matters contemplated by Section 5.15(b).

ARTICLE VI.
REPRESENTATIONS AND WARRANTIES OF THE PURCHASER

The Purchaser represents and warrants to the Company that:

Section 6.01 *Organization and Good Standing*. The Purchaser has been duly organized as a stock corporation (Aktiengesellschaft), and is validly existing under German law.

Section 6.02 *Authorization*. All corporate action required to be taken by the Purchaser's Board in order to authorize the Purchaser to enter into this Agreement and to consummate the transactions contemplated hereby has been taken. All action on the part of the officers of the Purchaser necessary for the execution and delivery of this Agreement, the performance of all obligations of the Purchaser under this Agreement to be performed as of each Closing has been taken or will be taken prior to such Closing. The Purchaser has full power and authority to enter into this Agreement. This Agreement has been duly authorized, executed and delivered by the Purchaser and constitutes a valid and legally binding obligation of the Purchaser, enforceable in accordance with its terms, except as limited by (i) laws limiting the availability of specific performance, injunctive relief, and other equitable remedies; and (ii) bankruptcy, insolvency, reorganization, moratorium or other similar laws now or hereafter in effect generally relating to or affecting creditors' rights generally. All action on the part of the Purchaser necessary for the authorization, execution, delivery and performance of all of the Purchaser's obligations under this Agreement has been taken or will be taken prior to each Closing.

Section 6.03 *Consents*. No consent, approval, authorization, order, filing, registration or qualification of or with any court, governmental authority or third person is required to be obtained by the Purchaser in connection with the execution and delivery of this Agreement by the Purchaser or the performance of the Purchaser's obligations hereunder.

Section 6.04 *No Registration*. Purchaser understands that the Offered Shares have not been, and will not be, registered under the Act by reason of a specific exemption from the registration provisions of the Securities Act, the availability of which depends upon, among other things, the bona fide nature of the investment intent and the accuracy of the Purchaser's representations expressed herein or otherwise made pursuant hereto. The Purchaser is purchasing the Offered Shares for its own account for investment only, and not with a view to the resale or distribution thereof. The Purchase will not distribute the Class B Common Stock purchased hereunder (or any Direct Shares) in violation of the Securities Act or the applicable securities laws of any state. The Purchaser understands that it will be required to hold the Class B

Common Stock purchased hereunder (or any Direct Shares) subject to the provisions of Article X hereof.

Section 6.05 *Investment Experience*. The Purchaser has substantial experience in evaluating and investing in non-publicly traded securities in companies similar to the Company and acknowledges that the Purchaser can protect its own interests. The Purchaser has such knowledge and experience in financial and business matters so that the Purchaser is capable of evaluating the merits and risks of an investment in the Offered Shares. In formulating a decision to enter into this Agreement, such Purchaser has relied solely upon (a) the provisions of this Agreement, (b) an independent investigation of the Company's business (including the business of its subsidiaries), and (c) consultations with, its legal and financial advisors with respect to this Agreement and the nature of its investment.

Section 6.06 *Investigation*. The Purchaser confirms that it has completed its investigation of the Company and its business and financial condition to its satisfaction.

Section 6.07 *Accredited Investor*. The Purchaser is an accredited investor as defined in Rule 501(a) of Regulation D promulgated under the Securities Act.

Section 6.08 *Litigation*. No claim, action, suit, proceeding, arbitration, complaint, charge or investigation is pending or, to the knowledge of the Purchaser, threatened, against the Purchaser with respect to Purchaser's execution and delivery of this Agreement or the consummation by the Purchaser of the transactions contemplated hereby (other than those involving the Company's stockholders filed after the date of this Agreement).

Section 6.09 *Broker or Finders*. The Purchaser has not engaged any brokers, finders or agents, and neither the Company nor the Purchaser will incur, directly or indirectly, as a result of any action taken by the Purchaser, any liability for brokerage or finders' fees or agents' commissions or any similar charges in connection with this Agreement.

ARTICLE VII.
REPRESENTATIONS AND WARRANTIES OF THE KEY HOLDERS

Each Key Holder represents and warrants to the Company and the Purchaser that:

Section 7.01 *Authorization*. Such Key Holder has full power and authority to enter into this Agreement. This Agreement has been duly authorized, executed and delivered by such Key Holder and constitutes a valid and legally binding obligation of such Key Holder, enforceable in accordance with its terms, except as limited by (i) laws limiting the availability of specific performance, injunctive relief, and other equitable remedies; and (ii) bankruptcy, insolvency, reorganization, moratorium or other similar laws now or hereafter in effect generally relating to or affecting creditors' rights generally. All action on the part of such Key Holder necessary for the authorization, execution, delivery and performance of all of such Key Holder's obligations under this Agreement has been taken or will be taken prior to the Closing.

Section 7.02 *Consents*. Except as set forth in the Stockholders Agreement, no consent, approval, authorization, order, filing, registration or qualification of or with any court, governmental authority or third person is required to be obtained by such Key Holder in

connection with the execution and delivery of this Agreement by such Key Holder or the performance of such Key Holder's obligations hereunder.

Section 7.03 *Broker or Finders*. Such Key Holder has not engaged any brokers, finders or agents, and no party hereto will incur, directly or indirectly, as a result of any action taken by such Key Holder, any liability for brokerage or finders' fees or agents' commissions or any similar charges in connection with this Agreement.

Section 7.04 *Capital Stock*. Such Key Holder represents and warrants that such Key Holder, except with respect to any Exempt Transactions subsequent or, with respect to the pledging of shares, prior to the date of this Agreement as permitted by Section 12.06, is the sole legal and beneficial owner of the shares of Capital Stock (as defined below) held by it subject to this Agreement as set forth on Exhibit B attached hereto (as may be updated from time to time to reflect any additional shares of Capital Stock such Key Holder may hereafter acquire). The shares of Capital Stock sold by such Key Holder to the Purchaser pursuant to any Stock Purchase Agreement shall be free and clear of liens and restrictions (other than restrictions on transfer under applicable United States securities laws for which there is a valid exemption in connection with the transactions contemplated hereby and any restrictions hereunder, including the transfer restrictions in Section 10.01 hereof).

ARTICLE VIII.
PROTECTIVE PROVISIONS

At any time from and after the date of this Agreement until the earlier to occur of (i) any Effective Registration or (ii) the Transfer by the Purchaser pursuant to Article XIII of greater than fifty-percent of the aggregate number of shares of Class B Common Stock acquired hereunder (measured as of the applicable date of determination, a "**Significant Sale**"), except as reasonably required in connection with a Registration Event, the Company shall not, and none of the Key Holders shall permit the Company to, either directly or indirectly by amendment, merger, consolidation or otherwise, take or permit any of the following actions without (in addition to any other vote required by law or the Certificate of Incorporation of the Company) the prior written consent of the Purchaser, which consent shall not be unreasonably withheld, delayed or conditioned:

Section 8.01 amend, alter or repeal any provision of the Certificate of Incorporation or Bylaws of the Company in a manner that disproportionately affects the powers, preferences or rights of the Class B Common Stock (other than, for the avoidance of doubt, any amendments, restatements or other modifications that by their terms are only effective upon an Effective Registration);

Section 8.02 create, or authorize the creation of, or issue or obligate itself to issue shares of, any additional class or series of capital stock equal or senior to the Class B Common Stock with respect to the distribution of assets on the liquidation, dissolution or winding up of the Company, the payment of dividends and rights of redemption, or increase the authorized number of shares of Class B Common Stock or increase the authorized number of shares of Class A Common Stock;

Section 8.03 reclassify, alter or amend any existing security of the Company that is *pari passu* with the Class B Common Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Company, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to the Class B Common Stock in respect of any such right, preference, or privilege;

Section 8.04 declare, pay or set aside any dividends or otherwise make any distributions on shares of any class or series of capital stock of the Company (other than dividends on shares of Class A Common Stock or Class B Common Stock payable in shares of Class A Common Stock or Class B Common Stock, respectively) unless such a dividend or distribution is paid with respect to all outstanding shares of Class A Common Stock or Class B Common Stock on a pro rata and pari passu basis; provided, that, the Company shall not declare, pay or set aside any dividends or otherwise make any distributions on shares of any class or series of capital stock of the Company (other than dividends on shares of Class A Common Stock or Class B Common Stock payable in shares of Class A Common Stock or Class B Common Stock, respectively, or ordinary quarterly cash dividends) during (i) the period of time between the signing of this Agreement and the Initial Closing; or (ii) the period of time between the Board adopting a new FMV and an applicable Additional Closing (for the avoidance of doubt, whether or not such dividend or distribution is paid with respect to all outstanding shares of Class A Common Stock or Class B Common Stock on a pro rata and *pari passu* basis);

Section 8.05 prior to the Maximum Amount having been purchased hereunder (as such amount may be increased from time to time), purchase or redeem any shares of Class B Common Stock of the Company, other than as set forth herein or pursuant to the Equity Incentive Plans during (i) the period of time between the signing of the Agreement and the Initial Closing; or (ii) the period of time between the Board adopting a new FMV and an applicable Subsequent Closing; or

Section 8.06 enter into or be a party to any transaction that would be disclosable by the Company under Section 404 of Regulation S-K (or any successor regulation) if the Company were a reporting company under the Exchange Act, except for transactions contemplated by this Agreement or to the extent such transactions are approved by a majority of the disinterested directors on the Board.

ARTICLE IX.
CONFIDENTIALITY

Each of the Company and Purchaser (each, a "**Recipient**") shall keep confidential, and shall not directly or indirectly disclose to any third party or use, any confidential or proprietary information or trade secret relating to the other party (each, a "**Discloser**") (collectively, the "**Confidential Material**"); provided, that Confidential Material shall not include any of the foregoing that (i) was known to the Recipient or any affiliate of thereof prior to the receipt of the Confidential Material from the Discloser or any of the Discloser's affiliates, (ii) is, was, or becomes through no breach of the Recipient's obligations hereunder, known to the public or otherwise generally non-confidential, (iii) becomes known to the Recipient or an affiliate of the Recipient from a source other than the Discloser or any of the Discloser's affiliates under circumstances not involving any breach of any confidentiality obligation between such source

and the Discloser or the Discloser's affiliates, or (iv) is independently developed by the Recipient or any of the Recipient's affiliates without reference to any Confidential Material (or with reference only to Confidential Material described in the foregoing subsections (i) through (iv)). Notwithstanding the foregoing, if a party hereto is required in the course of judicial or administrative proceedings or governmental inquiries (including with respect to any taxing authority) to disclose any Confidential Material, the disclosing party shall give the other party prompt notice thereof so that such party may seek an appropriate protective order and/or waive the disclosing party's compliance with the confidentiality provisions of this Article IX. For the avoidance of the doubt, the Disclosure Schedules, the existence of this Agreement, the transactions contemplated hereby and any information provided by the Company to the Purchaser in Purchaser's capacity as a stockholder of the Company, if any, shall be deemed to be Confidential Material hereunder, and none of the foregoing shall be disclosed to any third party except to the extent specifically agreed between the Parties hereto. This Article IX shall survive any termination or expiration of this Agreement.

ARTICLE X.
TRANSFER RESTRICTIONS; LOCK-UP

Section 10.01 Unless and until there is an Effective Registration, the Purchaser shall not sell or otherwise transfer, or pledge or otherwise encumber, whether voluntarily or by operation of law, any shares of Class B Common Stock purchased hereunder or any Direct Shares purchased from a Selling Stockholder (collectively, the "**Securities**"). Any Transfer in violation of this Section 10.01 shall be null and void and of no force and effect; provided, that, notwithstanding anything in this Article X to the contrary, the Purchaser or a transferee who is an Affiliate may at any time sell or otherwise transfer Securities pursuant to Article XIII or to an Affiliate; provided further that (i) any such transferee must execute a written instrument agreeing to be bound by the terms and conditions of this Agreement and (ii) the transferor shall surrender to the Company the stock certificate being transferred, and include therewith an appropriate stock power effecting the Transfer (the documents referred to in (i) and (ii), the "**Transfer Documentation**"). Upon its receipt of the Transfer Documentation, the Company shall reflect the Transfer on the books and records of the Company and issue a new stock certificate in the name of the transferee. Any Transfer made pursuant to this Article X shall not relieve the Purchaser of its obligations hereunder. For the purposes of this Article X, "**Affiliate**" means, with respect to the Purchaser, any entity that, directly or indirectly, Controls, is Controlled by or is under common Control with the Purchaser.

Section 10.02 Without limiting the provisions of Section 10.01 above, Purchaser agrees, in connection with the first registration with the United States Securities and Exchange Commission under the Securities Act of the offering for public sale of the Company's common stock, not to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any securities of the Company (other than those included in the registration) without the prior written consent of the Company or the underwriters managing such offering, as the case may be, for such period of time from the effective date of such registration as the Company or such underwriters, as the case may be, shall specify, provided that in no event shall such period exceed 180 days. Purchaser further agrees that the Company may instruct its transfer agent to place stop-transfer notations in its records to enforce the provisions of this Section 10.02. Purchaser shall execute and deliver to the underwriters for any such initial public offering a

lockup agreement reflecting the foregoing and any other terms reasonably required by the underwriters, provided that the terms shall be no less favorable than those of any lockup agreement required to be executed by the Company's controlling stockholders. The foregoing provisions of this Section 10.02 shall apply only to the initial public offering of the Company's common stock, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall be applicable only if all executive officers and directors are subject to no more favorable restrictions and the Company obtains a similar agreement from all stockholders individually owning more than five percent (5%) of the Company's outstanding common stock. This Section 10.02 shall survive any termination or expiration of this Agreement.

ARTICLE XI.
INFORMATION RIGHTS

Section 11.01 *Delivery of Financial Statements*. The Company shall deliver to Purchaser:

(a) as soon as practicable, but in any event within one hundred twenty (120) days after the end of each fiscal year of the Company (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, (iii) a statement of stockholders' equity as of the end of such year, and (iv) management discussion and analysis, all such financial statements audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(b) as soon as practicable, but in any event within sixty (60) days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited statements of income and cash flows for such fiscal quarter, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter (along with management discussion and analysis), all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments; and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) as soon as practicable, but in any event within sixty (60) days after the end of each of the first three (3) quarters of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Class B Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Class B Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in reasonably sufficient detail as to permit the Purchaser to calculate its percentage equity ownership in the Company;

(d) as soon as practicable after submission to the Securities Exchange Commission ("**SEC**"), any registration statement (including a draft registration statement confidentially submitted to the SEC) and other documents filed with, or submitted to, the SEC by the Company in connection with its initial public offering;

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Section 11.01 to the contrary, the Company may cease providing the information set forth in this Section 11.01 during the period starting with the date thirty (30) days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Section shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

Section 11.02 *Termination of Information.* The covenants set forth in Section 11.01 shall terminate and be of no further force or effect upon the earlier to occur of (1) the occurrence of a Significant Sale and (2) an Effective Registration.

ARTICLE XII.
RIGHT OF FIRST REFUSAL

Section 12.01 Subject to Section 12.07, from and after the date hereof and prior to an Effective Registration, the Company shall not, and each Key Holder shall not, undertake or pursue (i) any Deemed Liquidation Event (as defined below), (ii) an offer, sale or issuance of Capital Stock by the Company (a "**Company Issuance**") or (iii) any other Transfer (as defined below) of any Capital Stock (as defined below) by a Key Holder (any of (i), (ii) or (iii), a "**Right of First Refusal Transaction**") without first complying with this Article XII (including and subject to allowances for Exempt Transactions).

Section 12.02 Subject to the terms and conditions of this Article XII, if the Company or any Key Holder proposes to undertake or pursue a Right of First Refusal Transaction other than Exempt Transactions, the Company or such selling Key Holder, as applicable, shall give notice to Purchaser setting forth its bona fide intention to pursue such Right of First Refusal Transaction and setting forth in reasonable detail the terms and conditions of such proposed Right of First Refusal Transaction, including (a), its bona fide intention to pursue such Right of First Refusal Transaction, (b) the name and address of any prospective purchaser(s) or other participants (and any person or entity controlling such purchaser(s) or participants) or providing material debt or equity financing thereto, (c) the proposed amount and form of consideration and terms and conditions of payment offered by the prospective purchaser(s), and (d) all other material terms of the proposed transaction including the expected closing date of the transaction (the "**Right of First Refusal Notice**"). The Right of First Refusal Notice shall further include an irrevocable offer (a "**ROFR Offer**") of the Company or such Key Holder, as applicable, to enter into the transactions contemplated by Section 12.03 in lieu of such Right of First Refusal Transaction.

Section 12.03 By notification to the Company or the selling Key Holder, as applicable, within 30 days after the Right of First Refusal Notice is delivered to Purchaser (the "**ROFR**

Exercise Period"), Purchaser may elect to accept such ROFR Offer by delivery of written notice to the Company or the selling Key Holder, as applicable, which acceptance (a "**ROFR Acceptance**") shall create a binding obligation on the Parties to enter into and consummate transactions (the "**ROFR Exercise Transactions**") as follows: (i) with respect to a Deemed Liquidation Event or Company Issuance, Purchaser shall have the right to enter into the Right of First Refusal Transaction with the Company (or if applicable selling Key Holders) on the same terms as set forth in the Right of First Refusal Notice in lieu of any other proposed counterparties thereto or (ii) with respect to Capital Stock to be Transferred by a selling Key Holder, (a) if such sale is for less than 5% of the amount of the then issued and outstanding shares of Capital Stock of the Company (measured on a fully-diluted and as-converted basis), Purchaser shall have the right to acquire such Capital Stock for a price equal to the then current FMV (which the Company shall prepare anew if the then most recent FMV is more than six (6) months old) and otherwise on applicable terms consistent with those set forth in the Right of First Refusal Notice, or (b) if such sale is for 5% or more of the amount of the then issued outstanding shares of Capital Stock of the Company (measured on a fully-diluted and as-converted basis), Purchaser shall have the right to acquire such Capital Stock for consideration equal to the greater of (x) the price set forth in the Right of First Refusal Notice and to be paid by the proposed purchaser in the Right of First Refusal Transaction and (y) the then current FMV (which the Company shall prepare anew if the then most recent FMV is more than six (6) months old), and otherwise on applicable terms consistent with those set forth in the Right of First Refusal Offer Notice. For purposes of the foregoing, it is expressly understood and agreed that in the event any Right of First Refusal Transaction contemplates non-cash consideration to the Company (or its equity holders, including any Key Holder), Purchaser shall have the right to substitute comparable (but not identical) non-cash consideration or, at Purchaser's option in lieu thereof, cash consideration of substantially equivalent value (determined by applying the Acceptable Methodologies to the extent reasonably applicable).

Section 12.04 In the event the Purchaser delivers a ROFR Acceptance, the parties will negotiate in good faith and enter into definitive documentation providing for the consummation of the ROFR Exercise Transaction as soon as practicable on market terms for transactions of a similar type to the extent such terms are not otherwise provided for and contemplated by Section 12.03 (and otherwise on such terms). The closing of any ROFR Exercise Transactions shall take place at such date for closing contemplated by the Right of First Refusal Notice or as soon as reasonably practicable thereafter, subject to extension to the extent necessary to satisfy applicable regulatory or other third party approvals that are required or advisable in connection with the consummation of such ROFR Exercise Transaction; provided that in no event shall Purchaser be required to close any such ROFR Exercise Transaction prior to the 30th day following execution of the definitive documentation with respect to such ROFR Exercise Transaction.

Section 12.05 If the Purchaser does not deliver a ROFR Acceptance within the ROFR Exercise Period, the Company or the selling Key Holder, as applicable, may, during the 60 day period following the expiration of the ROFR Exercise Period enter into definitive documentation providing for the Right of First Refusal Transaction on the terms and with the prospective purchaser(s) or other participants set forth in the Right of First Refusal Notice, and thereafter consummate the Right of First Refusal Transaction pursuant to such definitive documentation; provided, however, that if (i) the Company or any applicable selling Key Holder does not so

enter into definitive documentation within such 60 day period, (ii) the Right of First Refusal Transaction is not consummated pursuant to such definitive documentation within 60 days of the proposed closing date set forth in the Right of First Refusal Notice with respect thereto or (iii) such definitive documentation, or the actual consummation of the Right of First Refusal Transaction, is lower with respect to price or differs in any other material respect from the terms described in the Right of First Refusal Notice with respect thereto (including if such Right of First Refusal Transaction includes or provides for a material term that was omitted from the Right of First Refusal Notice), then in each such case of the foregoing clauses (i), (ii) or (iii), the right of first refusal in favor of Purchaser provided hereunder shall be deemed to be revived and renewed and the Company and Key Holders shall not be permitted, and shall not consummate, such Right of First Refusal Transaction without first complying with the terms of this Article XII anew, including by providing Purchaser with a new Right of First Refusal Notice.

Section 12.06 Notwithstanding the foregoing, the right of first refusal in this Article XII shall not be applicable to the following (collectively, "**Exempt Transactions**"): (a) the initial issuance by the Company pursuant to any pro-rata in-kind dividend, stock split, split-up or similar distribution on shares of Common Stock of shares of Common Stock (but for the avoidance of doubt the right of first refusal shall apply to any subsequent Transfer of any such shares of Common Stock and to the issuance of any shares, options or convertible securities issued in connection with the exercise of "rights" or similar securities or instruments issued in connection with the adoption of a shareholder rights plan, "poison pill" or similar instrument); (b) in the case of a Key Holder that is an entity, upon a Transfer by such Key Holder to its stockholders, members, partners, beneficiaries, settlors or other equity holders, (c) in the case of a Key Holder that is a natural person, upon a Transfer of Capital Stock by such Key Holder made for bona fide estate planning purposes (including to and from any trusts formed after the date hereof), either during his or her lifetime or on death by will or intestacy to his or her spouse, child (natural or adopted), or any other direct lineal descendant of such Key Holder (or his or her spouse) (all of the foregoing collectively referred to as "family members"), or any other relative approved by the Board of Directors of the Company and the Purchaser, or any custodian or trustee of any trust, partnership or limited liability company primarily for the benefit of, or the ownership interests of which are owned wholly by such Key Holder or any such family members, (d) Transfers between or among Key Holders, (e) pledge, and transfer upon foreclosure of such pledge, any of the Key Holder's Capital Stock pledged in a bona fide indebtedness financing transaction to third party lenders as collateral to secure obligations pursuant to financial lending arrangements between such third parties (or their affiliates or designees) and the Key Holder or any similar arrangement relating to a bona fide indebtedness financing arrangement for the benefit of the Key Holder and/or his affiliates, (f) bona fide charitable contributions by a Key Holder not exceeding 10% of the Capital Stock held by such Key Holder as of the date that such Key Holder first became party to this Agreement; provided that if such charitable contribution exceeds such 10% limitation, then the recipient of such charitable contribution shall be obligated, as a condition to the transfer by the Key Holder, to sell such contributed Capital Stock in the next succeeding Subsequent Offer pursuant to Article II, (g) any issuance of Capital Stock by the Company in consideration for the acquisition by the Company of the stock, assets, properties or business of any person, provided that such Capital Stock, together with all then-outstanding Capital Stock, is not equal to and not convertible into an aggregate of more than (i) 5% of the outstanding Capital Stock on a fully diluted basis at the time of issuance or (ii) when combined in the aggregate with all issuances described in this

clause (g), the lesser of (x) 15% of the total outstanding Capital Stock on a fully diluted basis as of the date hereof and (y) the percentage equal to Purchaser's proportionate ownership of the total outstanding Capital Stock on a fully diluted basis at the time of such issuance, (h) any issuance of warrants or other similar rights to purchase up to 5% (in the aggregate when combined with all issuances described in this clause (h)) of the total outstanding Capital Stock on a fully diluted basis as of the date hereof to lenders or other institutional investors in any arm's length transaction providing debt financing to the Company, or (i) Employee Issuances or other issuances of shares of Class B Common Stock or options issued to employees or directors of the Company or any of its subsidiaries pursuant to any equity compensation plan, agreement or arrangement approved by the Board of Directors of the Company ("**Equity Incentive Plans**"), which Employee Issuances shall be governed by Article XIV; provided that in the case of clause(s) (b), (c), (e), (f) or (h), the Key Holder shall deliver prior written notice to Purchaser of such gift, pledge or Transfer and such shares of Capital Stock shall at all times remain subject to the terms and restrictions set forth in this Agreement and such transferee shall, other than in the case of a pledge, as a condition to its receipt of such shares, deliver a joinder and counterpart signature page to this Agreement in form and substance reasonably satisfactory to Purchaser as confirmation that such transferee shall be bound by all the terms and conditions of this Agreement as a Key Holder; and provided further in the case of any transfer pursuant to clause (b) or (c) above, that such transfer is made pursuant to a transaction in which there is no consideration actually paid for such transfer; and provided further in the case of any transfer pursuant to clause (e), the Capital Stock pledged in such transaction shall remain subject to restrictions contained herein, and the transferor thereof shall remain responsible for the continuing compliance with such restrictions.

Section 12.07 Notwithstanding anything to the contrary contained herein, the rights granted to Purchaser pursuant to this Article XII shall not apply and shall have no force or effect until such time as the Strategic Collaboration Agreement has been executed and delivered by the parties thereto (it being understood and agreed that the Company will, and the Purchaser will cause the Purchaser Collaboration Partner to, negotiate in good faith to enter into the Collaboration Agreement on terms substantially reflective of those set forth on Exhibit C hereto as soon as reasonably practicable following the date hereof and that the Company will not, and no Key Holder shall, enter into any Right of First Refusal Transaction prior to entering into the Strategic Collaboration Agreement; provided that Exempt Transactions shall be permitted during such time). In addition, following such execution and delivery, the right of first refusal granted to Purchaser pursuant to this Article XII shall be suspended automatically if the Strategic Collaboration Agreement is terminated (i) by the Purchaser Collaboration Partner for any reason or (ii) by the Company in the event of a material breach of the Strategic Collaboration Agreement by the Purchaser Collaboration Partner, in each case, in accordance with, and subject to the terms of, the Strategic Collaboration Agreement; provided that such breach (x) shall not have been the result of the material failure by the Company to perform any of its obligations under the Strategic Collaboration Agreement (as such obligations may be defined or specified therein), and (y) cannot be reasonably demonstrated by the Purchaser to have been avoidable if the Company had in good faith taken all reasonable steps necessary and appropriately allocated to the Company to meet a mutually determined goal under the Strategic Collaboration Agreement.

Section 12.08 Each Key Holder agrees that the Company shall impose, and may instruct its transfer agent to impose, transfer restrictions on the shares of Capital Stock held by such Key Holder to enforce the provisions of this Agreement.

Section 12.09 For purposes hereof, (i) "**Capital Stock**" shall mean equity interests or securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities or instruments of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities, in each case now owned or subsequently acquired (including, in the case of any Key Holder, by such Key Holder's respective successors or permitted transferees or assigns), calculated on a fully diluted and as-converted basis, and (ii) "**Person**" shall mean an individual, corporation, limited liability company, partnership, association, trust or other entity or organization.

Section 12.10 For purposes hereof, "**Control**" (including, with correlative meanings, the terms "Controlling," "Controlled by" and "under common Control with") shall mean with respect to a specified person, the possession, directly or indirectly, of the power, directly or indirectly (including pursuant to a direct or indirect chain of ownership or Control of one or more Persons), to direct or cause the direction of the management or policies of such specified Person, whether through ownership of voting securities, by contract, or otherwise; provided that, "Control" shall include and be deemed to exist by virtue of the direct or indirect ownership of the voting equity securities of such specified Person having fifty percent (50%) or more of the voting power in the election of directors (or Persons serving similar functions).

Section 12.11 For purposes hereof, a "**Deemed Liquidation Event**" shall mean:

(a) a merger or consolidation in which

(i) the Company is a constituent party or

(ii) a subsidiary of the Company is a constituent party and the Company issues shares of its capital stock pursuant to such merger or consolidation,

except any such merger or consolidation involving the Company or a subsidiary in which the shares of capital stock of the Company outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, at least a majority, by voting power and ownership, of the capital stock of (1) the surviving or resulting corporation; or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation;

(b) the sale, lease, transfer, license or other disposition, in a single transaction or series of related transactions, by the Company or any subsidiary of the Company of all or substantially all the assets of the Company and its subsidiaries taken as a whole, or the sale or disposition (whether by merger, consolidation or otherwise) of one or more subsidiaries of the Company if substantially all of the assets of the Company and its subsidiaries taken as a whole

are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license or other disposition is to a wholly owned subsidiary of the Company;

(c) a share purchase, share exchange or tender offer in which at least a majority, by voting power or Control, of the shares of capital stock of the Company are transferred to another person; or

(d) any other voluntary or involuntary liquidation, dissolution or winding up of the Company.

Section 12.12 For purposes hereof, "**Transfer**" shall mean any direct or indirect (including pursuant to a direct or indirect chain of ownership or Control (as defined below) of one or more persons) voluntary or involuntary sale, assignment, transfer, conveyance, exchange, bequest, devise, gift, pledge or any other alienation (in each case, with or without consideration) of any ownership, rights, interests or obligations. For the avoidance of doubt, the Transfer of beneficial ownership of any Capital Stock or of any person directly or indirectly (including pursuant to a direct or indirect chain of ownership or Control of one or more persons) holding beneficial ownership of any such person shall be considered a Transfer of the Capital Stock held by such person.

Section 12.13 *Right of Participation*.

(a) Subsequent to an Effective Registration, in the event that the Company or any Key Holder receives any non-public proposal or offer from a third party (excluding for this purpose any member of the Bentley family and their respective affiliates) and that the Company or such Key Holder elects to pursue (a "**Third Party Proposal**") with respect to any (x) Deemed Liquidation Event, (y) Company Issuances not involving a public offering of Capital Stock (a "**Non-Public Offering**"), or (z) any Transfer of any Capital Stock by a Key Holder in a single transaction in excess of 1% of the then issued and outstanding shares of Capital Stock of the Company (measured on a fully-diluted and as-converted basis) (other than Exempt Transactions) (each, of the foregoing, a "**Right of Participation Transaction**"), the Company or such Key Holder, as applicable, shall timely notify the Purchaser of such Right of Participation Transaction to permit the Purchaser with an opportunity to participate in any such transaction on the terms provided in this Section 12.13 (which notification shall include in reasonable detail the material terms and conditions of such Third Party Proposal materially consistent with the detail and terms that would be included in any Right of First Refusal Notice; provided that the Company or Key Holder, as applicable, may exclude from its notice any terms that could enable the Purchaser to determine the identity of the third party). The Purchaser shall have 20 days after receipt of such notification to submit to the Company a binding offer to engage in such Right of Participation Transaction with the Company or such Key Holder, as applicable, which offer shall include all of the material terms thereof proposed by Purchaser, which offer shall remain open and valid for the duration of the Restricted Period (as defined below), if applicable (the "**Purchaser Additional Offer**").

(b) Subsequent to an Effective Registration, in the event that the Company or any Key Holder elects to undertake a Right of Participation Transaction and has not received a Third Party Proposal, the Company or such Key Holder, as applicable, shall notify the Purchaser of

such desire. The Purchaser shall have 20 days after receipt of such notification to submit to the Company or such Key Holder, as applicable, a binding offer to engage in a Right of Participation Transaction with the Company or such Key Holder, as applicable, which offer shall include all of the material terms thereof proposed by Purchaser and shall remain open and valid for the duration of the Restricted Period, if applicable (the "**Purchaser Initial Offer**").

(c) If the Purchaser timely submits a Purchaser Additional Offer or a Purchaser Initial Offer to the Company or such Key Holder, as applicable, the Company or such Key Holder, as applicable, shall not, during the period beginning on the date of such timely submission and ending upon the earlier to occur of (i) 12 months after such date and (ii) the date on which the Purchaser Additional Offer or Purchaser Initial Offer, as applicable, expires, lapses or is otherwise withdrawn or revoked (such period of time, the "**Restricted Period**"), consummate a Right of Participation Transaction with any third party other than Purchaser on terms, including price, less favorable in the aggregate (in the case of a sale by the Company, as reasonably determined in good faith by the Board) than the price and terms provided in the Purchaser Additional Offer or the Purchaser Initial Offer, as applicable.

(d) Subject to paragraph (e), below, Purchaser may improve the terms included in any Purchaser Additional Offer or Purchaser Initial Offer at any time. Purchaser's right to improve its offers shall include Purchaser's right to be informed by the Company of receipt of an offer that includes terms, including price, more favorable in the aggregate than the terms provided in the applicable Purchaser offer. The Company's determination with respect to each improved Purchaser Additional Offer or Purchaser Initial Offer shall take into account all revisions made by Purchaser to such offers prior to such determination

(e) At any time following its receipt of a Purchaser Additional Offer or Purchaser Initial Offer, in each case, if applicable as improved by Purchaser pursuant to subsection (d) above, the Company or the Key Holder, as applicable, may notify the Purchaser and each other third party with whom the Company or the Key Holder, as applicable, is dealing in respect of the Right of Participation Transaction that the Purchaser and each such third party must submit a "best and final" offer for the Right of Participation Transaction. Following such request, the Company or the Key Holder, as applicable shall not be obligated to continue to follow the procedures set forth in Section 12.13(d) and may accept any offer reasonably determined by the Board or the Key Holder, as applicable, to be the most favorable to the Company based on terms, including price (taking into account all improvements made by Purchaser prior to such determination).

(f) Subject to the terms hereof, during the Restricted Period, the Company shall have the right to consummate a Right of Participation Transaction with any third party on terms, including price, more favorable in the aggregate (in the case of the Company, as reasonably determined in good faith by the Board) than the terms initially provided in the Purchaser Additional Offer or the Purchaser Initial Offer, as applicable; provided, that if the Company or any applicable selling Key Holder does not consummate a Right of Participation Transaction on such terms within the Restricted Period, the right of participation described in this Section 12.13 in favor of Purchaser provided hereunder shall be deemed to be revived and renewed and the Company and Key Holders shall not be permitted, and shall not consummate, a Right of Participation Transaction without first complying with the terms of this Article XII anew,

including by providing Purchaser with a new notice of such Right of Participation Transaction or any other Right of Participation Transaction.

(g) If, following an IPO, the Company issues shares of Capital Stock in an offering other than a Non-Public Offering ("**Public Offering**"), the Purchaser shall have the right to purchase, for the price per share used as the basis for the applicable Public Offering, additional shares as are necessary so that the Purchaser's percentage ownership on a fully diluted basis at the time of such Public Offering, is unchanged as a result of each such Public Offering.

(h) The Purchaser acknowledges that any information relating to a Right of Participation Transaction may constitute material non-public information and therefore shall (1) maintain the confidentiality of any such information provided to it and not disclose such information to any third party, other than to employees or agents who have a "need to know" such information; provided that such employees and agents agree to keep such information confidential or as required by law or pursuant to a regulatory request, (2) comply with its obligations under the U.S. federal securities laws with respect to such information, and (3) not trade on or otherwise use any such material, non-public information for its own gain, in each case, notwithstanding any termination or expiration of this Agreement, in each case of the foregoing, consistent with Article IX and with applicable exceptions provided therein applied mutatis mutandis.

(i) The obligations of the Company and each Key Holder under this Section 12.13 shall terminate and be of no further force and effect if the Company undergoes a Deemed Liquidation Event in compliance with this Section 12.13.

ARTICLE XIII.
TAG-ALONG RIGHTS

Section 13.01 *General*. Subject to prior compliance with this Article XIII, if any Key Holder elects to consummate a transaction described in clause (b) of Section 12.03 solely involving a Key Holder (other than Exempt Transactions, and other than any sales of Capital Stock to be made as part of an underwritten offering) at any time prior to an Effective Registration with any person (a "**Tag-Along Transferee**") (as described herein, a "**Tag-Along Sale**"), then Purchaser may participate in the Tag-Along Sale (such participation rights being hereinafter referred to as "**Tag-Along Rights**") with respect to a number of Class B Common Stock it elects up to its Pro Rata Portion of the Capital Stock being Transferred in the Tag-Along Sale. "**Pro Rata Portion"** means, with respect to the number of shares of Capital Stock to be sold in a Tag-Along Sale, the number of shares of Class B Common Stock equal to the product of (x) the total number of shares of Capital Stock the proposed transferee proposes to purchase and (y) a fraction (A) the numerator of which is equal to the number of shares of Class B Common Stock then held by the Purchaser and (B) the denominator of which is equal to the number of outstanding shares of Capital Stock of the Company (on a fully-diluted basis).

(a) Subject to Section 13.03, Purchaser will be entitled to Transfer all of the Class B Common Stock to be Transferred in connection with the exercise of Tag-Along Rights on the same terms (other than aggregate price) and conditions applicable to, and for the same type of

consideration payable to, the Key Holders, at the price calculated in accordance with Section 13.03(b).

(b) The aggregate purchase price payable for the Capital Stock purchased by a Tag-Along Transferee will be allocated, paid and distributed among the Key Holders and the Purchaser in proportion to the number of shares of each such party's Capital Stock included in the Tag-Along Sale and the terms of the Tag-Along Sale shall be applied (subject to such proportion and Section 13.02 below) equally to the Key Holders and the Purchaser.

Section 13.02 *Terms of Sale*. In connection with the Tag-Along Sale, the Key Holders (as applicable) and Purchaser will execute such documents, and make the same representations, warranties, covenants and indemnities as are required by the Tag-Along Transferee in connection with the Tag-Along Sale; provided that any such indemnification or similar obligations will be apportioned pro rata among the Key Holders and Purchaser based on the proceeds received by them, other than with respect to representations made individually by a party as to facts and circumstances particular to such party (e.g., representations as to title or authority of such party or representations qualified by the individual knowledge of such party, which representations shall not be required of Purchaser to the extent not required of the Key Holders, and the Purchaser's responsibility therefor shall not exceed the proportionate responsibility of the Key Holders with respect to their respective comparable representations) and in no event shall the Purchaser's aggregate liability in connection with any Tag-Along Sale exceed the proceeds actually received by it in such Tag-Along Sale. In connection with a Tag-Along Sale, the Company shall not treat the Key Holders and Purchaser differently with respect to such Tag-Along Sale.

Section 13.03 *Tag-Along Notice*. Prior to any Key Holder making any Transfer that gives rise to Tag-Along Rights pursuant to this Article XIII, such Key Holder will give written notice (a "**Tag-Along Notice**") to Purchaser, setting forth in reasonable detail the terms and conditions of such proposed transfer or sale, including (a) the name and address of the Tag-Along Transferee (and of its beneficial owners if known), (b) the proposed amount and form of consideration and terms and conditions of payment offered by the Tag-Along Transferee, and (c) all other material terms of the proposed transaction including the expected closing date of the transaction. In the event that the terms or conditions set forth in the Tag-Along Notice are thereafter amended in any material respect, the Company will promptly give written notice (an "**Amended Tag-Along Notice**") of the amended terms and conditions of the proposed Transfer to Purchaser. If Purchaser opts to exercise its Tag-Along Rights, it will give written notice to the Company within ten business days after receipt of the Tag-Along Notice, or, if later, within three (3) business says after receipt of the most recent Amended Tag-Along Notice, of its intention to participate in the Tag-Along Sale on the terms and conditions set forth in such Tag-Along Notice or the most recent Amended Tag-Along Notice. If Purchaser has not provided written notice to the Company of its intent to exercise its Tag-Along Rights within the time periods specified above, Purchaser will be conclusively deemed to have elected not to exercise such Tag-Along Rights; provided that in the event any of the information contemplated by the foregoing clauses (a) through (c) changes in any material respect, the Key Holders shall be obligated to provide a new Tag-Along Notice and the Purchaser's rights in respect thereof shall be renewed.

ARTICLE XIV.
EMPLOYEE ISSUANCES

Section 14.01 Subject to Section 14.02, in the event that the Company issues shares to Company employees pursuant to the Equity Incentive Plans ("**Equity Issuance**"), the Purchaser shall have the right to purchase, for the price per share used as the basis for the applicable Equity Issuance, additional shares as are necessary so that the Purchaser's percentage ownership on a fully diluted basis at the time of such Equity Issuance, is unchanged as a result of each such Equity Issuance.

Section 14.02 The right set forth in Section 14.01 shall not be available to Purchaser for Equity Issuances that will not result in an increase of the Company's Overhang by more than 10%. The "**Company's Overhang**" as of the date of the FMV Report relating to the Initial Offer is 24%.

Section 14.03 The provisions of this Article XIV shall terminate upon the earlier to occur of (i) a Significant Sale and (ii) an Effective Registration.

ARTICLE XV.
REGISTRATION RIGHTS

Section 15.01 *Demand Registration Rights*. Beginning eighteen (18) months following the Company's initial public offering, the Purchaser may request one (consummated) registration by the Company of its shares on Form S-1 and unlimited registrations on Form S-3 (to the extent available, and no more than two per year). A registration will count for this purpose only if (i) all shares requested to be registered are registered, and (ii) it is closed. The Company shall use commercially reasonable efforts to keep a Form S-3 shelf registration available for Purchaser to sell shares.

Section 15.02 *Piggyback Registration Rights*. If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than Purchaser) any of its securities under the Securities Act in connection with the public offering of such securities (other than in (a) a registration relating to the sale of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, or similar plan or (b) a registration relating to an SEC Rule 145 transaction), the Company shall, at such time, promptly give Purchaser notice of such registration. Upon the request of Purchaser given within twenty (20) days after such notice is given by the Company, the Company shall cause to be registered all of the capital stock that Purchaser has requested to be included in such registration, subject to cut back at the request of any underwriter used in connection with such registration (applied proportionately and otherwise equally with respect to all participants in such registration). The Company shall have the right to terminate or withdraw any registration initiated by it under this Article XV before the effective date of such registration, whether or not Purchaser has elected to include capital stock in such registration. The expenses of such withdrawn registration shall be borne by the Company.

Section 15.03 *Expenses*. The registration expenses (exclusive of stock transfer taxes, underwriting discounts and commissions) will be borne by the Company.

Section 15.04 *Registration Rights Agreement*. The foregoing registration rights will be set forth in a Registration Rights Agreement reasonably acceptable to Purchaser that contains the foregoing provisions and other customary terms and conditions, including customary indemnification provisions.

Section 15.05 Nothing contained in this Agreement shall restrict the Purchaser from acquiring securities of the Company in the open market following the initial public offering of the Company's common stock; provided that neither Purchaser nor any of its affiliates shall acquire the Company's Capital Stock to the extent that, following such acquisition, the Purchaser and its affiliates, together with all affiliates of the Company (including the Key Holders and directors and executive officers of the Company, and their respective affiliates), would hold such number of shares of Capital Stock equal to or exceeding 80% of the aggregate number of the Company's issued and outstanding shares of Capital Stock.

Section 15.06 No later than ninety (90) days following the execution of this Agreement the Company and Purchaser shall execute and deliver a registration rights agreement consistent with the provisions of this Article XV (a "**Registration Rights Agreement**"). In the event of any conflict between the provisions of this Article XV and the Registration Rights Agreement, the Registration Rights Agreement, upon its execution and delivery by each party thereto, shall prevail.

ARTICLE XVI.
PUBLICITY

Section 16.01 Except as may be permitted by the Strategic Collaboration Agreement or otherwise agreed by the Parties, no Party hereto shall (i) use the other Party's name, (ii) refer to the relationship between the Parties or (iii) disclose any terms or other information included in this Agreement, in each of clauses (i) through (iii) in any public communications, advertisement, news release or professional or trade publication, or in any other public manner without the other Party's prior written consent, unless required by law including any rule or regulation promulgated by the SEC or any other competent regulatory authority; it being agreed that, to the extent legally permissible, the party required to make such disclosure shall, at a reasonable time before making any such disclosure (including, without limitation, filing any document or material with the SEC, or any other competent regulatory authority), consult with the other Party regarding such disclosure and revise such disclosure as reasonably requested by the other Party.

ARTICLE XVII.
DISCLAIMER OF CORPORATE OPPORTUNITY DOCTRINE

The Company acknowledges that the Purchaser will likely have, from time to time, information that may be of interest to the Company ("**Information**") regarding a wide variety of matters including, by way of example only, (a) the Purchaser's technologies, plans and services, and plans and strategies relating thereto, (b) current and future investments the Purchaser has made, may make, may consider or may become aware of with respect to other companies and other technologies, products and services, including, without limitation, technologies, products and services that may be competitive with the Company's, and (c) developments with respect to the technologies, products and services, and plans and strategies relating thereto, of other

companies, including, without limitation, companies that may be competitive with the Company. The Company recognizes that a portion of such Information may be of interest to the Company. Company, as a material part of the consideration for this Agreement, agrees that the Purchaser and its representative shall have no duty to disclose any Information to the Company or permit the Company to participate in any projects or investments based on any Information, or to otherwise take advantage of any opportunity that may be of interest to the Company if it were aware of such Information, and hereby waives, to the extent permitted by law, any claim based on the corporate opportunity doctrine or otherwise that could limit the Purchaser's ability to pursue opportunities based on such Information or that would require the Purchaser or the representative to disclose any such Information to the Company or offer any opportunity relating thereto to the Company; provided, however, that the foregoing shall not relieve Purchaser from liability associated with the unauthorized disclosure of the Company's Confidential Material obtained pursuant to this Agreement. Nothing in this paragraph limits the obligations of the parties under the Strategic Collaboration Agreement.

ARTICLE XVIII.
WAIVER OF CLAIMS.

Section 18.01 Other than to the extent of any claim for a breach of a representation, warranty or covenant contained in a Stock Purchase Agreement delivered by a Selling Stockholder or in this Agreement by a Key Holder (and for the avoidance of doubt, excluding the Company), the Purchaser hereby waives and releases to the fullest extent permitted by law each Selling Stockholder and their respective successors, assigns, heirs, trustees, executors, representatives, agents, attorneys, members, managers, officers, directors and estates (the "**Selling Stockholder Released Parties**") from and against any claims, whether known or unknown and whether at law or in equity, arising from or related to the transactions contemplated by this Agreement, including any claim against the Company for any breach of this Agreement, any representation or warranty contained herein, or for the violation of any covenant contained herein (a "**Company Matter**"). The Purchaser hereby unconditionally and irrevocably agrees that it will not sue or initiate any other action against any Selling Stockholder Released Party on the basis of any Company Matter (for the avoidance of doubt excluding any breach of a representation, warranty or covenant contained in a Stock Purchase Agreement delivered by a Selling Stockholder or in this Agreement by a Key Holder). If the Purchaser violates the foregoing covenant, the Purchaser agrees to pay, in addition to such other damages as any Selling Stockholder Released Party may sustain as a result of such violation, all reasonable and documented attorneys' fees and costs incurred by such Selling Stockholder Released Party as a result of such violation. Without limiting the foregoing, the Purchaser acknowledges and agrees that all representations, warranties, covenants or other agreements made by the Company hereunder are made solely by the Company, and the Purchaser shall have no recourse against any Selling Stockholder Released Party in respect thereof. The Purchaser and the Company hereby agree that each Selling Stockholder Released Party is an express third party beneficiary of this Article XVIII and may enforce such Article XVIII as if a party to this Agreement. This Article XVIII shall survive any termination or expiration of this Agreement. Notwithstanding anything to the contrary, nothing in this Article XVIII shall waive or release, or otherwise affect Purchaser's rights in respect of any claims against the Company or the Company's rights in respect of any claims against the Purchaser.

ARTICLE XIX.
APPROVAL OF SALE OF DIRECT SHARES

To the extent any Direct Shares are sold to the Purchaser at any Closing, immediately prior to such Closing, the Company hereby irrevocably and unconditionally waives any and all transfer restrictions, rights of first refusal or other impediments to such sales imposed by or on behalf of the Company, including any notice periods related thereto. The Company hereby agrees that each Selling Stockholder is an express third party beneficiary of this Article XIX and may enforce such Article XIX as if a party to this Agreement.

ARTICLE XX.
NOTICES

All communications hereunder will be in writing and shall be deemed effectively given upon the earlier of actual receipt, or (a) personal delivery to the party to be notified, (b) when sent, if sent by electronic mail or facsimile during normal business hours of the recipient, and if not sent during normal business hours, then on the recipient's next business day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one (1) business day after deposit with a nationally recognized overnight courier, freight prepaid, specifying next business day delivery, with written verification of receipt, and, if sent to the Purchaser, will be mailed (including by e-mail with PDF attachment), delivered or telegraphed and confirmed to the Purchaser at Siemens AG Werner-von-Siemens-Str. 50 91052 Erlangen, Germany, Attention: Anton Steiger, E-mail: anton.steiger@siemens.com, or, if sent to the Company, will be mailed (including by e-mail with PDF attachment), delivered or telegraphed and confirmed to it at Bentley Systems, Incorporated, 685 Stockton Drive, Exton, PA 19341, Attention: General Counsel, E-mail: david.shaman@bentley.com.

ARTICLE XXI.
SUCCESSORS

This Agreement will inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns. No Party to this Agreement may assign such Agreement or its rights or obligations hereunder without the prior written consent of Purchaser, in the case of any assignment by the Company or any Key Holder, or the Company in the case of any assignment by the Purchaser; provided that Purchaser may freely assign this Agreement or any of its rights or obligations under this Agreement, in whole or in part, to one or more affiliates of Purchaser (with or without the prior written consent of any other Party), except that no such assignment shall relieve Purchaser of its obligations hereunder except to the extent that such obligations are actually performed by any such affiliate.

ARTICLE XXII.
COUNTERPARTS

This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, but all such counterparts shall together constitute one and the same Agreement.

ARTICLE XXIII.
TERM OF AGREEMENT; TERMINATION

The obligations of the Parties pursuant to Article II shall remain in effect until December 31, 2026 or until such time as the Purchaser purchases the Maximum Amount (it being understood and agreed that any future automatic increase to the then applicable Maximum Amount (whether or not such increase has occurred) shall be given effect as if it has occurred when determining the Maximum Amount for this purpose), whichever occurs first, unless otherwise terminated by mutual written agreement of the Purchaser and the Company. In addition, the Purchaser may elect to terminate this Agreement (including its obligations under Article II) by providing written notice of termination to the Company if the Strategic Collaboration Agreement has not been executed and delivered by the parties thereto on or prior to 30 April 2017. Either party may terminate this Agreement in the event of a material breach of this Agreement by the other party that is not cured by the breaching party within 30 days of the date the non-breaching party provides the breaching party with reasonably detailed written notice of said breach (including a description of the facts and circumstances giving rise to such breach and the applicable Section(s) of this Agreement that have been breached). The Parties agree that in the event of the termination (or anticipated termination) of Article II other than as a result of a breach, an Effective Registration or by mutual written agreement of Purchaser and the Company, the Parties shall engage in good faith discussions regarding the potential extension or renewal of Article II. This Agreement shall automatically terminate and be of no further force upon an Effective Registration. Notwithstanding anything to the contrary, Articles V, VI and VII shall survive to the extent provided in Article XXIV, and Articles IX (Confidentiality), X (Transfer Restrictions; Lock-Up), XV (Registration Rights), XVI (Publicity), XVII (Disclaimer of Corporate Opportunity Doctrine), XVIII (Waiver of Claims) and XX-XXVII, and Section 12.13 hereof, shall survive and remain in effect (in accordance with the respective terms of such Articles and Section) following any termination or expiration of this Agreement.

ARTICLE XXIV.
SURVIVAL OF WARRANTIES.

The respective representations and warranties of the Company shall survive for a period of one year following each Closing, except for the representations and warranties contained in Sections 5.01, 5.02, 5.03, 5.04, 5.07(1), 5.08(1) and 5.14 (collectively, the "**Fundamental Representations**") which, together with the representations and warranties of the Key Holders and Purchaser, shall survive for the applicable statute of limitations. The respective covenants of the Company, the Key Holders and the Purchaser shall survive each Closing and the termination or expiration of this Agreement in accordance with their terms.

ARTICLE XXV.
INDEMNIFICATION BY THE COMPANY

Section 25.01 Subject to the applicable limitations set forth in this Article XXV, at all times from and after the date hereof, the Company shall indemnify and hold harmless Purchaser from and against any and all losses, liabilities, damages, reductions in value, claims, fees, penalties, taxes, interest, costs and expenses, including reasonable costs of investigation and defense and reasonable fees and expenses of counsel, experts and other professionals, directly or

indirectly, whether or not due to a third-party claim, (collectively, "**Indemnifiable Damages**") incurred by Purchaser in connection with or arising from:

(a) any claims by third-parties arising out of, resulting from or in connection with the Purchaser's status as a stockholder of the Company, including those based on assertions that the Company, its subsidiaries or any of their respective directors, officers, employees or agents have, directly or indirectly, made, offered, promised or authorized any payment or gift of any money or anything of value to or for the benefit of any "foreign official" (as such term is defined in the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "**FCPA**")), foreign political party or official thereof or candidate for foreign political office for the purpose of (1) influencing any official act or decision of such official, party or candidate, (2) inducing such official, party or candidate to use his, her or its influence to affect any act or decision of a foreign governmental authority, or (3) securing any improper advantage, in the case of (1), (2) and (3) above in order to assist the Company or any of its affiliates in obtaining or retaining business for or with, or directing business to, any person;

(b) any claim for breach of the Fundamental Representations and/or the representations and warranties set forth in Article VII.

(c) any claims by any then-current or former holder of any capital stock of the Company (including any predecessors and successors), arising out of, resulting from or in connection with the transactions contemplated by this Agreement or any Stock Purchase Agreement, including the acquisition of the Initial Shares or any Subsequent Shares and the Company's acting as paying agent in connection therewith; or

(d) any failure by the Company or a Selling Stockholder to comply with applicable laws (including, without limitation, securities laws) or agreements with respect to (i) the making of the Initial Offer and any Subsequent Offer hereunder, (ii) the purchase by the Company of any Tendered Shares or any Subsequent Tendered Shares, or (iii) the sale by the Company of the Initial Shares or Subsequent Shares to the Purchaser.

Section 25.02 *Notice of Claims.* Purchaser seeking indemnification hereunder (the "**Indemnified Party**") shall give to the Company (the "**Indemnitor**") a notice (an "**Indemnification Claim Notice**") describing in reasonable detail the then known facts giving rise to the claim for indemnification hereunder and shall include in such Indemnification Claim Notice (if then known) the amount or the method of computation of the amount of such claim, and a reference to the provision of this Agreement or any other agreement, document or instrument executed hereunder or in connection herewith upon which such claim is based.

Section 25.03 *Resolution of Indemnifiable Claims*. After the giving of any Indemnification Claim Notice pursuant to Section 25.02, the amount of indemnification to which an Indemnified Party shall be entitled under this Article XXV shall be determined: (a) by the written agreement between the Indemnified Party and the Indemnitor; (b) by a final judgment or decree of any court of competent jurisdiction; or (c) by any other means to which the Indemnified Party and the Indemnitor shall agree. The judgment or decree of a court shall be deemed final when the time for appeal, if any, shall have expired and no appeal shall have been

taken or when all appeals taken shall have been finally determined. The Indemnified Party shall have the burden of proof in establishing the amount of Indemnifiable Damages suffered by it.

Section 25.04 *Determination of Indemnification Amount*.

(a) In no event shall Purchaser be entitled to recover or make a claim for any amounts in respect of consequential, special, incidental, opportunity cost or indirect damages or punitive damages, except, in each case, to the extent any such damages (i) are actually paid or payable to third-parties, or (ii) other than in the case of punitive damages, are a natural, probable and reasonably foreseeable result of a breach of this Agreement (or inaccuracy or untruth of representation or warranty) by the Company.

ARTICLE XXVI.
SPECIFIC PERFORMANCE

The Company and Purchaser acknowledge that the rights of each party to consummate the transactions contemplated hereby are unique and recognize and affirm that in the event of a breach of this Agreement by any party, money damages may be inadequate and the non-breaching party may have no adequate remedy at law. Accordingly, the parties agree that such non-breaching party shall have the right, in addition to any other rights and remedies existing in their favor at law or in equity, to enforce their rights and the other party's obligations hereunder not only by an action or actions for damages but also by an action or actions for specific performance, injunctive and/or other equitable relief (without posting of bond or other security).

ARTICLE XXVII.
APPLICABLE LAW; MISCELLANEOUS

This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware.

The Purchaser and the Company each hereby submit to the non-exclusive jurisdiction of the federal and state courts in the State of Delaware in any suit or proceeding arising out of or relating to this Agreement or the transactions contemplated hereby. The Purchaser and the Company each irrevocably and unconditionally waives any objection to the laying of venue of any suit or proceeding arising out of or relating to this Agreement or the transactions contemplated hereby in federal and state courts in the State of Delaware and irrevocably and unconditionally waives and agrees not to plead or claim in any such court that any such suit or proceeding in any such court has been brought in an inconvenient forum. The Purchaser and the Company hereby irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

For purposes of this Agreement: (i) words in the singular shall be held to include the plural and vice versa, and words of one gender shall be held to include the other gender as the context requires; (ii) references to the terms Article, Section, Disclosure Letter, paragraph, Exhibit and Schedule are references to the Articles, Sections, Disclosure Letter, paragraphs, Exhibits and Schedules to this Agreement unless otherwise specified; (iii) the terms "hereof," "herein," "hereby," "hereto" and derivative or similar words refer to this entire Agreement and

not to any particular Article, Section or other provision of this Agreement; (iv) references to "$" shall mean U.S. dollars; (v) the word "including" and words of similar import when used in this Agreement and the Ancillary Agreements shall mean "including without limitation"; (vi) the Parties have each participated in the negotiation and drafting of this Agreement and the Stock Purchase Agreements and if an ambiguity or question of interpretation should arise, this Agreement and the Stock Purchase Agreements shall be construed as if drafted jointly by the parties thereto and no presumption or burden of proof shall arise favoring or burdening either party by virtue of the authorship of any of the provisions in this Agreement or the Stock Purchase Agreements and (vii) references to any Party include such Party's successors and permitted assigns (including any successor of the Company in any Company Deemed Liquidation Event or successor to all or any material portion of the Company's assets, business or liabilities in connection with an IPO or similar offering).

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

COMPANY:

Bentley Systems, Incorporated

By: /s/ Gregory S. Bentley
Name: Gregory S. Bentley
Title: CEO, President and Chairman of the Board

PURCHASER:
Siemens AG

By: /s/ Karl-Heinz Seibert
Name: Karl-Heinz Seibert
Title: Corporate Vice President, Head of Mergers & Acquisitions and Post-Closing Management

By: /s/ Dr. Juergen Brandes
Name: Dr. Juergen Brandes
Title: CEO, Process Industries and Drives Division

KEY HOLDERS:
Barry J. Bentley

/s/ Barry J. Bentley

M. Therese V. Bentley

/s/ M. Therese V. Bentley

Barry J. Bentley 2007 Grantor Retained Annuity Trust – II
Barry J. Bentley 2012 Grantor Retained Annuity Trust
Barry J. Bentley 2012 Generation-Skipping Trust
The Bentley Children's Trust of December 11, 2007 FBO Katherine M. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Michael J. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Steven F. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Thomas G. Bentley

By: /s/ M. Therese V. Bentley
Name: M. Therese V. Bentley
Title: Trustee

KEY HOLDERS (cont):
Gregory S. Bentley

/s/ Gregory S. Bentley

Caroline M. Bentley 2009 GST Exempt Trust

By: /s/ Gregory S. Bentley
Name: Gregory S. Bentley
Title: Trustee

Gregory S. Bentley 2007 Gift Trust
Gregory S. Bentley 2009 Gift Trust
Gregory S. Bentley 2012 Grantor Retained Annuity Trust
Gregory S. Bentley 2014 Grantor Retained Annuity Trust

By: /s/ Caroline M. Bentley
Name: Caroline M. Bentley
Title: Trustee

Gregory S. Bentley 2009 GST Exempt Trust

By: /s/ Caroline M. Bentley
Name: Caroline M. Bentley
Title: Trustee

By: /s/ Patrick C. O'Donnell
Name: Patrick C. O'Donnell
Title: Trustee

KEY HOLDERS (cont.)

Keith A. Bentley

/s/ Keith A. Bentley

Corinne P. Bentley

/s/ Corinne P. Bentley

Keith A. Bentley 2007 Gift Trust FBO Charlene A. Clark
Keith A. Bentley 2007 Gift Trust FBO David A. Bentley
Keith A. Bentley 2007 Gift Trust FBO Jennifer R. Frank
Keith A. Bentley 2007 Gift Trust FBO Robert J. Gilchrist
Keith A. Bentley 2007 Gift Trust FBO Sarah L. Bentley
Keith A. Bentley 2007 Gift Trust FBO William K. Bentley
Keith A. Bentley 2012 for Children FBO David A. Bentley
Keith A. Bentley 2012 for Children FBO Sarah L. Bentley
Keith A. Bentley 2012 for Children FBO William K. Bentley
Keith A. Bentley 2012 for Step-Children FBO Charlene A. Clark
Keith A. Bentley 2012 for Step-Children FBO Jennifer R. Frank
Keith A. Bentley 2012 for Step-Children FBO Robert J. Gilchrist
Keith A. Bentley 2012 Grantor Retained Annuity Trust

By: /s/ Corinne P. Bentley
Name: Corinne P. Bentley
Title: Trustee

KEY HOLDERS (cont.)

Raymond B. Bentley

/s/ Raymond B. Bentley

Raymond B. Bentley 2012 Generation-Skipping Trust

By: /s/ Therese G. Bentley
Name: Therese G. Bentley
Title: Trustee

Exhibit A

Form of Stock Purchase Agreement

[attached]

Exhibit B

Key Holders

[attached]

Exhibit C

Strategic Collaboration Agreement Presentation

[attached]

AMENDMENT NO. 1

TO

BENTLEY SYSTEMS, INCORPORATED

COMMON STOCK PURCHASE AGREEMENT

This amendment No. 1 (this "**Amendment**") to the Bentley Systems, Incorporated Common Stock Purchase Agreement dated September 23, 2016 (the "**SPA**"), is entered into as of October ___, 2016 (the "**Effective Date**"), by and among Bentley Systems, Incorporated, a Delaware Corporation (the "**Company**"), Siemens AG, a stock corporation (Aktiengesellschaft) (the "**Purchaser**"), and the "Key Holders" signatory to the SPA. Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to such terms in the SPA.

WHEREAS, the Company, the Purchaser and the Key Holders (collectively, the "**Parties**") entered into the SPA on September 23, 2016, pursuant to which, among other things, the Parties agreed that Purchaser will purchase Class B Common Stock of the Company in a series of acquisitions up to a Maximum Amount, all as set forth in the SPA; and

WHEREAS, the Parties determined to execute this Amendment to the SPA in order to increase the Maximum Amount and to reflect certain other agreements.

NOW, THEREFORE, in consideration of the mutual covenants and promises hereinafter contained, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1) Amendment to the definition of "Maximum Amount". The fifth paragraph of Article I of the SPA is hereby amended and restated in its entirety and replaced with the following:

"For the purposes of this Agreement, "**Maximum Amount**" means $200,000,000 upon the execution of this Agreement; provided that upon the earlier to occur of (i) the fifth anniversary of this Agreement, and (ii) the acquisition by the Purchaser of $200,000,000 worth of shares of Class B Common Stock (as measured by the actual cash paid by the Purchaser hereunder), the "Maximum Amount" shall be automatically increased by $20,000,000 on each subsequent anniversary of the Agreement following such earlier occurrence, in each case, so long as the Strategic Collaboration Agreement remains in effect on each such subsequent anniversary. For the avoidance of doubt, the Maximum Amount shall exclude any purchases by the Purchaser pursuant to Article XII."

2) Amendment to Article XV.

(a) The heading of Article XV of the SPA is hereby revised to read as follows:

"ARTICLE XV REGISTRATION AND OTHER RIGHTS RELATING TO IPO"

(b) Section 15.04 of the SPA is hereby amended and restated in its entirety and replaced with the following:

"15.04. "*Registration Rights Agreement*. The foregoing registration rights will be set forth in a registration rights agreement consistent with the provisions of this Article XV (a "**Registration Rights Agreement**") reasonably acceptable to Purchaser that contains the foregoing provisions and other customary terms and conditions, including customary indemnification provisions. The Company and the Purchaser will execute and deliver the Registration Rights Agreement no later than one hundred and twenty (120) days following the execution of this Agreement. In the event of any conflict between the registration rights granted in this Article XV and the Registration Rights Agreement, the Registration Rights Agreement, upon its execution and delivery by each party thereto, shall prevail."

(c) Section 15.06 of the SPA is hereby amended and restated in its entirety and replaced with the following:

"15.06. The Company hereby covenants and agrees that upon an IPO: (i) the Class B Common Stock (or any successor class of stock into which it is converted or recapitalized on a one-for-one basis (or on a basis equal to that on which any other class of securities is converted or recapitalized, if greater than one-for-one) in connection with the IPO) will have voting rights and will be the class of securities offered to the public in such IPO (each of the foregoing being, the "**Offered Class**"); and (ii) the Company's Certificate of Incorporation and any other related documentation shall be amended to reflect the voting rights reflected in the voting structure contemplated by the draft S-1 attached hereto as **Exhibit D** (which voting rights shall apply to the Offered Class), including without limitation as such structure relates to voting ratios, "sunset" provisions and the like, and the Company shall not deviate from such structure in any manner adverse to the Purchaser in any material respect in its capacity as a holder of the Offered Class without the Purchaser's prior written consent, which may not be unreasonably withheld, conditioned or delayed."

3) Amendment to Exhibits. A new Exhibit D is hereby added to the SPA in the form of Exhibit D attached to this Amendment.

4) Continuing Effect of Agreement. Except as expressly set forth in this Amendment, all other provisions of the SPA remain unchanged and in full force and effect.

5) Miscellaneous. The provisions of Articles XX to XXIII, XXVI and XXVII of the SPA shall apply to this Amendment, as they apply to the SPA, *mutatis mutandis*.

[Signatures Follow]

IN WITNESS WHEREOF, the Parties have caused this Amendment No. 1 to the SPA to be executed and delivered as of the date first set forth above.

COMPANY:

Bentley Systems, Incorporated

By: /s/ Gregory S. Bentley
Name: Gregory S. Bentley
Title: CEO, President and Chairman of the Board

PURCHASER:
Siemens AG

By: /s/ Karl-Heinz Seiberth
Name: Karl-Heinz Seiberth
Title: Corporate Vice President, Head of Mergers & Acquisitions and Post-Closing Management

By: /s/ Dr. Juergen Brandes
Name: Dr. Juergen Brandes
Title: CEO, Process Industries and Drives Division

KEY HOLDERS:
Barry J. Bentley

/s/ Barry J. Bentley

M. Therese V. Bentley

/s/ M. Therese V. Bentley

Barry J. Bentley 2007 Grantor Retained Annuity Trust – II
Barry J. Bentley 2012 Grantor Retained Annuity Trust
Barry J. Bentley 2012 Generation-Skipping Trust
The Bentley Children's Trust of December 11, 2007 FBO Katherine M. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Michael J. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Steven F. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Thomas G. Bentley

By: /s/ M. Therese V. Bentley
Name: M. Therese V. Bentley
Title: Trustee

KEY HOLDERS (cont):
Gregory S. Bentley

/s/ Gregory S. Bentley

Caroline M. Bentley 2009 GST Exempt Trust

By: /s/ Gregory S. Bentley
Name: Gregory S. Bentley
Title: Trustee

Gregory S. Bentley 2007 Gift Trust
Gregory S. Bentley 2009 Gift Trust
Gregory S. Bentley 2012 Grantor Retained Annuity Trust
Gregory S. Bentley 2014 Grantor Retained Annuity Trust

By: /s/ Caroline M. Bentley
Name: Caroline M. Bentley
Title: Trustee

Gregory S. Bentley 2009 GST Exempt Trust

By: /s/ Caroline M. Bentley
Name: Caroline M. Bentley
Title: Trustee

By: /s/ Patrick C. O'Donnell
Name: Patrick C. O'Donnell
Title: Trustee

KEY HOLDERS (cont.)

Keith A. Bentley

/s/ Keith A. Bentley

Corrine P. Bentley

/s/ Corrine P. Bentley

Keith A. Bentley 2007 Gift Trust FBO Charlene A. Clark
Keith A. Bentley 2007 Gift Trust FBO David A. Bentley
Keith A. Bentley 2007 Gift Trust FBO Jennifer R. Frank
Keith A. Bentley 2007 Gift Trust FBO Robert J. Gilchrist
Keith A. Bentley 2007 Gift Trust FBO Sarah L. Bentley
Keith A. Bentley 2007 Gift Trust FBO William K. Bentley
Keith A. Bentley 2012 for Children FBO David A. Bentley
Keith A. Bentley 2012 for Children FBO Sarah L. Bentley
Keith A. Bentley 2012 for Children FBO William K. Bentley
Keith A. Bentley 2012 for Step-Children FBO Charlene A. Clark
Keith A. Bentley 2012 for Step-Children FBO Jennifer R. Frank
Keith A. Bentley 2012 for Step-Children FBO Robert J. Gilchrist
Keith A. Bentley 2012 Grantor Retained Annuity Trust

By: /s/ Corrine P. Bentley
Name: Corrine P. Bentley
Title: Trustee

KEY HOLDERS (cont.)

Raymond B. Bentley

/s/ Raymond B. Bentley

Raymond B. Bentley 2012 Generation-Skipping Trust

By: /s/ Therese G. Bentley
Name: Therese G. Bentley
Title: Trustee

Exhibit D

S-1

(see attached)

AMENDMENT NO. 2

TO

BENTLEY SYSTEMS, INCORPORATED

COMMON STOCK PURCHASE AGREEMENT

This amendment No. 2 (this "**Amendment**") to the Bentley Systems, Incorporated Common Stock Purchase Agreement dated September 23, 2016, as amended (the "**SPA**"), is entered into as of April __, 2018 (the "**Effective Date**"), by and among Bentley Systems, Incorporated, a Delaware Corporation (the "**Company**"), Siemens AG, a stock corporation (Aktiengesellschaft) (the "**Purchaser**"), and the "Key Holders" signatory to the SPA. Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to such terms in the SPA.

WHEREAS, the Company, the Purchaser and the Key Holders (collectively, the "**Parties**") entered into the SPA on September 23, 2016, pursuant to which, among other things, the Parties agreed that Purchaser will purchase certain Class B Common Stock of the Company in a series of acquisitions, all as set forth in the SPA; and

WHEREAS, the Parties determined to execute this Amendment to the SPA in order to increase the Maximum Amount, to modify certain provisions relating to the sale and purchase of Subsequent Shares and to extend the term of the SPA.

NOW, THEREFORE, in consideration of the mutual covenants and promises hereinafter contained, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1) Amendment to the definition of "Maximum Amount". The fifth paragraph of Article I of the SPA is hereby amended and restated in its entirety and replaced with the following:

> "For the purposes of this Agreement, "**Maximum Amount**" means $250,000,000 upon the execution of this Agreement; provided that upon the earlier to occur of (i) the fifth anniversary of this Agreement, and (ii) the acquisition by the Purchaser of $250,000,000 worth of shares of Class B Common Stock (as measured by the actual cash paid by the Purchaser hereunder), the "Maximum Amount" shall be automatically increased by $20,000,000 on each subsequent anniversary of the Agreement following such earlier occurrence, in each case, so long as the Strategic Collaboration Agreement remains in effect on each such subsequent anniversary. For the avoidance of doubt, the Maximum Amount shall exclude any purchases by the Purchaser pursuant to Article XII."

2) Amendment and Restatement of Section 2.02(d) of the SPA. Section 2.02(d) is hereby amended and restated in its entirety and replaced with the following:

(d)

(i) Promptly following each Subsequent Expiration Date with respect to a Subsequent Offer, the Company shall provide a written report (a "**Subsequent Purchase Report**") to the Purchaser setting forth, subject to subsection (ii), below, (A) the total number of shares of Class B Common Stock to be sold to Purchaser by the Company and pursuant to any Direct Sales at the applicable Additional Closing (as defined below) (collectively, the "**Subsequent Shares**"), (B) the number of shares of Class B Common Stock that were first issued by the Company (or as to shares of Restricted Stock, that first vested) during the period beginning on the date the last Subsequent Purchase Report was delivered hereunder and ending on the applicable Subsequent Expiration Date (such number of shares of Class B Common Stock, the "**Cap Amount**") and (C) the Carryforward (as defined below), if any.

(ii) Subject to the provisions of this subsection (ii), the Subsequent Shares shall include and consist of all of the following amounts of shares of Class B Common Stock and the Subsequent Purchase Report shall include a summary thereof (including the names of the record and beneficial owners thereof): (a) the number of Tendered Shares with respect to such Subsequent Offer (the "**Subsequent Tendered Shares**"); (b) the number of Direct Shares offered for sale by the Selling Stockholders with respect to such Subsequent Offer in accordance with Section 2.03 hereof, if any (as to which the Company shall waive any applicable transfer restrictions); and (c) the number of shares of Class B Common Stock actually purchased by the Company from employee stockholders pursuant to the Company's Equity Incentive Plans during the period beginning on the date the last Subsequent Purchase Report was delivered hereunder (or, in the case of the Initial Offer, the Purchase Report) and ending on the applicable Subsequent Expiration Date (the "**Subsequent Additional Shares**"); provided that, at its option and by notice to the Purchaser in any Subsequent Purchase Report, the Company may elect to reduce the number of Subsequent Shares to be sold to the Purchaser at the applicable Additional Closing (such reduction, the "**Offset**") by no more than the lesser of (x) thirty-five percent (35%) of the Subsequent Shares included in such Subsequent Purchase Report and (y) the Cap Amount. The number of shares elected by the Company to be included in the Offset shall be indicated in the applicable Subsequent Purchase Report. To the extent the Cap Amount exceeds the Offset in a given Subsequent Purchase Report, such excess (the "**Carryforward")** shall be carried forward and added to (and considered part of) the Cap Amount applicable to only the immediately succeeding Subsequent Purchase Report; it being understood and agreed that a Carryforward calculated in such immediately succeeding Subsequent Purchase Report shall not be further carried forward beyond such report and that future Subsequent Purchase Reports will calculate the applicable Carryforward *de novo* in accordance with this sentence.

(iii) The Company's delivery of a Subsequent Purchase Report shall create a binding obligation hereunder with respect to the applicable Subsequent Shares (x) on the Company to sell the Subsequent Tendered Shares and the Subsequent Additional Shares to the Purchaser at the applicable Additional Closing and (y) on the Purchaser to purchase such Subsequent Shares from the Company at such Additional Closing and to accept the offer by each Selling Stockholder to purchase the Direct Shares on and subject

to the terms of this Agreement and each applicable Stock Purchase Agreement, at the applicable Additional Closing:

3) Amendment to Article XXIII of the SPA. The first sentence of Article XXIII of the SPA is hereby amended and restated in its entirety to read as follows:

The obligations of the Parties pursuant to Article II shall remain in effect until December 31, 2030 or until such time as the Purchaser purchases the Maximum Amount (it being understood and agreed that any future automatic increase to the then applicable Maximum Amount (whether or not such increase has occurred) shall be given effect as if it has occurred when determining the Maximum Amount for this purpose), whichever occurs first, unless otherwise terminated by mutual written agreement of the Purchaser and the Company.

4) Continuing Effect of Agreement. Except as expressly set forth in this Amendment, all other provisions of the SPA remain unchanged and in full force and effect.

5) Miscellaneous. The provisions of Articles XX to XXIII, XXVI and XXVII of the SPA shall apply to this Amendment, as they apply to the SPA, *mutatis mutandis*.

[Signatures Follow]

IN WITNESS WHEREOF, the Parties have caused this Amendment No. 2 to the SPA to be executed and delivered as of the date first set forth above.

COMPANY:

Bentley Systems, Incorporated

By: /s/ Gregory S. Bentley
Name: Gregory S. Bentley
Title: CEO, President and Chairman of the Board

PURCHASER:
Siemens AG

By: /s/ Karl-Heinz Seiberth
Name: Karl-Heinz Seiberth
Title: Corporate Vice President, Head of Mergers & Acquisitions and Post-Closing Management

By: /s/ Dr. Karin Flesch
Name: Dr. Karin Flesch
Title: Senior Vice President

KEY HOLDERS:
Barry J. Bentley

/s/ Barry J. Bentley

M. Therese V. Bentley

/s/ M. Therese V. Bentley

Barry J. Bentley 2007 Grantor Retained Annuity Trust – II
Barry J. Bentley 2012 Grantor Retained Annuity Trust
Barry J. Bentley 2012 Generation-Skipping Trust
The Bentley Children's Trust of December 11, 2007 FBO Katherine M. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Michael J. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Steven F. Bentley
The Bentley Children's Trust of December 11, 2007 FBO Thomas G. Bentley

By: /s/ M. Therese V. Bentley
Name: M. Therese V. Bentley
Title: Trustee

KEY HOLDERS (cont):
Gregory S. Bentley

/s/ Gregory S. Bentley

Caroline M. Bentley 2009 GST Exempt Trust

By: /s/ Gregory S. Bentley
Name: Gregory S. Bentley
Title: Trustee

Gregory S. Bentley 2007 Gift Trust
Gregory S. Bentley 2009 Gift Trust
Gregory S. Bentley 2012 Grantor Retained Annuity Trust
Gregory S. Bentley 2014 Grantor Retained Annuity Trust

By: /s/ Caroline M. Bentley
Name: Caroline M. Bentley
Title: Trustee

Gregory S. Bentley 2009 GST Exempt Trust

By: /s/ Caroline M. Bentley
Name: Caroline M. Bentley
Title: Trustee

By: /s/ Patrick C. O'Donnell
Name: Patrick C. O'Donnell
Title: Trustee

KEY HOLDERS (cont.)

Keith A. Bentley

/s/ Keith A. Bentley

Corrine P. Bentley

/s/ Corrine P. Bentley

Keith A. Bentley 2007 Gift Trust FBO Charlene A. Clark
Keith A. Bentley 2007 Gift Trust FBO David A. Bentley
Keith A. Bentley 2007 Gift Trust FBO Jennifer R. Frank
Keith A. Bentley 2007 Gift Trust FBO Robert J. Gilchrist
Keith A. Bentley 2007 Gift Trust FBO Sarah L. Bentley
Keith A. Bentley 2007 Gift Trust FBO William K. Bentley
Keith A. Bentley 2012 for Children FBO David A. Bentley
Keith A. Bentley 2012 for Children FBO Sarah L. Bentley
Keith A. Bentley 2012 for Children FBO William K. Bentley
Keith A. Bentley 2012 for Step-Children FBO Charlene A. Clark
Keith A. Bentley 2012 for Step-Children FBO Jennifer R. Frank
Keith A. Bentley 2012 for Step-Children FBO Robert J. Gilchrist
Keith A. Bentley 2012 Grantor Retained Annuity Trust

By: /s/ Corrine P. Bentley
Name: Corrine P. Bentley
Title: Trustee

KEY HOLDERS (cont.)

Raymond B. Bentley

/s/ Raymond B. Bentley

Raymond B. Bentley 2012 Generation-Skipping Trust

By: /s/ Therese G. Bentley
Name: Therese G. Bentley
Title: Trustee

Exhibit 10.3

Execution Version

REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this "**Agreement**") is made and entered into as of January 24, 2017 between Bentley Systems, Incorporated, a Delaware corporation (the "**Company**"), and Siemens Corporation, a Delaware corporation (the "**Investor**").

WHEREAS, the Company and an Affiliate of the Investor are parties to a Common Stock Purchase Agreement dated September 23, 2016, as amended by Amendment No. 1 dated October 28, 2016 and from the time to time hereafter (the "**Purchase Agreement**"), the rights under which were assigned to the Investor and pursuant to which the Investor has acquired and will acquire shares of the Company's Class B Non-Voting Common Stock, par value $0.01 per share (the "**Class B Common Stock**"); and

WHEREAS, pursuant to Article XV of the Purchase Agreement, the parties hereto desire to enter into this Agreement in order to grant certain registration rights to the Investor as set forth below.

NOW, THEREFORE, in consideration of the foregoing and the mutual and dependent covenants hereinafter set forth, the parties hereto agree as follows:

1. Defined Terms. As used in this Agreement, the following terms shall have the following meanings:

"**Affiliate**" of a Person means any other Person that directly, or indirectly through one or more intermediaries, controls or is controlled by, or is under common control with, such Person. The term "control" (including the terms "controlling," "controlled by" and "under common control with") means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract, or otherwise.

"**Agreement**" has the meaning set forth in the preamble.

"**Blackout Period**" has the meaning set forth in **Section 2(d)**.

"**Board**" means the board of directors (or any successor governing body) of the Company.

"**Class B Common Stock**" has the meaning set forth in the preamble.

"**Commission**" means the Securities and Exchange Commission or any other federal agency administering the Securities Act and the Exchange Act at the time.

"**Common Stock**" means, collectively, (i) the Company's Class A Common Stock, par value $0.01 per share, (ii) the Class B Common Stock and (iii) any other series or class of common equity securities of the Company established following the date of this Agreement.

"**Company**" has the meaning set forth in the preamble and includes the Company's successors by merger, acquisition, reorganization or otherwise.

"**Controlling Person**" has the meaning given to such term in Section 15 of the Securities Act and Section 20 of the Exchange Act.

"**Demand Registration**" has the meaning set forth in **Section 2(c)**.

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"**Governmental Authority**" means any federal, state, local or foreign government or political subdivision thereof, or any agency or instrumentality of such government or political subdivision, or any self-regulated organization or other non-governmental regulatory authority or quasi-governmental authority (to the extent that the rules, regulations or orders of such organization or authority have the force of law), or any arbitrator, court or tribunal of competent jurisdiction.

"**Inspectors**" has the meaning set forth in **Section 5(h)**.

"**Investor**" has the meaning set forth in the preamble.

"**Investor Information**" has the meaning set forth in **Section 7(a)**.

"**IPO**" means an initial public offering of Common Stock pursuant to an effective Registration Statement filed under the Securities Act (other than a registration (i) pursuant to a Registration Statement on Form S-8 (or other registration solely relating to an offering or sale to employees or directors of the Company pursuant to any employee stock plan or other employee benefit arrangement) or (ii) pursuant to a Registration Statement on Form S-4 (or similar form that relates to a transaction subject to Rule 145 under the Securities Act or any successor rule thereto)).

"**Long-Form Registration**" has the meaning set forth in **Section 2(a)**.

"**Person**" means an individual, corporation, partnership, joint venture, limited liability company, Governmental Authority, unincorporated organization, trust, association or other entity.

"**Piggyback Registration**" has the meaning set forth in **Section 3(a)**.

"**Piggyback Registration Statement**" has the meaning set forth in **Section 3(a)**.

"**Prospectus**" means the prospectus or prospectuses included in any Registration Statement (including, without limitation, a prospectus that includes any information previously omitted from a prospectus filed as part of an effective Registration Statement in reliance on Rule 430A under the Securities Act or any successor rule thereto), as amended or supplemented by any prospectus supplement with respect to the terms of the offering of any portion of the Registrable Securities covered by such Registration Statement and by all other amendments and supplements to the prospectus, including post-effective amendments and all material incorporated by reference in such prospectus or prospectuses.

"**Purchase Agreement**" has the meaning set forth in the recitals.

"**Purchased Shares**" means (i) the shares of Class B Common Stock acquired by the Investor pursuant to the Purchase Agreement and (ii) any shares of Common Stock acquired by the Investor from the Company or from other stockholders of the Company in privately negotiated transactions or otherwise following the date of this Agreement and prior to the consummation of an IPO, in each case only to the extent acquired pursuant to or in accordance with the Purchase Agreement.

"**Records**" has the meaning set forth in **Section 5(h)**.

"**Registrable Securities**" means (a) the Purchased Shares, and (b) any shares of Common Stock issued, issuable or distributed with respect to any Purchased Shares by way of a stock dividend or stock split or in exchange for or upon conversion of such shares or otherwise in connection with a combination of shares, distribution, recapitalization, merger, consolidation, other reorganization or other similar event with respect to the Purchased Shares; provided, however, that such securities shall cease to be Registrable Securities when (i) a Registration Statement with respect to such securities has been declared effective under the Securities Act and such securities have been disposed of pursuant to such Registration Statement, (ii) such securities are sold to the public pursuant to Rule 144 under the Securities Act (or any similar provision then in force, but not Rule 144A), (iii) such securities become eligible for sale pursuant to Rule 144 without volume or manner-of-sale restrictions and without the requirement for the Company to be in compliance with the current public information requirement under Rule 144(c)(1), and the restrictive legend either has been removed from such securities or could be removed from such securities upon the request of the Investor without the Company's assistance (other than, if required by the transfer agent, the delivery of a customary legal opinion from counsel to the Company), (iv) such securities are otherwise transferred or held by any Person other than the Investor or one of its Affiliates, or (v) such securities have ceased to be outstanding. Upon request of the Investor for which the conditions under Rule 144 for removal of restrictive legends on its Registrable Securities have been met, the Company agrees to cause counsel representing the Company to promptly issue an opinion letter to the Company's transfer agent that the restrictive legend thereon may be removed in accordance with Rule 144 and other applicable regulations of the Commission.

"**Registration Date**" means the date on which the Company becomes subject to Section 13(a) or Section 15(d) of the Exchange Act.

"**Registration Statement**" means any registration statement of the Company, including the Prospectus, amendments and supplements to such registration statement, including post-effective amendments, all exhibits and all material incorporated by reference in such registration statement.

"**Rule 144**" means Rule 144 under the Securities Act or any successor rule thereto.

"**Securities Act**" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

"**Selling Expenses**" means all underwriting discounts, selling commissions and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for the Investor.

"**Shelf Registration**" has the meaning set forth in **Section 2(c)**.

"**Shelf Registration Statement**" has the meaning set forth in **Section 2(c)**.

"**Short-Form Registration**" has the meaning set forth in **Section 2(b)**.

"**Suspension Period**" has the meaning set forth in **Section 5(g)**.

2. Demand Registration.

(a) Beginning eighteen (18) months following the consummation of the Company's IPO, the Investor may request registration under the Securities Act of all or any portion of its Registrable Securities pursuant to a Registration Statement on Form S-1 or any successor form thereto (each, a "**Long-Form Registration**"). Each request for a Long-Form Registration shall specify the number of Registrable Securities requested to be included in the Long-Form Registration. The Company shall prepare and file with the Commission a Registration Statement on Form S-1 or any successor form thereto covering all of the Registrable Securities that the Investor has requested to be included in such Long-Form Registration within sixty (60) days after the date on which the initial request is given and shall use its commercially reasonable efforts to cause such Registration Statement to be declared effective by the Commission within one-hundred eighty (180) days after the date on which the initial request is given. Subject to the last sentence of **Section 2(d)**, the Company shall not be required to effect a Long-Form Registration more than once; provided, that a Registration Statement shall not count as a Long-Form Registration requested under this **Section 2(a)** unless and until it has become effective under the Securities Act and, subject to the proviso in **Section 2(f)**, the Investor is permitted to register all of the Registrable Securities requested to be included in such registration and consummates the sale of any Registrable Securities thereunder.

(b) Following the consummation of the Company's IPO, the Company shall use its commercially reasonable efforts to qualify and remain qualified to register the offer and sale of securities under the Securities Act pursuant to a Registration Statement on Form S-3 or any successor form thereto. Beginning eighteen (18) months following the consummation of the Company's IPO, if the Company shall have qualified for the use of a Registration Statement on Form S-3 or any successor form thereto, the Investor shall have the right to request an unlimited number of registrations under the Securities Act of all or any portion of its Registrable Securities pursuant to a Registration Statement on Form S-3 or any successor short-form Registration Statement thereto (each, a "**Short-Form Registration**"). Each request for a Short-Form Registration shall specify the number of Registrable Securities requested to be included in the Short-Form Registration. Upon such request, the Company shall prepare and file with the Commission a Registration Statement on Form S-3 or any successor form thereto covering all of the Registrable Securities that the Investor has requested to be included in such Short-Form Registration within sixty (60) days after the date on which the initial request is given and shall

use its commercially reasonable efforts to cause such Registration Statement to be declared effective under the Securities Act by the Commission within one-hundred fifty (150) days after the date on which the initial request is given. Subject to the last sentence of **Section 2(d)**, the Company shall not be required to effect a Short-Form Registration more than twice during any twelve-month period; provided, that a Registration Statement shall not count as a Short-Form Registration requested under this **Section 2(b)** unless and until it has become effective under the Securities Act and, subject to the proviso in **Section 2(f)**, the Investor is permitted to register all of the Registrable Securities requested to be included in such registration and consummates the sale of any Registrable Securities thereunder.

(c) Beginning eighteen (18) months following the consummation of the Company's IPO, if the Company shall have qualified for the use of a Registration Statement on Form S-3 or the then appropriate form for an offering to be made on a delayed or continuous basis pursuant to Rule 415 under the Securities Act or any successor rule thereto (a "**Shelf Registration Statement**"), the Investor shall have the right to request an unlimited number of registrations under the Securities Act of all or any portion of its Registrable Securities for an offering on a delayed or continuous basis pursuant to Rule 415 under the Securities Act or any successor rule thereto (each, a "**Shelf Registration**" and, together with any Long-Form Registration and Short-Form Registration, a "**Demand Registration**"). Each request for a Shelf Registration shall specify the number of Registrable Securities requested to be included in the Shelf Registration. The Company shall prepare and file with the Commission a Shelf Registration Statement covering all of the Registrable Securities that the Investor shall have requested to be included in such Shelf Registration within sixty (60) days after the date on which the initial request is given and shall use its commercially reasonable efforts to cause such Shelf Registration Statement to be declared effective by the Commission within one-hundred fifty (150) days after the date on which the initial request is given. Subject to the last sentence of **Section 2(d)**, the Company shall not be required to effect a Shelf Registration more than twice during any twelve-month period; provided, that a Registration Statement shall not count as a Shelf Registration requested under this **Section 2(c)** unless and until it has become effective under the Securities Act and, subject to the proviso in **Section 2(f)**, the Investor is permitted to register all of the Registrable Securities requested to be included in such registration and consummates the sale of any Registrable Securities thereunder.

(d) Notwithstanding any other provision of this Agreement, the Company shall not be obligated to file a Registration Statement (or any amendment thereto) or otherwise effect a Demand Registration within one-hundred twenty (120) days after the effective date of a Registration Statement pursuant to which the Investor was permitted to register the offer and sale under the Securities Act, and consummated the sale of any Registrable Securities thereunder. In addition, the Company shall not be obligated to file a Registration Statement (or any amendment thereto) or otherwise effect a Demand Registration for a period of up to one-hundred fifty (150) days if the Board determines in its reasonable good faith judgment that the filing of such Registration Statement or the effectuation of such Demand Registration would (i) materially interfere with an acquisition, corporate organization, financing, securities offering or other

similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act (any such period, a "**Blackout Period**"); provided, however, that in no event shall the number of days in any Blackout Period, plus the number of days in any Suspension Period (as defined in **Section 5(g)**), exceed an aggregate of one-hundred eighty (180) days during any twelve-month period. In the event of a Blackout Period, the Investor shall be entitled to withdraw its request for Demand Registration and, if such request for a Demand Registration is withdrawn, such Demand Registration shall not count as one of the permitted Demand Registrations hereunder and the Company shall pay all registration expenses in connection with such registration.

(e) If the Investor elects to distribute the Registrable Securities covered by its request for Demand Registration in an underwritten offering, it shall so advise the Company as a part of its request made pursuant to **Section 2(a)**, **Section 2(b)** or **Section 2(c)**. The Investor shall select the investment banking firm or firms to act as the managing underwriter or underwriters in connection with such offering; provided, that such selection shall be subject to the consent of the Company, which consent shall not be unreasonably withheld or delayed.

(f) If a Demand Registration involves an underwritten offering and the managing underwriter of the requested Demand Registration advises the Company and the Investor in writing that in its reasonable and good faith opinion the number of shares of Common Stock proposed to be included in the Registration Statement, including all Registrable Securities and all other shares of Common Stock proposed to be included in such underwritten offering, exceeds the number of shares of Common Stock that can be sold in such underwritten offering and/or the number of shares of Common Stock proposed to be included in such Demand Registration would adversely affect the price per share of the Common Stock proposed to be sold in such underwritten offering or would otherwise materially and adversely affect the timing or distribution of the Common Stock proposed to be sold in such offering, the Company shall include in such Registration Statement (i) first, all of the shares of Common Stock that the Investor proposes to sell, and (ii) second, the shares of Common Stock proposed to be included therein by any other Persons (including shares of Common Stock to be sold for the account of the Company and/or other holders of Common Stock) allocated among such Persons in such manner as they may agree; provided, that if more than 20% of the Registrable Securities requested to be included in such registration by the Investor are excluded pursuant to the terms of this **Section 2(f)**, the offering shall not be deemed to be a Demand Registration for purposes of this **Section 2**.

(g) The Company shall not be obligated to take any action to effect any Demand Registration if the aggregate value of the Registrable Securities proposed to be sold by the Investor is not at least fifty million dollars ($50 million) (calculated as of the close of trading on the date the Investor requests such Demand Registration), unless all of the Investor's Registrable Securities are proposed to be sold.

3. Piggyback Registration.

(a) Whenever the Company proposes to register the offer and sale of any shares of its Common Stock under the Securities Act for sale to the public (other than a registration (i) pursuant to a Registration Statement on Form S-8 (or other registration solely relating to an offering or sale to employees or directors of the Company pursuant to any employee stock plan or other employee benefit arrangement), (ii) pursuant to a Registration Statement on Form S-4 (or similar form that relates to a transaction subject to Rule 145 under the Securities Act or any successor rule thereto), or (iii) in connection with any dividend or distribution reinvestment or similar plan), whether for its own account or for the account of one or more stockholders of the Company and the form of Registration Statement (a "**Piggyback Registration Statement**") to be used permits the registration of Registrable Securities (a "**Piggyback Registration**"), the Company shall give prompt written notice (in any event no later than thirty (30) days prior to the filing of such Registration Statement) to the Investor of its intention to effect such a registration and, subject to **Section 3(b)** and **Section 3(c)**, shall include in such registration all Registrable Securities with respect to which the Company has received written requests for inclusion from the Investor within twenty (20) days after the Company's notice has been given to the Investor. The Company may postpone or withdraw proceeding with a Piggyback Registration at any time in its sole discretion if it shall at the same time withdraw or cease proceeding with the registration of all other equity securities originally proposed to be registered. A Piggyback Registration shall not be considered a Demand Registration for purposes of **Section 2**.

(b) If a Piggyback Registration is initiated as an underwritten offering and the managing underwriter advises the Company and the Investor (if the Investor has elected to include Registrable Securities in such Piggyback Registration) in writing that in its reasonable and good faith opinion the number of shares of Common Stock proposed to be included in such registration or takedown, including all Registrable Securities and all other shares of Common Stock proposed to be included in such underwritten offering, exceeds the number of shares of Common Stock that can be sold in such underwritten offering and/or the number of shares of Common Stock proposed to be included in such registration or takedown would materially and adversely affect the price per share of the Common Stock proposed to be sold in such offering or would otherwise materially and adversely affect the timing or distribution of the Common Stock proposed to be sold in such offering, the Company shall include in such registration or takedown the shares of Common Stock requested to be included therein by the Company and by holders of Common Stock (including the Investor), allocated on a pro rata basis; provided that in the case of a Piggyback Registration initiated on behalf of the Company as a primary offering, the Company shall include in such registration or takedown (i) first, the shares of Common Stock that the Company proposes to sell; (ii) second, the shares of Common Stock requested to be included therein by the Investor; and (iii) third, the shares of Common Stock requested to be included therein by holders of Common Stock other than the Investor, allocated among such holders in such manner as they may agree.

(c) If any Piggyback Registration is initiated as an underwritten offering on behalf of the Company or by holders of Common Stock other than Registrable Securities, the Company shall select the investment banking firm or firms to act as the managing underwriter or underwriters in connection with such offering, and shall establish the price and other terms thereof in its reasonable discretion.

4. Lock-up Agreement. In connection with an IPO, upon the request of the managing underwriter in such offering, the Investor shall not, without the prior written consent of such managing underwriter, during the period commencing on the effective date of such registration and ending on the date specified by such managing underwriter (such period not to exceed 180 days), (a) offer, pledge, sell, contract to sell, grant any option or contract to purchase, purchase any option or contract to sell, hedge the beneficial ownership of or otherwise dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into, exercisable for or exchangeable for shares of Common Stock (other than those included in the IPO), or (b) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (a) or (b) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise. The foregoing provisions shall be applicable to the Investor only to the extent all executive officers and directors of the Company are subject to substantially the same restrictions. The Investor shall execute and deliver such other agreements as may be reasonably requested by the Company or the managing underwriter that are consistent with the foregoing or that are necessary to give further effect thereto.

5. Registration Procedures. If and whenever the Investor requests that the offer and sale of any Registrable Securities be registered under the Securities Act pursuant to the provisions of this Agreement, the Company shall use its commercially reasonable efforts to effect the registration of the offer and sale of such Registrable Securities under the Securities Act in accordance with the intended method of disposition thereof, and pursuant thereto the Company shall as soon as reasonably practicable and as applicable:

(a) subject to **Section 2(a)**, **Section 2(b)** and **Section 2(c)**, prepare and file with the Commission, as specified in this Agreement, each Registration Statement covering such Registrable Securities, which Registration Statement shall comply as to form in all material respects with the requirements of the Securities Act and include all financial statements required by the Commission to be filed therewith, and use its commercially reasonable efforts to cause such Registration Statement to be declared and remain effective as set forth in **Section 2**;

(b) prepare and file with the Commission such amendments, post-effective amendments and supplements to such Registration Statement and the Prospectus used in connection therewith as may be necessary to keep such Registration Statement effective for a period of not less than ninety (90) days (or one year with respect to a Shelf Registration), or if earlier, until all of such Registrable Securities have been disposed of and to comply with the provisions of the Securities Act with respect to the disposition of such Registrable Securities in accordance with the intended methods of disposition set forth in such Registration Statement;

(c) within a reasonable time before filing such Registration Statement, Prospectus or amendments or supplements thereto with the Commission, furnish to the Investor's counsel copies of such documents proposed to be filed, which documents shall be subject to review and comment by such counsel;

(d) furnish to the Investor, without charge, such number of copies of each Prospectus, including each preliminary Prospectus, and any amendment or supplement thereto, and such other documents as the Investor may reasonably request, in order to facility the public sale or other disposition of the Registrable Securities; the Company hereby consents to the use of such Prospectus, including each preliminary Prospectus, by the Investor, if any, in connection with the offering and sale of the Registrable Securities covered by any such Prospectus;

(e) notify the Investor, promptly after the Company receives notice thereof, of the time when such Registration Statement has been declared effective and when any post-effective amendment thereto has become effective or a supplement to any Prospectus forming a part of such Registration Statement has been filed with the Commission;

(f) use its commercially reasonable efforts to register or qualify such Registrable Securities under such other securities or "blue sky" laws of such jurisdictions in the United States as the Investor reasonably requests and do any and all other acts and things that may be reasonably necessary or advisable to enable the Investor to consummate the disposition in such jurisdictions of the Registrable Securities owned by the Investor; provided, that the Company shall not be required to qualify generally to do business, subject itself to general taxation or consent to general service of process in any jurisdiction where it would not otherwise be required to do so but for this **Section 5(f)**;

(g) notify the Investor, at any time when a Prospectus relating thereto is required to be delivered under the Securities Act, of the happening of any event that would cause the Prospectus included in such Registration Statement to contain an untrue statement of a material fact or omit any fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading, and, at the request of the Investor, prepare a supplement or amendment to such Prospectus so that, as thereafter delivered to the purchasers of such Registrable Securities, such Prospectus shall not contain an untrue statement of a material fact or omit to state any fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading; upon receipt of any notice from the Company of any event of the kind described in this **Section 5(g)**, **Section 5(n)** or **Section 5(o)**, the Investor shall forthwith discontinue disposition of the Registrable Securities pursuant to the Registration Statement covering such Registrable Securities (such period, a "**Suspension Period**") until the Investor is advised in writing by the Company that the use of the Prospectus may be resumed and is furnished with a supplemented or amended Prospectus, to the extent applicable, and if so directed by the Company, the Investor shall deliver to the Company (at the Company's expense) all copies, other than permanent file copies then in the Investor's possession, of the Prospectus covering such Registrable Securities at the time of receipt of such notice;

(h) make available for inspection upon reasonable notice and during normal business hours by the Investor, any underwriter participating in any disposition pursuant to such Registration Statement and any attorney, accountant or other agent retained by the Investor or such underwriter (collectively, the "**Inspectors**"), all financial and other records, pertinent corporate documents and properties of the Company (collectively, the "**Records**"), as shall be reasonably necessary to enable them to exercise their due diligence responsibility, and cause the Company's officers, directors and employees to supply all information reasonably requested by any such Inspector in connection with such Registration Statement, provided, that, unless the disclosure of such Records is necessary to avoid or correct a misstatement or omission in the Registration Statement or the release of such Records is ordered pursuant to a subpoena or other order from a court of competent jurisdiction, the Company shall not be required to provide any information under this **Section 5(h)** if (i) the Company believes, after consultation with counsel for the Company, that to do so would cause the Company to forfeit an attorney-client privilege that was applicable to such information or (ii) if either (A) the Company has requested and been granted from the Commission confidential treatment of such information contained in any filing with the Commission or documents provided supplementally or otherwise or (B) the Company reasonably determines in good faith that such Records are confidential and so notifies the Inspectors in writing, unless prior to furnishing any such information with respect to clause (ii) the Inspector requesting such information agrees to enter into a confidentiality agreement in customary form and subject to customary exceptions; and provided, further, that the Investor shall, upon becoming aware that disclosure of such Records is sought in a court of competent jurisdiction, give notice to the Company and allow the Company, at its expense, to undertake appropriate action and to prevent disclosure of the Records deemed confidential;

(i) provide a transfer agent and registrar (which may be the same entity) for all such Registrable Securities not later than the effective date of such registration;

(j) use its commercially reasonable efforts to cause such Registrable Securities to be listed on each securities exchange on which the Common Stock is then listed, if any;

(k) in connection with an underwritten offering, enter into such customary agreements (including underwriting and lock-up agreements in customary form) and take all such other customary actions as the Investor or the managing underwriter of such offering reasonably request in order to expedite or facilitate the disposition of such Registrable Securities (including, without limitation, making appropriate officers of the Company available to participate in "road show" and other customary marketing activities (including one-on-one meetings with prospective purchasers of the Registrable Securities));

(l) otherwise use its commercially reasonable efforts to comply with all applicable rules and regulations of the Commission and make generally available to its security holders an earnings statement (in a form that satisfies the provisions of Section 11(a) of the Securities Act and Rule 158 under the Securities Act or any successor rule thereto) no later than 30 days after the end of the 12-month period beginning with the first day of the Company's first full fiscal

quarter after the effective date of such Registration Statement, which earnings statement shall cover said 12-month period; and

(m) without limiting **Section 5(f)**, use its commercially reasonable efforts to cause such Registrable Securities to be registered with or approved by such other governmental agencies or authorities as may be necessary by virtue of the business and operations of the Company to enable the Investor to consummate the disposition of such Registrable Securities in accordance with its intended method of distribution thereof;

(n) notify the Investor promptly of any request by the Commission for the amending or supplementing of such Registration Statement or Prospectus or for additional information;

(o) advise the Investor, promptly after it shall receive notice or obtain knowledge thereof, of the issuance of any stop order by the Commission suspending the effectiveness of such Registration Statement or the initiation or threatening of any proceeding for such purpose and promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal at the earliest possible moment if such stop order should be issued;

(p) cooperate with the Investor to facilitate the timely preparation and delivery of certificates representing the Registrable Securities to be sold pursuant to such Registration Statement or Rule 144 free of any restrictive legends and representing such number of shares of Common Stock and registered in such names as the Investor may reasonably request a reasonable period of time prior to sales of Registrable Securities pursuant to such Registration Statement or Rule 144; provided, that the Company may satisfy its obligations hereunder without issuing physical stock certificates through the use of the book-entry facilities of The Depository Trust Company;

(q) not later than the effective date of such Registration Statement, provide a CUSIP number for all Registrable Securities and provide the applicable transfer agent with printed certificates for the Registrable Securities that are in a form eligible for deposit with The Depository Trust Company; provided, that the Company may satisfy its obligations hereunder without issuing physical stock certificates through the use of the book-entry facilities of The Depository Trust Company;

(r) take no direct or indirect action prohibited by Regulation M under the Exchange Act; provided, that, to the extent that any prohibition is applicable to the Company, the Company will take reasonable actions to make any such prohibition inapplicable; and

(s) otherwise use its commercially reasonable efforts to take any other steps necessary to effect the registration of such Registrable Securities contemplated hereby.

6. Expenses. All expenses (other than Selling Expenses) incurred by the Company in complying with its obligations pursuant to this Agreement and in connection with the registration and disposition of Registrable Securities shall be paid by the Company, including, without

limitation, all (i) registration and filing fees (including, without limitation, any fees relating to filings required to be made with, or the listing of any Registrable Securities on, any securities exchange or over-the-counter trading market on which the Registrable Securities are listed or quoted); (ii) underwriting expenses (other than Selling Expenses); (iii) expenses of any annual audit or quarterly review incident to or required by any such registration; (iv) fees and expenses of complying with securities and "blue sky" laws (including, without limitation, fees and disbursements of counsel for the Company in connection with "blue sky" qualifications or exemptions of the Registrable Securities); (v) printing expenses; (vi) messenger, telephone and delivery expenses; (vii) fees and expenses of the Company's counsel and accountants; (viii) Financial Industry Regulatory Authority, Inc. filing fees (if any); and (ix) fees and expenses for listing the Registrable Securities on each securities exchange on which they are to be listed. In addition, for the avoidance of doubt, the Company shall be responsible for all of its internal expenses incurred in connection with the consummation of the transactions contemplated by this Agreement (including, without limitation, all salaries and expenses of its officers and employees performing legal or accounting duties) and the expense of any annual audits. All Selling Expenses relating to the offer and sale of Registrable Securities registered under the Securities Act pursuant to this Agreement shall be borne and paid by the Investor.

7. Indemnification.

(a) The Company shall indemnify and hold harmless, to the fullest extent permitted by law, the Investor, each Controlling Person of the Investor, and the Investor's and each such Controlling Person's officers, directors, managers, members, partners, stockholders, employees, agents and Affiliates, and each underwriter, broker or any other Person acting on behalf of the Investor, against all losses, claims, actions, damages, liabilities and expenses, joint or several, to which any of the foregoing Persons may become subject under the Securities Act or otherwise, insofar as such losses, claims, actions, damages, liabilities or expenses arise out of or are based upon any untrue or alleged untrue statement of a material fact contained in any Registration Statement, Prospectus, preliminary Prospectus, free writing prospectus (as defined in Rule 405 under the Securities Act or any successor rule thereto) or any amendment thereof or supplement thereto, including all documents incorporated therein by reference, or any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of a Prospectus, preliminary Prospectus or free writing prospectus, in light of the circumstances under which they were made) not misleading; and shall reimburse such Persons for any legal or other expenses reasonably incurred by any of them in connection with investigating or defending any such loss, claim, action, damage or liability, except insofar as the same are caused by, or such untrue statement or omission is contained in, any information furnished in writing to the Company by the Investor expressly for use in such Registration Statement, Prospectus, preliminary Prospectus, free writing prospectus (as defined in Rule 405 under the Securities Act or any successor rule thereto) or any amendment thereof or supplement thereto, as applicable (the "**Investor Information**"). This indemnity shall be in addition to any liability the Company may otherwise have under this Agreement.

(b) In connection with any registration in which the Investor is participating, the Investor shall furnish to the Company in writing such customary information as the Company may reasonably request for use in connection with any such Registration Statement or Prospectus and, to the extent permitted by law, shall indemnify and hold harmless, the Company, each director of the Company, each officer of the Company who shall sign such Registration Statement, each underwriter, broker or other Person acting on behalf of the holders of Registrable Securities and each Controlling Person who controls any of the foregoing Persons against any losses, claims, actions, damages, liabilities or expenses resulting from any untrue or alleged untrue statement of material fact contained in the Registration Statement, Prospectus, preliminary Prospectus, free writing prospectus (as defined in Rule 405 under the Securities Act or any successor rule thereto) or any amendment thereof or supplement thereto or any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of a Prospectus, preliminary Prospectus or free writing prospectus, in light of the circumstances under which they were made) not misleading, but only to the extent that any such loss, claim, action, damage or liability is caused by, or such untrue statement or omission is contained in, the Investor Information; provided, that the Investor's obligation to indemnify shall not exceed in the aggregate an amount equal to the net proceeds (after underwriting fees, commissions or discounts) actually received by the Investor from the sale of Registrable Securities pursuant to such Registration Statement. This indemnity shall be in addition to any liability the Investor may otherwise have under this Agreement.

(c) Promptly after receipt by an indemnified party of notice of the commencement of any action involving a claim referred to in this **Section 7**, such indemnified party shall, if a claim in respect thereof is made against an indemnifying party, give written notice to the latter of the commencement of such action. The failure of any indemnified party to notify an indemnifying party of any such action shall not (unless the indemnifying party is materially prejudiced by such failure) relieve the indemnifying party from any liability in respect of such action that it may have to such indemnified party hereunder. In case any such action is brought against an indemnified party, the indemnifying party shall be entitled to participate in and to assume the defense of the claims in any such action that are subject or potentially subject to indemnification hereunder, jointly with any other indemnifying party similarly notified to the extent that it may wish, with counsel reasonably satisfactory to such indemnified party, and after written notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof, the indemnifying party shall not be responsible for any legal or other expenses subsequently incurred by the indemnified party in connection with the defense thereof; provided, however, that any person entitled to indemnification hereunder shall have the right to employ separate counsel and to participate in the defense of such claim, but the fees and expenses of such counsel shall be at the expense of such person unless (A) the indemnifying party has agreed to pay such fees or expenses or (B) the indemnifying party shall have failed to assume the defense of such claim. If (i) any indemnified party shall have reasonably concluded that there may be one or more legal or equitable defenses available to such indemnified party that are additional to or conflict with those available to the indemnifying party, or that such claim or litigation involves or could have an effect upon matters beyond the scope of the indemnity

provided hereunder, or (ii) such action seeks an injunction or equitable relief against any indemnified party or involves actual or alleged criminal activity, the indemnifying party shall not have the right to assume the defense of such action on behalf of such indemnified party without such indemnified party's prior written consent (but, without such consent, shall have the right to participate therein with counsel of its choice) and such indemnifying party shall reimburse such indemnified party and any Controlling Person of such indemnified party for that portion of the fees and expenses of any counsel retained by the indemnified party that is reasonably related to the matters covered by the indemnity provided hereunder. If the indemnifying party is not entitled to, or elects not to, assume the defense of a claim, it shall not be obligated to pay the fees and expenses of more than one counsel for all parties indemnified by such indemnifying party with respect to such claim (in addition to local counsel in each relevant jurisdiction), unless in the reasonable judgment of any indemnified party a conflict of interest may exist between such indemnified party and any other of such indemnified parties with respect to such claim. If such defense is assumed by the indemnifying party pursuant to the provisions thereof, such indemnifying party shall not settle or otherwise compromise the applicable claim unless (i) such settlement or compromise contains a full and unconditional release of the indemnified party or (ii) the indemnified party otherwise consents in writing (which consent will not be unreasonably withheld, conditioned or delayed).

(d) If the indemnification provided for hereunder is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, claim, damage, liability or action referred to herein, then the indemnifying party, in lieu of indemnifying such indemnified party hereunder, shall contribute to the amounts paid or payable by such indemnified party as a result of such loss, claim, damage, liability or action in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and of the indemnified party on the other in connection with the statements or omissions that resulted in such loss, claim, damage, liability or action as well as any other relevant equitable considerations; provided, that the maximum aggregate amount of liability in respect of such contribution shall be limited, in the case of the Investor, to an amount equal to the net proceeds (after underwriting fees, commissions or discounts) actually received by the Investor from the sale of Registrable Securities effected pursuant to such registration. The amount paid by an indemnified party as a result of losses referred to in the first sentence of this paragraph shall be deemed to include any legal and other expenses reasonably incurred by such indemnified party in connection with investigating or defending any loss that is the subject of this paragraph. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. The parties agree that it would not be just and equitable if contribution pursuant hereto were determined by pro rata allocation or by any other method or allocation that does not take account of the equitable considerations referred to herein. No Person guilty or liable of fraudulent

misrepresentation within the meaning of Section 11(f) of the Securities Act shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation.

8. Participation in Underwritten Registrations. No Person may participate in any registration hereunder that is underwritten unless such Person (a) agrees to sell such Person's securities on the basis provided in any underwriting arrangements approved by the Person or Persons entitled hereunder to approve such arrangements and (b) completes and executes all questionnaires, powers of attorney, indemnities, underwriting agreements and other documents, each in customary form, reasonably required under the terms of such underwriting arrangements.

9. Rule 144 Compliance. With a view to making available to the holders of Registrable Securities the benefits of Rule 144 and any other rule or regulation of the Commission that may at any time permit a holder to sell securities of the Company to the public without registration, the Company shall:

(a) make and keep public information available, as those terms are understood and defined in Rule 144, at all times after the Registration Date;

(b) use commercially reasonable efforts to file with the Commission in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act, at any time after the Registration Date; and

(c) furnish to the Investor so long as the Investor owns Registrable Securities, promptly upon request, a written statement by the Company as to its compliance with the reporting requirements of Rule 144 and of the Securities Act and the Exchange Act, a copy of the most recent annual or quarterly report of the Company, and such other reports and documents so filed or furnished by the Company as such holder may reasonably request in connection with the sale of Registrable Securities without registration.

10. Preservation of Rights. The Company shall not (a) grant any registration rights to third parties that are inconsistent with the rights granted hereunder, or (b) enter into any agreement, take any action, or permit any change to occur, with respect to its securities that violates the rights expressly granted to the Investor in this Agreement.

11. Termination. This Agreement shall terminate and be of no further force or effect when there shall no longer be any Registrable Securities outstanding; provided, that the provisions of **Section 6** and **Section 7** shall survive any such termination.

12. Notices. All communications hereunder will be in writing and shall be deemed effectively given upon the earlier of actual receipt, or (a) personal delivery to the party to be notified, (b) when sent, if sent by electronic mail or facsimile during normal business hours of the recipient, and if not sent during normal business hours, then on the recipient's next business day, (c) five days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (d) one business day after deposit with a nationally recognized overnight

courier, freight prepaid, specifying next business day delivery, with written verification of receipt, and, if sent to the Investor, will be mailed (including by e-mail with PDF attachment), delivered or telegraphed and confirmed to the Investor at Siemens AG Werner-von-Siemens-Str. 50 91052 Erlangen, Germany, Attention: Anton Steiger, E-mail: anton.steiger@siemens.com, or, if sent to the Company, will be mailed (including by e-mail with PDF attachment), delivered or telegraphed and confirmed to it at Bentley Systems, Incorporated, 685 Stockton Drive, Exton, PA 19341, Attention: Chief Legal Officer, E-mail: david.shaman@bentley.com.

13. Entire Agreement. This Agreement, together with the Purchase Agreement and any related exhibits and schedules thereto, constitutes the sole and entire agreement of the parties to this Agreement with respect to the subject matter contained herein, and supersedes all prior and contemporaneous understandings and agreements, both written and oral, with respect to such subject matter. Notwithstanding the foregoing, in the event of any conflict between the terms and provisions of this Agreement and those of the Purchase Agreement, the terms and conditions of this Agreement shall control.

14. Successor and Assigns. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and permitted assigns. The Company may assign this Agreement at any time in connection with a sale or acquisition of the Company, whether by merger, consolidation, sale of all or substantially all of the Company's assets, or similar transaction, without the consent of the Investor; provided, that the successor or acquiring Person agrees in writing to assume all of the Company's rights and obligations under this Agreement in connection with such merger, consolidation or sale. The Investor may assign its rights hereunder to any one or more of its Affiliates; provided, that such purchaser or transferee shall, as a condition to the effectiveness of such assignment, be required to execute a counterpart to this Agreement agreeing to be treated as the Investor whereupon such purchaser or transferee shall have the benefits of, and shall be subject to the restrictions contained in, this Agreement as if such purchaser or transferee was originally included in the definition of an Investor herein and had originally been a party hereto.

15. No Third-Party Beneficiaries. This Agreement is for the sole benefit of the parties hereto and their respective successors and permitted assigns and nothing herein, express or implied, is intended to or shall confer upon any other Person any legal or equitable right, benefit or remedy of any nature whatsoever, under or by reason of this Agreement.

16. Headings. The headings in this Agreement are for reference only and shall not affect the interpretation of this Agreement.

17. Amendment, Modification and Waiver. The provisions of this Agreement may only be amended, modified, supplemented or waived with the prior written consent of the Company and the Investor. No waiver by any party or parties shall operate or be construed as a waiver in respect of any failure, breach or default not expressly identified by such written waiver, whether of a similar or different character, and whether occurring before or after that waiver. Except as otherwise set forth in this Agreement, no failure to exercise, or delay in exercising, any right,

remedy, power or privilege arising from this Agreement shall operate or be construed as a waiver thereof; nor shall any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege.

18. Severability. If any term or provision of this Agreement is invalid, illegal or unenforceable in any jurisdiction, such invalidity, illegality or unenforceability shall not affect any other term or provision of this Agreement or invalidate or render unenforceable such term or provision in any other jurisdiction. Upon such determination that any term or other provision is invalid, illegal or unenforceable, the parties hereto shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible in a mutually acceptable manner in order that the transactions contemplated hereby be consummated as originally contemplated to the greatest extent possible.

19. Remedies. The Investor shall have all rights and remedies reserved for it pursuant to this Agreement. Any party having any rights under any provision of this Agreement will be entitled to enforce such rights specifically, to recover damages by reason of any breach of any provision of this Agreement and to exercise all other rights granted by law or equity. The Company acknowledges that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Agreement, and the Company hereby agrees to waive the defense in any action for specific performance that a remedy at law would be adequate.

20. Governing Law; Submission to Jurisdiction. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware. The Investor and the Company each hereby submit to the non-exclusive jurisdiction of the federal and state courts in the State of Delaware in any suit or proceeding arising out of or relating to this Agreement or the transactions contemplated hereby. The Investor and the Company each irrevocably and unconditionally waives any objection to the laying of venue of any suit or proceeding arising out of or relating to this Agreement or the transactions contemplated hereby in federal and state courts in the State of Delaware and irrevocably and unconditionally waives and agrees not to plead or claim in any such court that any such suit or proceeding in any such court has been brought in an inconvenient forum. The Investor and the Company hereby irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

21. Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which together shall be deemed to be one and the same agreement. A signed copy of this Agreement delivered by facsimile, e-mail or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement.

22. Further Assurances. Each of the parties to this Agreement shall execute and deliver such additional documents, instruments, conveyances and assurances and take such further actions as may be reasonably required to carry out the provisions hereof and to give effect to the transactions contemplated hereby.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first written above.

COMPANY:

Bentley Systems, Incorporated

By: /s/ Gregory S. Bentley
Name: Gregory S. Bentley
Title: CEO, President and Chairman of the Board

INVESTOR:
Siemens Corporation

By: /s/ Judy Marks
Name: Judy Marks
Title: President

By: /s/ Rose Marie Glazer
Name: Rose Marie Glazer
Title: Senior Vice President, Secretary and General Counsel

Exhibit 10.6

BENTLEY SYSTEMS, INCORPORATED

2015 EQUITY INCENTIVE PLAN

(As Amended and Restated Effective as of May 29, 2018)

TABLE OF CONTENTS

BENTLEY SYSTEMS, INCORPORATED

2015 EQUITY INCENTIVE PLAN

(As Amended and Restated Effective as of May 29, 2018)

WHEREAS, Bentley Systems, Incorporated (the "Company") adopted the Bentley Systems, Incorporated 2015 Stock Option Plan (the "Plan"), effective as of August 1, 2015 and amended it on one occasion thereafter;

WHEREAS, the Company on May 1, 2018 paid a 100% stock dividend to each of the holders of its Class A Common Stock, par value $0.01 per share, and Class B Common Stock, par value $0.01 per share, in additional shares of Class B Common Stock; and

WHEREAS, the Company wishes to amend and restate the Plan in order to reflect the single amendment made to date, to reflect the stock dividend in the number of shares of Common Stock available under the Plan, to permit consultants to participate in the Plan and to delete certain inapplicable provisions; and

NOW, THEREFORE, the Plan is hereby amended and restated effective as of May 29, 2018, under the following terms and conditions:

SECTION 1 - PURPOSE AND DEFINITIONS

(a) **Purpose**. The Plan is intended to provide a means whereby the Company may, through the grant of ISOs to Key Employees and NQSOs, Restricted Stock, Restricted Stock Units, Stock Appreciation Rights, Stock Grants, and Dividend Equivalent Rights to Key Employees, Consultants and Non-Employee Directors, attract and retain such individuals and motivate them to exercise their best efforts on behalf of the Company and of any Related Corporation.

(b) **Definitions**

(1) **"Award"** shall mean ISOs, NQSOs, Restricted Stock, Restricted Stock Units, SARs, Stock Grants, and Dividend Equivalent Rights awarded by the Committee to a Participant.

(2) **"Award Agreement"** shall mean a written document evidencing the grant of an Award, with such changes not inconsistent with the Plan as the Committee may determine.

(3) **"Board"** shall mean the Board of Directors of the Company.

(4) **"Cause"** shall have the meaning set forth in the Participant's employment agreement with the Company or a Related Corporation, as applicable. If there is no employment agreement or consulting agreement or if "Cause" is not defined therein, then "Cause" shall mean the Participant has:

(A) materially failed to perform any of the Participant's stated duties and not cured such failure (if curable) within 15 days of the Participant's receipt of written notice of the failure;

(B) demonstrated his or her personal dishonesty;

(C) engaged in willful misconduct;

(D) engaged in a breach of fiduciary duty;

(E) willfully violated any law, rule, or regulation, or final cease-and-desist order (other than traffic violations or similar offenses);

(F) engaged in other serious misconduct of such a nature that the continuation of the Participant's status as a Key Employee, Consultant or Non-Employee Director may reasonably be expected to affect the Company or a Related Corporation adversely; or

(G) materially violated the Bentley Code of Conduct, as in effect from time to time.

(5) **"Change in Control"** shall mean:

(A) One person (or more than one person acting as a group) acquires ownership of stock of the Company that, together with the stock held by such person or group, constitutes more than 50 percent of the total fair market value or total voting power of the stock of the Company; provided that a Change in Control shall not occur if any person (or more than one person acting as a group) owns more than 50 percent of the total fair market value or total voting power of the Company's stock and acquires additional stock;

(B) A majority of the members of the Board are replaced during any 12-month period by Directors whose appointment or election is not endorsed by a majority of the Board before the date of appointment or election; or

(C) One person (or more than one person acting as a group), acquires (or has acquired during the 12-month period ending on the date of the most recent acquisition) assets from the Company that have a total gross fair market value equal to or more than 85 percent of the total gross fair market value of all of the assets of the Company immediately before such acquisition(s).

(6) **"Code"** shall mean the Internal Revenue Code of 1986, as amended.

(7) **"Committee"** shall mean a committee which consists solely of not fewer than three Directors, each of whom shall be appointed by, and serve at the pleasure of, the Board (taking into consideration the rules under Section 16(b) of the Exchange Act. In the event a committee has not been established, the entire Board shall be the Committee.

(8) **"Common Stock"** shall mean the Class B Common Stock of the Company, par value $.01 per share, or, if no shares of Class B Common Stock are then outstanding, the securities into which the Class B Common Stock has been converted.

(9) **"Company"** shall mean Bentley Systems, Incorporated.

(10) **"Consultant"** shall mean (i) an individual who provides consulting services to the Company or a Related Corporation, or (ii) a corporation, a limited liability company or other business entity that provides consulting services to the Company or a Related Corporation, provided that more than 50% of the equity in such corporation, limited liability company or other business entity (by vote and value) is owned by an individual who personally provides such consulting services to the Company or a Related Corporation on behalf of such entity.

(11) **"Disability"** shall mean a "permanent and total disability," as defined in Section 22(e)(3) of the Code.

(12) **"Director"** shall mean a member of the Board.

(13) **"Dividend Equivalent Right"** shall mean an Award that entitles the recipient to receive a benefit in lieu of cash dividends that would have been payable on any or all Common Stock subject to another Award granted to the Participant had such Common Stock been outstanding.

(14) **"Exchange Act"** shall mean the Securities Exchange Act of 1934, as amended.

(15) **"Fair Market Value"** shall mean:

(A) The closing price of, if there is a market for, and sales of, the Common Stock on a registered securities exchange or on an over-the-counter market, on the date of grant (or on such other date as value must be determined);

(B) The weighted average of the closing prices on the nearest date before and the nearest date after the date of grant (or after such other date as value must be determined), if there are no sales on such date but there are sales on dates within a reasonable period both before and after such date;

(C) The mean between the bid and asked prices, as reported by the National Quotation Bureau, on the date of grant (or on such other date as value must be determined), if actual sales are not available during a reasonable period beginning before and ending after such date; or

(D) If subparagraphs (A) through (C) above are not applicable, a good faith determination of fair market value by the Committee pursuant to another method adopted by the Committee.

Where the fair market value of the Common Stock is determined under subparagraph (B) above, the average of the means between the highest and lowest sales on the nearest date before and the nearest date after the date of grant (or after such other date as value must be determined) shall be weighted inversely by the respective numbers of trading days between the selling dates and such date (*i.e.*, the valuation date), in accordance with Treas. Reg. §20.2031-2(b)(1), or any successor thereto.

(16) **"ISO"** shall mean an option which, at the time such option is granted under the Plan, qualifies as an incentive stock option within the meaning of Section 422 of the Code, unless the Award Agreement states that the option will not be treated as an ISO.

(17) **"Key Employee"** shall mean an officer or other key employee of the Company or a Related Corporation and shall include a Director who is also an officer or other key employee.

(18) **"Non-Employee Director"** shall mean a Director who is not an employee of the Company or a Related Corporation.

(19) **"NQSO"** shall mean an option which, at the time such option is granted, does not meet the definition of an ISO, whether or not it is designated as a nonqualified stock option in the Award Agreement.

(20) **"Options"** shall mean ISOs and NQSOs.

(21) **"Participant"** shall mean a Key Employee, Consultant or Non-Employee Director who has been granted an Award under the Plan.

(22) **"Performance Goals"** shall mean goals deemed by the Committee to be important to the success of the Company or any of its Related Corporations and established with respect to an Award other than a Stock Grant. In creating these measures, the Committee shall use one or more of the following business criteria: return on assets, return on net assets, asset turnover, return on equity, return on capital, market price appreciation of shares, economic value added, total stockholder return, net income, pre-tax income, earnings per share, operating profit margin, net income margin, sales margin, cash flow, market share, inventory turnover, sales growth, net revenue per shipment, net revenue growth, capacity utilization, increase in customer base, environmental health and safety, diversity, and/or quality. The business criteria may apply to the individual, a division, a component of the Company's business, or to the Company and/or one or more Related Corporations and may be weighted and expressed in absolute terms or relative to the performance of other individuals or companies or an index.

(23) **"Plan"** shall mean the Bentley Systems, Incorporated 2015 Equity Incentive Plan, as set forth herein and as amended from time to time.

(24) **"Related Corporation"** shall mean either a "subsidiary corporation" of the Company, as defined in Section 424(f) of the Code, or the "parent corporation" of the Company, as defined in Section 424(e) of the Code.

(25) **"Restricted Stock"** shall mean an Award that grants the recipient Common Stock at no cost but subject to whatever restrictions are determined by the Committee.

(26) **"Restricted Stock Unit"** shall mean an Award that entitles the recipient to one Share in the future subject to whatever restrictions are determined by the Committee.

(27) **"SAR"** shall mean a stock appreciation right, an Award entitling the recipient on exercise to receive Shares, determined in whole or in part by reference to the appreciation in the value of Common Stock after the date the SAR is granted to a recipient.

(28) **"Securities Act"** shall mean the Securities Act of 1933, as amended.

(29) **"Share"** shall mean a share of Common Stock.

(30) "**Stockholder**" shall mean a shareholder of the Company.

(31) **"Stock Grant"** shall mean the grant of unrestricted Shares to the recipient.

(32) "**Termination of Service**" shall mean (i) with respect to an Award granted to a Key Employee, the termination of the employment relationship between the Key Employee and the Company and all Related Corporations; (ii) with respect to an Award granted to a Non-Employee Director, the cessation of the provision of services as a Director; and (iii) with respect to an Award granted to a Consultant, the cessation of the provision of services as a Consultant or any transfer of equity interests of an entity that is a Consultant by an individual member of such entity who is individually providing services to the Company or a Related Corporation on behalf of such entity without the consent of the Company or a Related Corporation; provided, however, that if the Participant's status changes (e.g., from Key Employee to Consultant or Non-Employee Director or from Non-Employee Director to Consultant or Key Employee or from Consultant (and, in the case of a Consultant that is an entity, the status of the individual member of the entity who is providing services to the Company or a Related Corporation) to Employee or Non-Employee Director), the Committee may, in its sole discretion, provide that no Termination of Service occurs for purposes of the Plan until the Participant's new status with the Company and all Related Corporations terminates. For purposes of this paragraph, if a Participant's relationship is with a Related Corporation, and not with the Company (*i.e.*, the Participant is a Key Employee, Consultant or Non-Employee Director of a Related Corporation and not of the Company), the Participant shall incur a Termination of Service when such corporation ceases to be a Related Corporation, unless the Committee determines otherwise.

The Committee, in its sole discretion, may determine whether a Termination of Service has occurred in the case of any leave of absence approved by the Company or a Related Corporation, as applicable, including sick leave, military leave, or any other personal or family leave of absence.

SECTION 2 - ADMINISTRATION

The Plan shall be administered by the Committee. Each member of the Committee, while serving as such, shall be deemed to be acting in his or her capacity as a Director.

The Committee shall have full authority, subject to the terms of the Plan, to select the Key Employees, Consultants and Non-Employee Directors to be granted Awards under the Plan, to grant Awards on behalf of the Company, and to set the date of grant and the other terms of such Awards in accordance with the Plan. The Committee may correct any defect, supply any omission, and reconcile any inconsistency in the Plan and in any Award granted hereunder in the manner and to the extent it deems desirable. The Committee also shall have the authority to establish such rules and regulations, not inconsistent with the provisions of the Plan, for the proper administration of the Plan, to amend, modify, or rescind any such rules and regulations, and to make such determinations and interpretations under, or in connection with, the Plan, as it deems necessary or advisable. All such rules, regulations, determinations and interpretations shall be binding and conclusive upon the Company, its shareholders, employees, consultants and Directors, upon their respective legal representatives, beneficiaries, successors and assigns, and upon all other persons claiming under or through any of them. Except as otherwise required by the by-laws of the Company or by applicable law, no member of the Board or the Committee shall be liable for any action or determination made in good faith with respect to the Plan or any Award granted under it.

SECTION 3 - ELIGIBILITY

The classes of persons eligible to receive Awards under the Plan shall be Key Employees, including any Directors who are also Key Employees, Consultants and Non-Employee Directors; provided, however, that Non-Employee Directors and Consultants shall not be eligible to receive ISOs under the Plan. More than one Award may be granted to a Participant under the Plan.

SECTION 4 - STOCK

Awards may be granted under the Plan to purchase up to a maximum of fifty million (50,000,000) Shares (which is also the maximum number of Shares that may be issued under the Plan through ISOs). However, the limit in the preceding sentence shall be subject to adjustment as hereinafter provided. Shares issuable under the Plan may be authorized but unissued Shares or reacquired Shares, and the Company may purchase Shares required for this purpose, from time to time, if it deems such purchase to be advisable.

If any Award expires, terminates for any reason, is cancelled, or is forfeited, the number of Shares with respect to which such Award expired, terminated, was cancelled, or was forfeited shall continue to be available for future Awards granted under the Plan. If any Option is exercised by surrendering Shares to the Company or by withholding Shares as full or partial payment, or if tax withholding requirements are satisfied by surrendering Shares to the Company or by withholding Shares, only the number of Shares issued net of Shares withheld or

surrendered shall be deemed delivered for purposes of determining the maximum number of Shares available for grant under the Plan.

SECTION 5 - GRANTING OF AWARDS

(a) **In General**. From time to time until the expiration or earlier suspension or discontinuance of the Plan, the Committee may, on behalf of the Company, grant to Key Employees, Consultants and Non-Employee Directors such Awards as it determines are warranted; provided, however, that grants of ISOs and other Awards (other than SARs in accordance with Section 7 hereof) shall be separate and not in tandem.

(b) **Considerations in Granting Awards**. A member of the Committee may participate in a vote approving the grant of an Award to himself or herself to the extent provided under the laws of the State of Delaware governing corporate self-dealing. In making any determination as to whether a Key Employee, Consultant or Non-Employee Director shall be granted an Award, the type of Award to be granted to a Key Employee, Consultant or Non-Employee Director, the number of Shares to be covered by the Award, and other terms of the Award, the Committee may take into account the duties of the Key Employee, Consultant or Non-Employee Director, his or her or its present and potential contributions to the success of the Company or a Related Corporation, the tax implications to the Company and the Key Employee, Consultant or Non-Employee Director of any Award granted, and such other factors as the Committee may deem relevant in accomplishing the purposes of the Plan. Moreover, the Committee may provide in the Award that said Award may be vested or exercised, as applicable, only if certain conditions, as determined by the Committee, are fulfilled.

(c) **Foreign Jurisdictions**. Awards granted to Participants who are foreign (non-United States) nationals or who are employed by the Company or any Related Corporation outside the United States may contain terms and conditions different from those specified in the Plan and may contain such additional terms and conditions as the Committee, in its sole discretion, determines to be necessary, appropriate or desirable (i) to achieve the material purposes of the Plan, (ii) to accommodate differences in local law, tax policy or custom, or (iii) to facilitate administration of the Plan. The Committee may approve such appendices to the Plan as it may consider necessary, appropriate or desirable to effect the foregoing, without thereby affecting the terms of the Plan as in effect for any other purpose.

SECTION 6 - TERMS AND CONDITIONS OF OPTIONS

Options granted pursuant to the Plan shall include expressly or by reference the following terms and conditions, as well as such other provisions not inconsistent with the provisions of the Plan (and, for ISOs, the provisions of Section 422(b) of the Code), as the Committee shall deem desirable –

(a) **Number of Shares**. The Option shall state the number of Shares to which it pertains.

(b) **Price**. The Option shall state the exercise price which shall be determined and fixed by the Committee in its discretion but –

(1) With respect to an ISO, the exercise price shall not be less than the higher of 100 percent (110 percent in the case of a more-than-10-percent shareholder, as provided in subsection (e) below) of the Fair Market Value of the shares of Common Stock subject to the Option on the date the ISO is granted, or the par value thereof; and,

(2) With respect to an NQSO, the exercise price shall not be less than the higher of 100 percent of the Fair Market Value of the optioned Shares on the date the NQSO is granted, or the par value thereof.

(c) **Term**. The term of each Option shall be determined by the Committee, in its discretion; provided, however, that the term of each ISO shall be not more than 10 years (five years in the case of a more-than-10-percent shareholder, as provided in subsection (e) below) from the date of grant of the ISO. Each Option shall be subject to earlier termination as provided in Sections 12(b), 12(c) and 14 hereof.

(d) **Exercise**. Options shall be exercisable in such installments, upon fulfillment of such other conditions, and on such dates as the Committee may specify. The Committee may accelerate the date on which any tranche of any outstanding Option first becomes exercisable, in its discretion, if it deems such acceleration to be desirable.

The exercisable tranche of an Option may be exercised at any time up to the expiration or termination of the Option. The exercisable tranche of an Option may be exercised, in whole or in part and from time to time, by giving written notice of exercise to the Company at its principal office, specifying the number of full Shares to be purchased and accompanied by payment in full of the aggregate exercise price for such Shares (except that, in the case of an exercise arrangement approved by the Committee and described in paragraph (4) below, payment may be made as soon as practicable after the exercise). Only full Shares shall be issued under the Plan, and any fractional Share which might otherwise be issuable upon exercise of an Option granted hereunder shall be forfeited.

In the event that an exercisable Option is scheduled to expire pursuant to the passing of the expiration date set forth in the applicable Award Agreement and the exercise price per Share of such Option is less than the then-current Fair Market Value of a Share, then on the date immediately preceding the date that such Option is scheduled to expire, such Option (to the extent not previously exercised by the Participant) shall be automatically exercised on behalf of the Participant through a net settlement of both the exercise price and the minimum withholding taxes due (if any) upon such automatic exercise, and the net number of Shares resulting from such automatic exercise shall be delivered to the Participant as soon as practicable thereafter.

The Award Agreement shall set forth, from among the following alternatives, how the exercise price is to be paid –

(1) In cash or its equivalent;

(2) In Shares previously acquired by the Participant;

(3) In Shares newly acquired by the Participant upon the exercise of such Option (which shall constitute a disqualifying disposition in the case of an Option which is an ISO);

(4) By delivering a properly executed notice of exercise of the Option to the Company and a broker, with irrevocable instructions to the broker to deliver promptly to the Company the amount of sale or loan proceeds necessary to pay the exercise price of the Option; or

(5) In any combination of paragraphs (1), (2), (3) and (4) above.

In the event the exercise price is paid, in whole or in part, with Shares, the portion of the exercise price so paid shall be equal to the aggregate Fair Market Value (determined as of the date of exercise of the Option) of the Common Stock so surrendered in payment of the exercise price.

(e) **More-Than-10-Percent Shareholder**. If, after applying the attribution rules of Section 424(d) of the Code, the Participant owns more than 10 percent of the total combined voting power of all shares of stock of the Company or of a Related Corporation at the time an ISO is granted to him, the exercise price for the ISO shall be not less than 110 percent of the Fair Market Value of the optioned Shares on the date the ISO is granted, and such ISO, by its terms, shall not be exercisable after the expiration of five years from the date the ISO is granted. The conditions set forth in this subsection (e) shall not apply to NQSOs.

(f) **Tax Treatment of Options**. The Company shall have no liability to any Participant or any other person if an Option designated as an ISO fails to qualify as such at any time or if an Option is determined to constitute "nonqualified deferred compensation" within the meaning of Section 409A of the Code and the terms of such Option do not satisfy the requirements of Section 409A of the Code.

(g) **Annual Limit on ISOs**. The aggregate Fair Market Value (determined as of the date the ISO is granted) of the Common Stock with respect to which ISOs are exercisable for the first time by a Key Employee during any calendar year (counting ISOs under this Plan and under any other stock option plan of the Company or a Related Corporation) shall not exceed $100,000. If an Option intended as an ISO is granted to a Key Employee and the Option may not be treated in whole or in part as an ISO pursuant to the $100,000 limitation, the Option shall be treated as an ISO to the extent it may be so treated under the limitation and as an NQSO as to the remainder. For purposes of determining whether an ISO would cause the limitation to be exceeded, ISOs shall be taken into account in the order granted. The annual limits set forth above for ISOs shall not apply to NQSOs.

(h) **No Repricing; No Dividend Equivalent Right**. Repricing of Options shall not be permitted without the approval of the shareholders of the Company. For this purpose, a "repricing" means any of the following (or any other action that has the same effect as any of the following):

(1) Changing the terms of an Option to lower its exercise price (other than on account of capital adjustments resulting from share splits, etc., as described in Section 13 hereof);

(2) Any other action that is treated as a "repricing" under generally accepted accounting principles; and

(3) Repurchasing for cash or canceling an Option in exchange for another Award at a time when its exercise price is greater than the Fair Market Value of the underlying Shares, unless the cancellation and exchange occurs in connection with an event set forth in Section 14 hereof (involving certain corporate transactions); such cancellation and exchange will be considered a "repricing" regardless of whether it would be treated as a "repricing" under generally accepted accounting principles and regardless of whether it is voluntary on the part of the Participant.

An option shall not be associated with any Dividend Equivalent Right.

SECTION 7 - TERMS AND CONDITIONS OF SARs

(a) **Grant of SARs**. The Committee may grant SARs to any Key Employee, Consultant or Non-Employee Director. SARs may be granted alone ("Free-Standing Rights") or in tandem with an Option granted under the Plan ("Related Rights"). Any Related Right that relates to an NQSO may be granted at the same time the Option is granted or at any time thereafter but before the exercise or expiration of the Option. Any Related Right that relates to an ISO must be granted at the same time the ISO is granted (and in accordance with Treas. Reg. §1.422-5(d)(3)).

(b) **Nature of SAR**. An SAR entitles the Participant to receive, with respect to each Share as to which the SAR is exercised, the excess of the Share's Fair Market Value on the date of exercise over its Fair Market Value on the date the SAR was granted (i.e., the "base value"). Such excess shall be paid in Common Stock. Notwithstanding the preceding sentence, the Committee may defer payment of the value of an SAR in accordance with the Award Agreement.

The base value of a Free-Standing SAR shall be determined by the Committee, but shall not be less than 100 percent of the Fair Market Value of one Share on the grant date of such SAR. A Related Right granted simultaneously with or subsequent to the grant of an Option and in conjunction therewith or in the alternative thereto shall have the same base value as the exercise price of the related Option, shall be transferable only upon the same terms and conditions as the related Option, and shall be exercisable only to the same extent as the related Option; provided, however, that an SAR, by its terms, shall be exercisable only when the Fair Market Value per Share subject to the SAR and related Option exceeds the base value per Share thereof and no SARs may be granted in tandem with an Option unless the Committee determines that the requirements of this Section are satisfied.

Upon any exercise of a Related Right, the number of Shares for which any related Option shall be exercisable shall be reduced by the number of Shares for which the SAR has been exercised. The number of Shares for which a Related Right shall be exercisable shall be reduced upon the exercise of a related Option by the number of Shares for which such Option has been exercised.

(c) **Vesting of SARs**. An SAR shall vest at such time or times, and on such conditions, as the Committee may specify in the Award Agreement. The Committee may at any time accelerate the vesting of an SAR.

(d) **No Repricing; No Dividend Equivalent Right**. Repricing of SARs shall not be permitted without the approval of the shareholders of the Company. For this purpose, a "repricing" means any of the following (or any other action that has the same effect as any of the following):

(1) Changing the terms of an SAR to lower its base value (other than on account of capital adjustments resulting from share splits, etc., as described in Section 13 hereof);

(2) Any other action that is treated as a "repricing" under generally accepted accounting principles; and

(3) Repurchasing for cash or canceling an SAR in exchange for another Award at a time when its base value is greater than the Fair Market Value of the underlying Shares, unless the cancellation and exchange occurs in connection with an event set forth in Section 14 hereof (involving certain corporate transactions); such cancellation and exchange will be considered a "repricing" regardless of whether it would be treated as a "repricing" under generally accepted accounting principles and regardless of whether it is voluntary on the part of the Participant.

An SAR shall not be associated with any Dividend Equivalent Right.

SECTION 8 - TERMS AND CONDITIONS OF RESTRICTED STOCK

(a) **General Requirements**. The Committee may issue or transfer Restricted Stock (for no consideration) to any Key Employee, Consultant or Non-Employee Director.

(b) **Rights as a Stockholder**. Unless the Committee determines otherwise, a Participant who receives Restricted Stock shall have certain rights of a stockholder with respect to the Restricted Stock, including voting and dividend rights, subject to the restrictions described in subsection (c) below and any other conditions imposed by the Committee at the time of grant, including the meeting of designated Performance Goals. Unless the Committee determines otherwise, (i) if the Company issues certificates evidencing Shares of Restricted Stock, such certificates will remain in the possession of the Company until such Shares are free of all restrictions under the Plan, or (ii) if the Shares of Restricted Stock are uncertificated, the Company shall reflect any restrictions under the Plan in its stock records or shall notify the

Company's transfer agent, if any, of such restrictions.

(c) **Restrictions**. Except as otherwise specifically provided by the Plan, Restricted Stock may not be sold, assigned, transferred, pledged or otherwise encumbered or disposed of, and, unless the Committee determines otherwise, if a Participant (other than a Non-Employee Director or Consultant) ceases to be an employee of any of the Company and its affiliates for any reason, the Restricted Stock previously granted to the Participant and still restricted must be forfeited to the Company. These restrictions will lapse at such time or times, and on such conditions, as the Committee may specify in the Award Agreement. Upon the lapse of all restrictions, the Shares will cease to be Restricted Stock for purposes of the Plan. The Committee may at any time accelerate the time at which the restrictions on all or any part of the Shares will lapse.

(d) **Notice of Tax Election**. Any Participant making an election under Section 83(b) of the Code for the immediate recognition of income attributable to an Award of Restricted Stock must provide a copy thereof to the Company within 10 days of the filing of such election with the Internal Revenue Service.

SECTION 9 - TERMS AND CONDITIONS OF RESTRICTED STOCK UNITS

(a) **Grant**. The Committee may grant Restricted Stock Units to any Key Employee, Consultant or Non-Employee Director.

(b) **Nature of Restricted Stock Units**. A Restricted Stock Unit entitles the Participant to receive in the future, with respect to each vested Restricted Stock Unit, one Share. The Committee may condition the vesting of Restricted Stock Units upon the meeting of designated Performance Goals. The Committee shall determine the number of Restricted Stock Units to be granted. The Committee may defer the delivery of Shares associated with Restricted Stock Units in accordance with the Award Agreement.

SECTION 10 - STOCK GRANT

The Committee may make a Stock Grant to a Key Employee, Consultant or Non-Employee Director. Such Stock Grant shall be fully vested on the date made.

SECTION 11 - DIVIDEND EQUIVALENT RIGHTS

The Committee may provide for payment to a Key Employee, Consultant or Non-Employee Director of Dividend Equivalent Rights, either currently or in the future, or for the investment of such Dividend Equivalent Rights on behalf of the Participant; provided, however, that any dividend or dividend equivalent payments relating to Awards that vest based on the achievement of one or more Performance Goals will only be earned to the extent such Performance Goals are met.

SECTION 12 - AWARD AGREEMENTS; OTHER PROVISIONS

(a) **Award Agreements**. Awards granted under the Plan shall be evidenced

by Award Agreements in such form as the Committee shall from time to time approve, and containing such provisions not inconsistent with the provisions of the Plan (and, for ISOs granted pursuant to the Plan, not inconsistent with Section 422(b) of the Code), as the Committee shall deem advisable. The Award Agreement for an Option shall specify whether the Option is an ISO or an NQSO. Each Participant shall enter into, and be bound by, an Award Agreement as soon as practicable after the grant of an Award.

(b) **Termination of Service (Other Than by Death or Disability)**. If a Participant incurs a Termination of Service for any reason other than death or Disability, the following shall apply:

(1) **Options**. If a Participant's Termination of Service occurs prior to the expiration date fixed for the Option for any reason other than death or Disability, such Option may be exercised, to the extent of the number of Shares with respect to which the Participant could have exercised it on the date of such Termination of Service, or to any greater extent permitted by the Committee, by the Participant at any time prior to the earliest of (i) the expiration date specified in the Award Agreement, (ii) three months after the date of such Termination of Service, if the termination was not voluntary and not for Cause (unless the Award Agreement provides a different expiration date in the case of such a termination), and (iii) the date of such Termination of Service, if the termination was voluntary or was for Cause (unless the Award Agreement provides a different expiration date in the case of such a termination).

(2) **Restricted Stock**. Except as otherwise determined by the Committee or set forth in the Participant's Award Agreement, all Restricted Stock held by the Participant at the time of the Participant's Termination of Service must be transferred to the Company (and, if any certificates representing such Restricted Stock are held by the Company or if any shares of Restricted Stock are uncertificated, such Restricted Stock shall be so transferred without any further action by the Participant), in accordance with Section 8 hereof.

(3) **SARs, Etc**. Except as otherwise determined by the Committee or set forth in the Participant's Award Agreement, all SARs, Restricted Stock Units, and Dividend Equivalent Rights to which the Participant was not irrevocably entitled before the Participant's Termination of Service shall be forfeited and the Award canceled as of the date of such termination.

(c) **Death or Disability**. If a Participant dies or incurs a Disability, the following shall apply:

(1) **Options**

(A) If a Participant becomes Disabled prior to the expiration date fixed for the Option, and the Participant's Termination of Service occurs as a consequence of such Disability, such Option may be exercised, to the extent of the number of Shares with respect to which the Participant could have exercised it on the date of such Termination of Service, or to any greater extent permitted by the Committee, by the Participant at any time prior to the earlier of (i) the expiration date specified in the Award Agreement, or (ii) one year after

the date of such Termination of Service (unless the Award Agreement provides a different expiration date in the case of such a termination). In the event of the Participant's legal disability, such Option may be exercised by the Participant's legal representative.

(B) If a Participant's Termination of Service occurs as a result of death prior to the expiration date fixed for the Option, or if the Participant dies following his or her Termination of Service but prior to the earlier of (i) the expiration date fixed for the Option, or (ii) the expiration of the period determined under subsections (b)(1) and (c)(1)(A) above (including any extension of such period provided in the Award Agreement), such Option may be exercised, to the extent of the number of Shares with respect to which the Participant could have exercised it on the date of his or her death, or to any greater extent permitted by the Committee, by the Participant's estate, personal representative, or beneficiary who acquired the right to exercise such Option by bequest or inheritance or by reason of the death of the Participant. Such post-death exercise may occur at any time prior to the earlier of (I) the expiration date specified in the Award Agreement, or (II) one year after the date of the Participant's death (unless the Award Agreement provides a different expiration date in the case of death).

(2) **Restricted Stock**. Except as otherwise determined by the Committee, all Restricted Stock held by the Participant at the date of the Participant's death or Disability, as the case may be, must be transferred to the Company (and, if any certificates representing such Restricted Stock are held by the Company or if any shares of Restricted Stock are uncertificated, such Restricted Stock shall be so transferred without any further action by the Participant), in accordance with Section 8 hereof.

(3) **SARs, Etc**. Except as otherwise determined by the Committee, all SARs, Restricted Stock Units, and Dividend Equivalent Rights to which the Participant was not irrevocably entitled before the Participant's death or Disability, as the case may be, shall be forfeited and the Award canceled as of the date of death or Disability.

(4) **Certain Consultants**. For purposes of this Section 12(c), if the Participant is an entity, the term "Participant" shall refer to the individual member of the entity who is providing services to the Company or a Related Corporation.

(d) **Non-Transferability; Registration**. No Award shall be assignable or transferable by the Participant other than by will or by the laws of descent and distribution. During the lifetime of the Participant, an Option shall be exercisable only by the Participant or by the Participant's guardian or legal representative. If the Participant is married at the time of vesting or exercise, as applicable, of an Award that is to be settled in Shares, and if the Participant so requests at such time, the Shares shall be registered in the name of the Participant and the Participant's spouse, jointly, with right of survivorship.

Except as otherwise provided in the preceding paragraph, an Award, both any outstanding Award and any Award to be issued in the future, and the Shares issuable under any such Award may not, prior to the vesting or exercise of the Award, as applicable, be made subject to any pledge, hypothecation or other transfer, including any short position, any "put

equivalent position" (as defined in Rule 16a-1(h) under the Exchange Act), or any "call equivalent position" (as defined in Rule 16a-1(b) under the Exchange Act) by any Participant.

(e) **Rights as a Shareholder**. Except as otherwise provided in the Plan or an Award Agreement, a Participant shall have no rights as a shareholder with respect to any Shares covered by the Award until (i) the Company issues certificates evidencing such Shares, or (ii) if the Shares are uncertificated, the Company reflects the issuance of such Shares in its stock records or notifies the Company's transfer agent, if any, of such issuance.

(f) **Conditions on Delivery of Shares**. The Company shall not deliver any Shares pursuant to the Plan or remove restrictions from Shares previously delivered under the Plan (i) until all conditions of the Award have been satisfied or removed, (ii) until all applicable federal and state laws and regulations have been complied with, and (iii) if the Company's outstanding Shares are at the time of such delivery listed on any stock exchange, until the Shares to be delivered have been listed or authorized to be listed on such exchange. If an Award is exercised by the Participant's legal representative, the Company will be under no obligation to deliver Shares pursuant to such exercise until the Company is satisfied as to the authority of such representative.

(g) **Put and Call Rights**.

(1) **Applicability**. This subsection (g) applies only to Awards granted under the Plan on or after February 12, 2016 and shall apply to the holder of each such Award unless the Board specifies in the Award Agreement itself that none or only a portion of this subsection (g) shall apply to the holder of the Award.

(2) **Definitions**.

(A) **Put Right.** A "Put Right" shall give the holder thereof the right, but not the obligation, to sell to the Company all, or any whole number less than all, of the shares of Common Stock to which the Put Right is applicable and, upon exercise of the Put Right as provided herein and subject to the terms and conditions set forth herein, the holder shall sell and the Company shall purchase the shares of Common Stock for which the Put Right is exercised.

(B) **Call Right.** A "Call Right" shall give the Company the right, but not the obligation, to purchase from the holder all, or any whole number less than all, of the shares of Common Stock to which the Call Right is applicable and, upon exercise of the Call Right as provided herein and subject to the terms and conditions set forth herein, the holder shall sell and the Company shall purchase the shares of Common Stock for which the Call Right is exercised.

(C) **Purchase Price.** The per share "Purchase Price" payable upon exercise of a Put Right or Call Right shall equal the Fair Market Value of a share of Common Stock, determined as of the closing date of the purchase of the Common Stock pursuant to the Put Right or Call Right.

(3) **Exercise of Put Right**. The Put Right may be exercised by the holder thereof by giving written notice to the Company within the period of 30 calendar days beginning on the second calendar day after the six-month anniversary of the date such shares of Common Stock were acquired (i) upon the exercise of an Option or an SAR, (ii) upon the vesting of Restricted Stock, or (iii) upon the delivery of unrestricted shares attributable to Restricted Stock Units or to Stock Grants. The Company shall pay the Purchase Price of the shares of Common Stock subject to the Put Right within the 30-day period after the Put Right is exercised; provided, however, that the Company may, upon written notice to the holder of the Put Right after the exercise of the Put Right, refuse to purchase shares upon exercise of a Put Right if, in its sole discretion exercised in good faith, such purchase would violate (A) contractual restrictions on such purchase under applicable bank loan or other documents binding on the Company, or (B) applicable securities law disclosure requirements, and, in such cases, the Company shall purchase the shares within 30 days after the reason for such delay has lapsed. During such delay, the Put Right holder may rescind the Put Right exercise and have the right to exercise the Put Right again prior to the expiration of the 30-day period after the reason for the delay has lapsed. In addition, (X) if the Award pursuant to which the shares of Common Stock were acquired was an ISO and the sale of the shares pursuant to the exercise of the Put Right would cause the holder to fail to meet the holding periods required to maintain the Option's tax status as an ISO under Section 422 of the Code, or (Y) for any Award, if the sale of the shares of Common Stock pursuant to the exercise of the Put Right would cause the holder to fail to meet the holding period required for any gain on the sale to qualify for long-term capital gain income tax treatment under the Code, at the holder's request the Company shall delay its purchase of the shares after the exercise of the Put Right until the 10-business-day period after such holding period requirements are satisfied.

(4) **Exercise of Call Right after Termination of Service**. The Call Right may be exercised by the Company by giving written notice to the Participant who held the Award under which the shares of Common Stock were acquired at any time within seven months after the later of (i) the Participant's Termination of Service, or (ii) the Participant's (or the beneficiary's) acquisition of such shares after such Termination of Service. The Company shall pay the Purchase Price of the shares subject to the Call Right within the 30-day period after the Call Right is exercised; provided, however, (A) if the Award pursuant to which the shares of Common Stock were acquired was an ISO and the sale of the shares pursuant to the exercise of the Call Right would cause the holder to fail to meet the holding periods required to maintain the Option's tax status as an ISO under Section 422 of the Code, or (B) for any Award, if the sale of the shares of Common Stock pursuant to the exercise of the Call Right would cause the holder to fail to meet the holding period required for any gain on the sale to qualify for long-term capital gain income tax treatment under the Code, at the holder's request the Company shall delay its purchase of the shares after the exercise of the Call Right until the 10-business-day period after such holding period requirements are satisfied; and, provided further, if purchased by the Company pursuant to this paragraph (4) and at the Company's election, 50 percent of the Purchase Price (or an amount equal to the exercise price plus all federal, state and local income taxes paid by the Participant upon exercise, if greater, but not more than the Fair Market Value of the shares being purchased) may be paid toward the Purchase Price when due and the balance of the Purchase Price shall be paid on the first anniversary of the initial payment, provided that

such balance shall be forfeited if the Participant (or the Participant's beneficiary) violates any confidentiality, non-solicitation or noncompetition agreement set forth in the Participant's Award Agreement.

(5) **Exercise of Call Right to Reduce Number of Company Stockholders**. If at any time the number of the Company's holders of record of a class of equity securities that includes Common Stock for purposes of Section 12(g)(1)(A)(i) or Section 12(g)(1)(A)(ii) of the Exchange Act exceeds 90 percent of the threshold set forth in Section 12(g)(1)(A)(i) or Section 12(g)(1)(A)(ii) of the Exchange Act, the Company may exercise the Call Right with respect to the shares of Common Stock that were acquired from the Company through an Award to which the Call Right is applicable under paragraph (2) above; provided that, as to each holder against whom the Call Right is exercised, (i) the Company will be able to, upon exercise of the Call Right, purchase all, but not less than all, of the equity securities of the class that includes the Common Stock held of record by such holder (an "Eligible Seller"), and (ii) shares of Common Stock shall be purchased only from Eligible Sellers holding the smallest number of shares (relative to all Eligible Sellers up to a total number of Eligible Sellers) so that, after all such purchases, the number of the Company's holders of record of a class of equity securities that includes the Common Stock for purposes of Section 12(g) of the Exchange Act is less than 80 percent of the threshold set forth in Section 12(g)(1)(A)(i) or Section 12(g)(1)(A)(ii) of the Exchange Act.

(6) **Assignment of Put and Call Rights**. The Put Right for shares of Common Stock may not be assigned or otherwise transferred without the written consent of the Company, and any transfer of such shares without an assignment of the Put Right consented to by the Company shall terminate the Put Right for such shares; provided, however, that shares transferred to the holder's family or heirs or beneficiaries, or trusts for the benefit of such persons, shall continue to be entitled to the benefit of the Put Right. Any transferee of any shares of Common Stock subject to a Call Right shall continue to be bound by the Call Right and such transferee shall agree in writing to be so bound as a condition to the transfer of any such shares to such transferee.

(7) **Restrictions on Repurchase**. Notwithstanding anything to the contrary contained in this subsection (g), all repurchases of shares of Common Stock by the Company shall be subject to applicable restrictions contained in the Delaware General Corporation Law and in the Company and its Related Corporations' debt and equity financing agreements. If any such restrictions prohibit the repurchase of shares hereunder which the Company is otherwise entitled to make, the Company may make such repurchases as soon as it is permitted to do so under such restrictions.

(8) **Automatic Termination of Put and Call Rights**. The Put Right and Call Right set forth in this subsection (g) shall automatically terminate, without further action of the Board, upon the Company's initial public offering of its Common Stock.

SECTION 13 - ADJUSTMENT IN CASE OF CHANGES IN COMMON STOCK

The type and maximum number of Shares that may be issued under the Plan, the maximum number of Shares that may be made subject to ISOs (all as stated in Section 4 hereof), and the type and number of Shares issuable under outstanding Awards under the Plan (as well as the exercise price per Share under outstanding Options) shall be adjusted to reflect any stock split, reverse stock split, stock dividend, distribution (including any extraordinary cash dividend), spin-off, recapitalization, share combination or reclassification, or similar change in the capitalization of the Company; provided, however, that (i) no such adjustment shall be made to an outstanding ISO if such adjustment would constitute a modification under Section 424(h) of the Code, unless the Participant consents to such adjustment, and (ii) no such adjustment shall be made if such adjustment would constitute a modification under Treas. Reg. §1.409A-1(b)(5)(v) or any successor thereto, unless the Participant consents to such adjustment. In the event any such change in capitalization cannot be reflected in a straight mathematical adjustment of the number of Shares issuable under outstanding Awards (and a straight mathematical adjustment of the exercise price thereof), the Committee shall make adjustments to reflect most nearly such straight mathematical adjustment. Such adjustments shall be made to the extent necessary to maintain the proportionate interest of Participants, and preserve, without exceeding, the value of Awards.

Notwithstanding the foregoing, in the event the Company declares and pays any extraordinary cash dividend with respect to Shares which results in a “corporate transaction” as defined in Treas. Reg. §1.424-1(a)(3), the Company shall as of the dividend record date and consistent with Treas. Reg. §1.424-1(a)(1), decrease the per-Share exercise price of each outstanding Option by an amount equal to the per-Share amount of such dividend (but not below $0.005 per Share). Such adjustment shall be made with the intent that after such adjustment the rights and benefits under such Option are no greater than before such dividend was paid. Such adjustment, and any determination or interpretations associated with it, including any determination as to whether a cash dividend is an extraordinary cash dividend, made by the Committee shall be final, binding and conclusive.

If the adjustment to a Participant’s Option described above would lower the exercise price to an amount below $0.005 were it not for the limiting language set forth above, the Committee may, in its discretion, authorize either (i) a cash bonus on the dividend payment date equal to (x) times (y), where (x) is the positive difference between the per-Share amount of the dividend and the amount by which the exercise price of the Option was reduced and (y) is the number of Shares subject to the Option; or (ii) in the discretion of the Chief Executive Officer, any Senior Vice President, the Secretary, or any Assistant Secretary of the Company such other method to compensate the Participant for the difference.

SECTION 14 - CERTAIN CORPORATE TRANSACTIONS

In the event of a corporate transaction (such as, for example, a merger, consolidation, acquisition of property or stock, separation, reorganization, or liquidation), the surviving or successor corporation shall assume each outstanding Award or substitute a new award for each outstanding Award; provided, however, that, in the event of a proposed corporate

transaction, the Committee may terminate all or a portion of the outstanding Awards, effective upon the closing of the corporate transaction, if it determines that such termination is in the best interests of the Company. If the Committee decides so to terminate outstanding Awards, the Committee shall give each Participant holding an Option to be terminated not less than seven days' notice prior to any such termination, and any Option which is to be so terminated may be exercised (if and only to the extent that it is then exercisable) up to, and including the time of such termination. At the closing of such corporate transaction, such Option shall be terminated (unless previously exercised) and the Company shall pay to each Participant who holds an Option so terminated that is exercisable (except for any Option which terminated prior to the date of such closing otherwise than by reason of such Committee action) an amount equal to the Fair Market Value of the Common Stock subject to the Option (determined as of the date of such termination) less the applicable exercise price of the Option (or in the case of any Option with an exercise price that equals or exceeds the Fair Market Value of the Common Stock subject to the Option, such Option shall be cancelled without the payment of consideration therefor). Further, the Committee, in its discretion, may (i) accelerate, in whole or in part, the date on which any or all Options, SARs, or Restricted Stock Units vest, (ii) remove the restrictions from outstanding Restricted Stock, or (iii) cause the payment of any Dividend Equivalent Rights.

The Committee also may, in its discretion, change the terms of any outstanding Award to reflect any such corporate transaction, provided that (i) in the case of ISOs, such change would not constitute a modification under Section 424(h) of the Code, unless the Participant consents to the change, and (ii) in the case of an NQSO or SAR, such change would not constitute a modification under Treas. Reg. §1.409A-(b)(5)(v) or any successor thereto, unless the Participant consents to the change.

Notwithstanding any other provision of this Plan, upon a Change in Control all outstanding Options shall become fully exercisable, all SARs, Restricted Stock Units, and Dividend Equivalent Rights shall become fully vested, and all restrictions shall be removed from any outstanding Restricted Stock.

SECTION 15 - AMENDMENT OR SUSPENSION OF THE PLAN

(a) **In General**. The Board from time to time may amend or suspend the Plan, and the Committee may amend any outstanding Awards in any respect whatsoever; except that the following amendments shall require the approval of shareholders (given in the manner set forth in subsection (b) below) –

(1) A change in the class of employees eligible to participate in the Plan with respect to ISOs;

(2) Except as permitted under Section 13 hereof, an increase in the maximum number of Shares with respect to which ISOs may be granted under the Plan;

(3) An extension of the date, under Section 16 hereof, as of which no additional ISOs shall be granted hereunder; and

(4) Any amendment for which shareholder approval is required under the rules of the exchange or market on which the Common Stock is listed.

Except as provided in Section 14 hereof, no such amendment or suspension shall impair any outstanding Awards or cause (i) the modification (within the meaning of Section 424(h) of the Code) of an ISO, without the consent of the Participant affected thereby, or (ii) the modification (within the meaning of Treas. Reg. §1.409A-1(b)(5)(v) or any successor thereto) of an NQSO or SAR, without the consent of the Participant affected thereby.

(b) **Manner of Shareholder Approval**. The approval of shareholders must comply with all applicable provisions of the corporate charter and by-laws of the Company, and applicable state law prescribing the method and degree of shareholder approval required for the issuance of corporate stock or options. If the applicable state law does not prescribe a method and degree of shareholder approval in such case, the approval of shareholders must be effected –

(1) By a method and in a degree that would be treated as adequate under applicable state law in the case of an action requiring shareholder approval (*i.e.*, an action on which shareholders would be entitled to vote if the action were taken at a duly held shareholders' meeting); or

(2) By a majority of the votes cast (including abstentions, to the extent abstentions are counted as voting under applicable state law), in a separate vote at a duly held shareholders' meeting at which a quorum representing a majority of all outstanding voting stock is, either in person or by proxy, present and voting on the Plan.

SECTION 16 - TERMINATION OF PLAN; CESSATION OF ISO GRANTS

The Board may terminate the Plan at any time and for any reason. No ISOs shall be granted hereunder after November 12, 2024, which date is within 10 years after the date the original Bentley Systems, Incorporated 2015 Stock Option Plan was adopted by the Board, or the date such original Plan was approved by the shareholders of the Company, whichever was earlier. Nothing contained in this Section, however, shall terminate or affect the continued existence of rights created under Awards issued hereunder, and outstanding on the date the Plan is terminated, which by their terms extend beyond such date.

SECTION 17 - SHAREHOLDER APPROVAL

If the Plan is not approved by the shareholders, in the manner described in Section 15(b) hereof, within 12 months before or after the date the Plan was adopted by the Board, the Plan and all Awards granted hereunder shall be null and void and no additional Awards shall be granted hereunder.

SECTION 18 - MISCELLANEOUS

(a) **Listing and Registration of Shares**. If the Company shall deem it necessary to register under the Securities Act or any other applicable statute any Shares purchased under this Plan, or to qualify any such Shares for an exemption from any such statutes,

the Company shall take such action at its own expense. If Shares are listed on any national securities exchange at the time any Shares are purchased hereunder, the Company shall make prompt application for the listing on such national securities exchange of such Shares, at its own expense. Purchases and grants of Shares hereunder shall be postponed as necessary pending any such action.

(b) **Compliance with Rule 16b-3**. All elections and transactions under this Plan by individuals subject to Rule 16b-3, promulgated under Section 16(b) of the Exchange Act, or any successor to such rule, are intended to comply with at least one of the exemptive conditions under such rule. The Committee shall establish such administrative guidelines to facilitate compliance with at least one such exemptive condition under Rule 16b-3 as the Committee may deem necessary or appropriate.

(c) **Rights**. Neither the adoption of the Plan nor any action of the Board or the Committee shall be deemed to give any individual or entity any right to be granted an Award, or any other right hereunder, unless and until the Committee shall have granted such individual or entity an Award, and then the Participant's rights shall be only such as are provided in the Award Agreement. Notwithstanding any provisions of the Plan or the Award Agreement with a Key Employee or Consultant, the Company and any Related Corporation shall have the right, in its discretion but subject to any employment or consulting contract entered into with the Key Employee or Consultant, to retire the Key Employee at any time pursuant to its retirement rules or otherwise to terminate the Participant's employment or consulting agreement at any time for any reason whatsoever or for no reason.

(d) **Indemnification of Board and Committee**. Without limiting any other rights of indemnification which they may have from the Company and any Related Corporation, the members of the Board and the members of the Committee shall be indemnified by the Company against all costs and expenses reasonably incurred by them in connection with any claim, action, suit or proceeding to which they or any of them may be a party by reason of any action taken or failure to act under, or in connection with, the Plan, or any Award granted thereunder, and against all amounts paid by them in settlement thereof (provided such settlement is approved by legal counsel selected by the Company) or paid by them in satisfaction of a judgment in any such action, suit or proceeding, except a judgment based upon a finding of willful misconduct or recklessness on their part. Upon the making or institution of any such claim, action, suit or proceeding, the Board or Committee member shall notify the Company in writing, giving the Company an opportunity, at its own expense, to handle and defend the same before such Board or Committee member undertakes to handle it on his or her own behalf. The provisions of this Section shall not give members of the Board or the Committee greater rights than they would have under the Company's by-laws or Delaware law.

(e) **Application of Funds**. Any cash received in payment for Shares upon exercise of an Option shall be added to the general funds of the Company. Any Common Stock received in payment for Shares upon exercise of an Option shall become treasury stock.

(f) **No Obligation to Exercise Option or SAR**. The granting of an Option or SAR shall impose no obligation upon a Participant to exercise such Option or SAR.

(g) **Governing Law**. The Plan shall be governed by the applicable Code provisions to the maximum extent possible. Otherwise, the laws of the State of Delaware (without reference to principles of conflicts of laws) shall govern the operation of, and the rights of Participants under, the Plan and Awards granted thereunder.

(h) **Withholding and Use of Shares to Satisfy Tax Obligations**

(1) **Obligation to Withhold**. The Company shall withhold from any cash payment made pursuant to an Award an amount sufficient to satisfy all federal, state, and local withholding tax requirements including the withholding requirements of any jurisdiction outside the United States (the "Withholding Requirements"). In the case of an Award pursuant to which Shares may be delivered, the Committee may require that the Participant or other appropriate individual remit to the Company an amount sufficient to satisfy the Withholding Requirements, or make other arrangements satisfactory to the Committee with regard to such Withholding Requirements, before the delivery of any Shares.

(2) **Election to Withhold Shares**. The Committee, in its discretion, may permit or require the Participant to satisfy the withholding requirements, in whole or in part, by electing to have the Company withhold Shares (or by returning previously acquired Shares to the Company); provided, however, that the Company may limit the number of Shares withheld to satisfy the Withholding Requirements to the extent necessary to avoid adverse accounting consequences. Shares shall be valued, for purposes of this paragraph (2), at their Fair Market Value (determined as of the date an amount is includible in income by the Participant). The Committee shall adopt such withholding rules as it deems necessary to carry out the provisions of this Section.

AMENDMENT NO. 1

TO THE

BENTLEY SYSTEMS, INCORPORATED
2015 EQUITY INCENTIVE PLAN

(as Amended and Restated Effective as of May 29, 2018)

WHEREAS, Bentley Systems, Incorporated (the "Company") maintains the Bentley Systems, Incorporated 2015 Equity Incentive Plan, as Amended and Restated Effective as of May 29, 2018 (the "Plan");

WHEREAS, the Company desires to amend the Plan to modify certain provisions relating to the vesting of, and lifting of restrictions on (as applicable), Awards upon a Change in Control; and

WHEREAS, Section 15(a) of the Plan provides that, subject to certain inapplicable limitations, the Board may amend the Plan from time to time;

NOW, THEREFORE, effective as of July 10, 2020, the final paragraph of Section 14 of the Plan is hereby amended and restated in its entirety to read as follows:

"Notwithstanding any other provision of this Plan, upon a Change in Control all outstanding Options shall become fully exercisable, all SARs, Restricted Stock Units, and Dividend Equivalent Rights shall become fully vested, and all restrictions shall be removed from any outstanding Restricted Stock; provided that with respect to any Awards awarded on or after July 10, 2020, the immediately preceding clause shall not apply, and the exercisability and vesting of, and the applicability of any restrictions to (as applicable), such Awards upon a Change in Control shall be determined by the Committee in its discretion.

IN WITNESS WHEREOF, the Company has caused this Amendment No. 1 to be executed this 10th day of July, 2020.

BENTLEY SYSTEMS, INCORPORATED

By: /s/ David Shaman
David Shaman
Chief Legal Officer

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Bentley Systems, Incorporated:

We consent to the use of our report dated March 6, 2020, with respect to the consolidated balance sheets of Bentley Systems, Incorporated as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2019, and the related notes, included herein and to the reference to our firm under the heading 'Experts' in the prospectus.

Our report refers to changes in accounting principle for revenue from contracts with customers and sales commissions due to the adoption of new accounting standards as of January 1, 2019.

/s/ KPMG LLP

Philadelphia, Pennsylvania
August 21, 2020

Exhibit 23.3

Consent of Cambashi Limited

Bentley Systems, Incorporated
685 Stockton Drive
Exton, PA 19341

March 5, 2020

Ladies and Gentlemen:

We hereby consent to the references to our name, and to the use of information, data and statements from our research report entitled "Infrastructure Engineering Software: Potential World-wide Market Size" and extracts of any other information, data and statements prepared by us and provided to the Company such that the extracts are embedded in and form a minority part of material prepared by the Company, in each of (i) the registration statement on Form S-1 (the "Registration Statement") in relation to the initial public offering of Bentley Systems, Incorporated (the "Company") filed with the United States Securities and Exchange Commission (the "SEC") under the Securities Act of 1933, as amended, (ii) any amendments to the Registration Statement, (iii) any written correspondence by the Company with the SEC and (iv) institutional and retail road shows and other activities in connection with any securities offerings and other marketing and fundraising activities by the Company. In granting such consent, we represent that, to our knowledge, the statements made in such research report are accurate statements of Cambashi Limited's research results and independent estimates and opinion as of the date delivered to the Company, and fairly present the matters referred to therein.

We also hereby consent to the filing of this letter as an exhibit to the Registration Statement and any amendments thereto.

Yours faithfully,

CAMBASHI LIMITED

By: /s/ Simon Hailstone
Name: Simon Hailstone
Title: Principal Consultant

Exhibit 23.4

August 21, 2020

Bentley Systems, Incorporated
685 Stockton Drive
Exton, Pennsylvania 19341

Re: Consent to be Named in Registration Statement

Ladies and Gentlemen:

The undersigned hereby consents, pursuant to Rule 438 of the Securities Act of 1933, as amended (the "Act") to be named as a nominee for director of Bentley Systems, Incorporated (the "Company") in the Company's Registration Statement on Form S-1 (the "Registration Statement") filed with the United States Securities and Exchange Commission under the Act (File No. 333-) and any or all amendments thereto relating to the registration of the Class B common stock of the Company in connection with its initial public offering filed by the Company in accordance with the Company's certificate of incorporation and bylaws and accepts such nomination. The undersigned also hereby confirms the undersigned's intent to serve as director of the Company upon consummation of the Company's initial public offering.

Sincerely yours,

/s/ Janet Haugen
Janet Haugen