
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended **December 31, 2020**

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission File Number: **001-39548**

BENTLEY SYSTEMS, INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

95-3936623

(I.R.S. Employer Identification No.)

685 Stockton Drive

Exton, Pennsylvania

(Address of principal executive offices)

19341

(Zip Code)

Registrant's telephone number, including area code: **(610) 458-5000**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
Class B Common Stock, par value \$0.01 per share	BSY	The Nasdaq Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

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

Non-accelerated filer

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 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The registrant was not a public company as of the last business day of its most recently completed second fiscal quarter, and therefore cannot calculate the aggregate market value of its voting and non-voting common equity held by non-affiliates as of such date.

As of February 19, 2021, the registrant had 11,601,757 shares of Class A and 261,617,330 shares of Class B Common Stock, par value \$0.01 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the proxy statement for registrant's Annual Meeting of Stockholders (the "Proxy Statement") are incorporated by reference in Part III of this Form 10-K to the extent stated herein. The Proxy Statement will be filed within 120 days of the registrant's fiscal year ended December 31, 2020.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES
FORM 10-K
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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report includes forward-looking statements. All statements contained in this report 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 report 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 report as a whole, are subject to risks and uncertainties.

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 report in greater detail in the section titled “Risk Factors” and elsewhere in this report. 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 report to conform these statements to actual results or revised expectations.

PART I

Market and Industry Data

The market and industry data used in this report are based on independent industry publications, customers, trade or business organizations, reports by market research firms and other published statistical information from third parties (collectively, the “Third Party Information”), as well as information based on management’s good faith estimates, which we derive from our review of internal information and independent sources. Such Third Party Information generally states that the information contained therein or provided by such sources has been obtained from sources believed to be reliable.

Item 1. Business

Bentley Systems: The Infrastructure Engineering Software Company

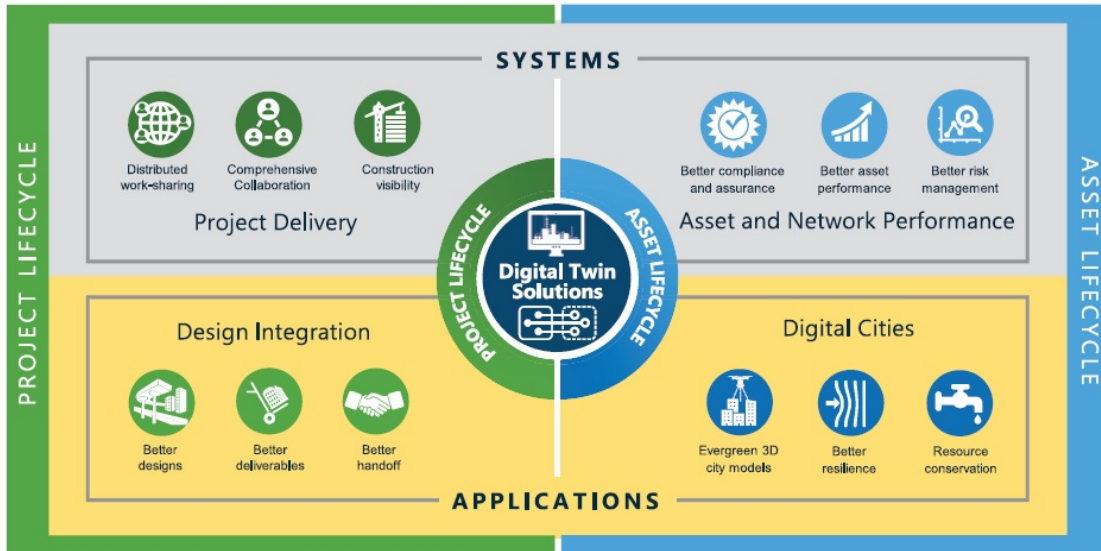
We are a leading global provider of software for infrastructure engineering, enabling the work of civil, structural, geotechnical, and plant engineering practitioners, their project delivery enterprises, and owner-operators of infrastructure assets. We were founded in 1984 by the Bentley brothers. Our 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 51% of the net infrastructure asset value of the global top 500 infrastructure owners (the “global top 500 infrastructure owners”) based on the 2020 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 37% 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 12% of the global top 500 infrastructure owners’ net infrastructure asset value.

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 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 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.

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.

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.

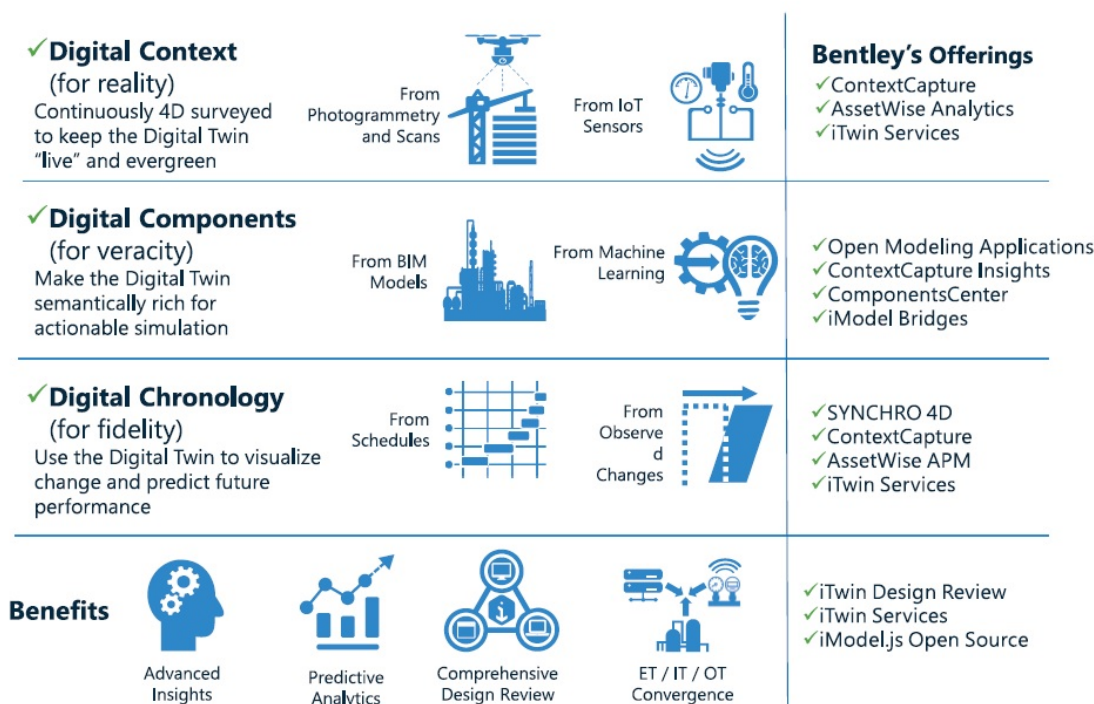
Over our company’s history, as computing capabilities have advanced, the scope of infrastructure engineering software has correspondingly increased. However, project lifecycle and asset lifecycle software markets have developed independently from one another and connecting digital workflows have not 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	<i>2D Drafting</i> (“ <i>Computer Aided Design</i> ,” or “ <i>CAD</i> ”): Workstations and then personal computers make possible interactive graphical applications to automate the creation of previously manually drafted 2D engineering drawings.	<i>2D Mapping</i> : Workstations and personal computers make possible interactive graphical applications to automate the creation of maps.
1996 – 2005	<i>Collaboration</i> : Networked personal computers and servers provide platforms for file-sharing and referencing. CDEs are introduced.	<i>GIS</i> : Networked personal computers and servers enable querying and visualization of geographic data.
2006 – 2015	<i>3D BIM</i> : 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.	<i>Geospatial</i> : Increased computing address space enables geo-coordinated engineering models. GPS technology enables alignment of digital components and real-world coordinates. <i>Asset Performance Management</i> (“ <i>APM</i> ”): solutions are introduced for reliability-centered maintenance and risk-based inspection.
2015 – 2018	<i>Reality Modeling</i> : 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 <i>Common Data Environments</i> to evolve into <i>Connected Data Environments</i> .	<i>APM</i> evolves into <i>Asset Performance Modeling</i> , with engineering models recalibrated to reproduce and understand observed behaviors, and apply algorithms and analytics to derive insights and drive decisions.

Period	Project Lifecycle Software	Asset Lifecycle Software
2019 – Present	<i>4D Digital Twins</i> : 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 Growth Strategies

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

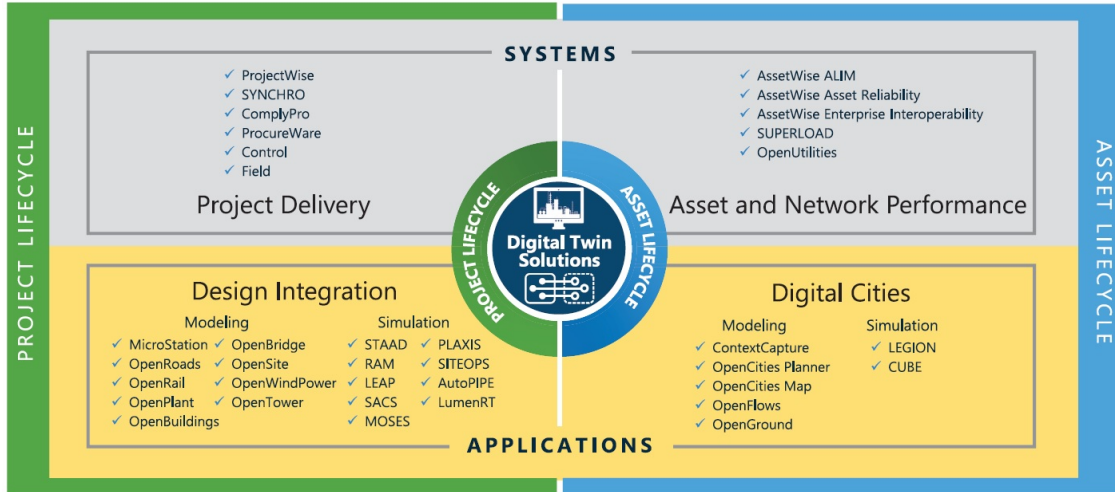
- ***Accretion within existing accounts.*** Most of our accounts currently use a small portion of our overall portfolio, even though they are often working on projects and assets where a large portion of our portfolio could be applied. We believe we can further penetrate our existing accounts by broadening 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.
- **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 AG ("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 intend to pursue strategic investments to enhance and grow 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, Inc. ("DCW"): Our partnership with Topcon Positioning Systems, Inc. ("Topcon") integrates leading surveying technologies and geospatial machine control technologies for digital workflows between engineering and usage in the field. Our companies' DCW joint venture provides expert services to major project delivery enterprises to incorporate these construction 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.
 - iTwins Ventures: This \$100 million corporate venture capital fund was announced to invest in promising technology companies addressing the emerging opportunity for infrastructure digital twin solutions strategically relevant to our business.

The forgoing investments in digital integrator businesses may have lower margins than the majority of our software business activities due to the services nature of digital integrator revenues or due to the early stage nature of the investments.

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 workforce 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;
- *LEGION*, for pedestrian traffic simulation; and
- *CUBE*, for vehicular traffic simulation in roadway design.

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 us and Siemens and commercially available from either company.

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 annualized recurring revenues), we have traditionally offered an enterprise license subscription (“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, enterprise 365 (“E365”) subscription, 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 cloud services subscription (“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 2020, accounts comprising approximately 65% of 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 approximately 1,000 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 57%, 55%, and 54% of our 2020, 2019, and 2018 revenues, respectively), and their clients, the world's public and private infrastructure asset owners and operators (representing 43%, 45%, and 46% of our 2020, 2019, and 2018 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 2020, 2019, or 2018.

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 21 acquisitions over the past five years. Our average historical annual revenue growth rate from acquisitions over the last five years has been approximately 1.7%. 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 Application Programming Interfaces (“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 2020 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 2020 revenue. We are establishing digital integrators such as DCW 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 through 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 Going Digital Awards*, which we held virtually in 2020 due to the COVID-19 pandemic, attracted over 400 project nominations from our accounts and are judged by independent juries in 19 categories for digital advancements 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 more than 1,400 colleagues engaged globally in software research and development as of December 31, 2020. 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 250 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, 2020, 2019, and 2018, our research and development spending was \$185.5 million, \$183.6 million, and \$175.0 million, respectively, and as a percentage of total revenues was 23.1%, 24.9%, and 25.3%, respectively.

Digital co-ventures

In 2019, we and Topcon created an equally-owned joint venture, DCW, 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 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, 2020, we had 115 patents granted and 54 patents pending in the United States, the first of which expires on September 21, 2021, and 22 patents granted and 43 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 2020, our patent committee reviewed 16 invention disclosures submitted by our software developers, and filed 17 U.S. and 11 foreign patent applications, while five U.S. and one 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 150 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 Annual Report on Form 10-K 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 Annual Report on Form 10-K 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.

Environmental, Social, and Governance (“ESG”)

Our mission is to leverage our leading software and services to drive impact through the world’s infrastructure – advancing both the global economy and the environment for improved quality of life. Our mission is rooted in the philosophy of corporate responsibility and ESG. As we scale, we are committed to continually improving our ESG profile. By nature, our products and services provide immense ESG opportunities through resource efficiency, optimization, safety, and mitigation of environmental harm in global infrastructure development. Our commitment is not only inherent to our product offerings, but integral to our business success, as our products and services are directly connected to the well-being of the communities and environments where we work.

As we enter the public markets, we are working to formalize our approach to ESG to ensure that all stakeholder needs and material ESG topics have appropriate strategies and governance in place. In working with an outside consultant, we are developing a formal framework for ESG that we will report on in the future. We look forward to enhancing our disclosures for ESG and welcome engagement from all interested stakeholders as we continue to make progress on this critical initiative.

Human Capital Management

Our global talent management is essential to attract and retain top talent, remain competitive, and ensure business success and continued growth. As of December 31, 2020, we had 4,104 full-time colleagues globally, including 1,566 in the Americas (the U.S., Canada, and Latin America (including the Caribbean)), 1,247 in Europe, the Middle East, and Africa (“EMEA”), and 1,291 in Asia-Pacific (“APAC”). Presently, none of our full-time U.S. colleagues are unionized. Outside the U.S., a small overall portion of our colleagues in certain countries are represented by a colleague representative organization, such as a union or colleague association. Our colleagues bring 65 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 91 doctoral degrees and 1,002 master’s-level degrees.

We believe our culture and values are a key driver for attracting, developing, and retaining highly talented colleagues. Our culture and values are rooted in the philosophy of corporate responsibility and ESG, which drive workforce motivation to make an impact on the world’s infrastructure and 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.

Our approach to talent management is guided by our strong sense of corporate culture. We do this by striving to remain competitive with our peers and to embed opportunity, engagement, diversity, inclusion, and continuous growth throughout the entire lifecycle of talent management.

Talent Acquisition

Our strategies to attract new talent are driven by the competitive programs we offer globally including:

- Globally market-competitive salaries and annual salary review to ensure continued alignment;
- Global Service Awards for significant tenure milestones;
- Colleague referral bonus;
- Market-competitive benefits programs;
- Paid holidays and vacation;
- Colleague Assistance Program for additional resources;

- Educational Assistance Program;
- Global Wellness Program; and
- A tobacco-free workplace.

In addition, we have several formal programs that strategically expand our talent acquisition pipeline including:

- Internship programs sponsored globally;
- Numerous formal relationships with several leading universities throughout the world; and
- Graduate Development Program to identify and attract MBA graduates with backgrounds in both corporate finance and engineering.

Professional Development

We offer several development opportunities to nurture professional growth for our colleagues including:

- Robust talent management portal with career development resources and relevant training programs and learning pathways for all colleagues;
- Leadership Enablement and Development (LEAD) Program to identify and accelerate growth of the next generation of Bentley leaders;
- Formal mentorship opportunities, including the Bentley Network of Women (NOW) mentorship program;
- Education assistance program; and
- Subsidized professional memberships.

Engagement and Performance Management

Employee engagement is critical to maintaining our strong sense of corporate culture. We conduct annual talent reviews and engagement surveys to ensure that we are executing business objectives, providing resources to optimize the performance and potential of our colleagues, and to ensure our colleagues are motivated and engaged.

In 2020's engagement survey, we were pleased to report an 88% participation rate across the organization despite the challenges of remote work. We were also pleased to see continued improvement of our overall colleague engagement, which is above average compared to our technology industry benchmark.

Diversity, Equity, and Inclusion (“DEI”)

As a global company with colleagues of different cultures, backgrounds, and perspectives based in more than 40 countries worldwide, our diversity is what makes us successful. Having diversity, equity, and inclusion at work allows all colleagues to reach their highest performance and potential, and increases an overall sense of well-being. We have launched multiple programs over the years to enhance our diversity, ensure all colleagues have an equitable chance to succeed, and help colleagues feel included in their teams, offices, and organizations at Bentley. These programs are ever evolving and improving as we strive to rise to our challenges and apply colleague feedback for the betterment of all. Some of the programs we launched include:

- Implementing pre-hire assessments to reduce implicit bias and cast a wider net;
- Recruiting at Historically Black Colleges and Universities in the U.S.;
- Mandatory annual Preventing Harassment and Discrimination & Workplace Diversity and Inclusion training;
- Interactive sessions focused on Fostering Diversity and Inclusion and Reducing Unconscious Bias with Executives, Founders, High Potential leaders, and Talent Acquisition;
- Bentley Network of Women (NOW), a development and mentoring program for women globally at the Director level and below;
- Annual global gender pay analysis;
- Paid parental leave in the U.S.;
- IDEA (the “Inclusion, Diversity, and Equity Alliance”), which provides colleagues an opportunity to work with like-minded individuals around the world to influence and lead the direction for Diversity, Equity, and Inclusion for Bentley in the future. IDEA currently has four Core Focus Groups globally: Bentley Pride Alliance, Differently Abled Colleagues at Bentley, People of Color in the U.S., and Women at Bentley; and
- Robust systems in place for reporting and investigating discrimination, harassment, and retaliation.

As an Equal Opportunity Employer, Bentley is committed to offering equal employment opportunities without regard to race, color, religion, sex, national origin, ethnicity, age, disability, military status, veteran status, marital status, genetic information, sexual orientation, gender identity, pregnancy, amnesty, or any status in accordance with applicable federal, state, and local laws.

COVID-19 Response

In response to COVID-19, we immediately implemented initiatives to ensure the safety of our colleagues and enable them to seamlessly move to a work from home environment whilst ensuring continuous communication. Initiatives included:

- Providing home office equipment and network solutions for our colleagues working from home, enabling a smooth transition to working in the virtual environment;
- Safety protocols and resources for colleagues who were permitted to safely work from select global office locations;
- Pulse surveys to gauge colleague sentiment, the effectiveness of our response, and understand the needs of our colleagues during this challenging time;

- Regular communications and on-demand learning for colleagues to stay abreast of our response actions and to work effectively from home; and
- Launch of our “Bentley Has Your Back” campaign to provide our accounts with resources to leverage the full capabilities of Bentley software and troubleshoot challenges during the pandemic.

We are proud to share that at no point during the COVID-19 pandemic have we had to resort to furloughs.

Corporate Information

Bentley Systems, Incorporated was incorporated in Delaware in 1987 and is headquartered in Exton, Pennsylvania. We were originally incorporated in California in 1984 upon our founding.

Website Access to Reports

Our internet address is www.bentley.com. The information posted on our website is not incorporated into this Annual Report on Form 10-K. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge on the Investor Relations portion of our website at www.bentley.com as soon as reasonably practicable after we electronically file such material with, or furnish it to, the U.S. Securities and Exchange Commission (“SEC”).

Item 1A. Risk Factors

The following is a discussion of the material factors that make an investment in the Company and its securities speculative or risky. The risks described herein are not the only risks we may face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially adversely affect our business, financial condition, or operating results.

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 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. The COVID-19 pandemic has had a modest impact on the usage of our solutions by our users. Throughout 2020, usage rates as compared to comparable periods in the prior year have fluctuated between modest increases to modest decreases. There can be no assurance that we will not experience more severe downward trends in usage for as long as the pandemic lasts and thereafter. 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, financial condition, operating results, and/or cash flows 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 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 57%, 58%, and 60% of our total revenues were from outside the United States for the years ended December 31, 2020, 2019, and 2018, 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 legal, regulatory, social, political, economic, and other risks inherent in international business operations, including, without limitation, local product preference and product requirements, trade protection measures, sanctions, quotas, embargoes, import and export licensing requirements, duties, tariffs or surcharges and more stringent regulations relating to privacy and data security and access to, or use of, commercial and personal information, such as the General Data Protection Regulation (the “GDPR”) applicable in the European Union (“E.U.”), and the Cybersecurity Law of the People’s Republic of China.

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.

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

Approximately 19%, 20%, and 19% of our revenues for the years ended December 31, 2020, 2019, and 2018, 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.

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 57%, 58%, and 60% of our total revenues were from outside the United States for the years ended December 31, 2020, 2019, and 2018, 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. For the years ended December 31, 2020, 2019, and 2018, 43%, 47%, and 49%, 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 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.

Consolidation among our accounts and other enterprises in the markets in which we operate may result in a 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, and the loss of key colleagues, accounts, and channel partners of ours or of the acquired company.

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.

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 94% of those balances held outside of the United States as of December 31, 2020. 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.

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.

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 8% of our revenues (under Topic 606) for both the years ended December 31, 2020 and 2019 and 9% of our revenues (under Topic 605) for the year ended December 31, 2018. 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.

Risks Related to Information Technology Systems and Intellectual Property

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.

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.

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 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 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”) and 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 E.U. 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 E.U. 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.

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 them, 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 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. 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.

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.

Risks Related to Regulation and Litigation

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.

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

The United Kingdom's withdrawal from the E.U. ("Brexit") has created political and economic uncertainty, particularly in the United Kingdom and the E.U., and this uncertainty may last for years. Despite the implementation

of the EU-U.K. Trade and Cooperation Agreement beginning on January 1, 2021, it is still unclear how Brexit will ultimately impact relationships within the U.K. and between the U.K. and other countries on many aspects of fiscal policy, cross-border trade and international relations. As a result, it is possible that there may be adverse practical or operational implications on our business. 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 E.U. 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 E.U. 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 E.U. Further, the United Kingdom's exit from the E.U. 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 E.U., 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.

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 U.S. Foreign Corrupt Practices Act ("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.

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. We may also decide to acquire companies whose past activities could give rise to potential liability under export control and sanctions laws. Such acquisitions may require substantial time and resources to integrate the acquired company into our compliance processes, to correct potential compliance gaps, and to remediate past potential violations by the acquired company, including through our own internal actions, voluntary self-disclosures, or other measures.

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.

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.

Risks Related to Our Indebtedness

Our credit agreement, as amended, contains restrictive covenants that may limit our operating flexibility, and certain changes in ownership of equity interests in us by the Bentley Family, as defined, constitutes an event of default.

Our amended and restated credit agreement, entered into on December 19, 2017 (the "Credit Facility"), 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 3.00 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 of our foreign subsidiaries owned by a party to the agreement governing the Credit Facility.

Further, if the Bentley Family ceases to collectively own equity interests in us representing at least 20% 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.

In July 2017, the Financial Conduct Authority (“FCA”) (the authority that regulates LIBOR) announced it intends to stop persuading or compelling banks to submit rates for the calculation of LIBOR after 2021. Further, on November 30, 2020, the ICE Benchmark Administration Limited (“ICE”) announced its plan to extend the date that most USD-LIBOR values would cease being computed to June 30, 2023. The Alternative Reference Rates Committee (“ARRC”) and the International Swaps and Derivatives Association (“ISDA”) have identified the Secured Overnight Financing Rate (“SOFR”) as its preferred alternative rate for USD-LIBOR in debt, derivatives, and other financial contracts. 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. Even if financial instruments are transitioned to alternative benchmarks, such as SOFR, successfully, the new benchmarks are likely to differ from LIBOR, and our interest expense associated with our outstanding indebtedness or any future indebtedness we incur may increase. Further, transitioning to an alternative benchmark rate, such as SOFR, may result in us incurring significant expense and legal risks, as renegotiation and changes to documentation may be required in effecting the transition. Any alternative benchmark rate may be calculated differently than LIBOR and may increase the interest expense associated with our existing or future indebtedness.

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 “Liquidity and Capital Resources” included in Part II Item 7 of this Annual Report on Form 10-K.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on, or to refinance our indebtedness depends on our future performance, which is subject to economic, financial, competitive, and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required

to adopt one or more alternatives, such as selling assets, restructuring debt, or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations. In addition, any future indebtedness we may incur may contain financial and other restrictive covenants that limit our ability to operate our business, raise capital, or make payments under our other indebtedness. If we fail to comply with these covenants or to make payments under our indebtedness when due, then we would be in default under that indebtedness, which could, in turn, result in that and our other indebtedness becoming immediately payable in full.

Risks Related to Our Class B Common Stock

We issued convertible notes that have rights senior to our Class B Common Stock.

In January 2021, we issued \$690 million aggregate principal amount of convertible notes due 2026 (the “2026 Notes”), which will mature on January 15, 2026, unless earlier redeemed or repurchased by us or converted by the holder pursuant to their terms. The 2026 Notes rank senior in right of payment to our Class B Common Stock and any of our indebtedness that is expressly subordinated in right of payment to the 2026 Notes; equal in right of payment to any of our liabilities that are not so subordinated; effectively junior in right of payment to any of our secured indebtedness, to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries. In the event of our bankruptcy, liquidation, reorganization, or other winding up, our assets that secure debt ranking senior or equal in right of payment to the 2026 Notes will be available to pay obligations on the 2026 Notes only after the secured debt has been repaid in full from these assets, and our assets will be available to pay common stockholders only after all debt obligations have been repaid. There may not be sufficient assets remaining to pay amounts due on any or all of the 2026 Notes then outstanding or any or all shares of our Class B Common Stock then outstanding.

The accounting method for convertible debt securities that may be settled in cash, such as the 2026 Notes, could have a material effect on our reported financial condition and results.

The accounting method for reflecting the 2026 Notes on our consolidated balance sheet and reflecting the underlying shares of our Class B Common Stock in our reported diluted earnings per share may adversely affect our reported earnings and financial condition.

In August 2020, the Financial Accounting Standards Board issued ASU No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity* (“ASU 2020-06”). ASU 2020-06 will be effective for SEC-reporting entities for fiscal years beginning after December 15, 2021 (or, in the case of smaller reporting companies, December 15, 2023), including interim periods within those fiscal years. However, early adoption is permitted in certain circumstances for fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. On January 1, 2021, we early adopted ASU 2020-06. In accordance with ASU 2020-06, we are required to calculate diluted earnings per share under the if-converted method. Under the if-converted method, diluted earnings per share will be calculated assuming that all the 2026 Notes are converted solely into shares of Class B Common Stock at the beginning of the reporting period, unless the result would be anti-dilutive. The application of the if-converted method will reduce our reported diluted earnings per share.

Furthermore, if any of the conditions to the convertibility of the 2026 Notes is satisfied, then we may be required under applicable accounting standards to reclassify the liability carrying value of the 2026 Notes as a current, rather than long-term, liability. This reclassification could be required even if no noteholders convert their notes and could materially reduce our reported working capital.

The conditional conversion feature of the 2026 Notes may adversely affect our financial condition and operating results.

In the event the conditional conversion feature of the 2026 Notes is triggered, holders of the 2026 Notes will be entitled to convert the 2026 Notes at any time during specified periods at their option. If one or more holders elect to

convert their 2026 Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our Class B Common Stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their 2026 Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the 2026 Notes as a current, rather than long-term, liability, which would result in a material reduction of our net working capital.

Conversion of the 2026 Notes will dilute the ownership interest of existing stockholders, including holders who had previously converted their 2026 Notes, or may otherwise depress the price of our Class B Common Stock.

The conversion of some or all of the convertible 2026 Notes will dilute the ownership interests of existing stockholders to the extent we deliver shares upon conversion of any of the 2026 Notes. Any sales in the public market of the Class B Common Stock issuable upon such conversion could adversely affect prevailing market prices of our Class B Common Stock. In addition, the existence of the 2026 Notes may encourage short selling by market participants because the conversion of the 2026 Notes could be used to satisfy short positions, or anticipated conversion of the 2026 Notes into shares of our Class B Common Stock could depress the price of our Class B Common Stock. As of December 31, 2020, without giving effect to any potential adjustments to the conversion rate set forth in the indenture or any limits on conversion, and assuming our Class B Common Stock is trading at or above \$64.13 per share, the number of shares of Class B Common Stock issuable upon a full conversion of the notes is 10,759,395.

The capped call transactions entered into when we issued the 2026 Notes may affect the value of our common stock.

In connection with the issuances of the 2026 Notes, we entered into capped call transactions with the respective option counterparties. The capped call transactions are expected generally to reduce the potential dilution upon conversion of the 2026 Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted 2026 Notes with such reduction and/or offset subject to a cap. In connection with establishing their initial hedges of the capped call transactions, the option counterparties or their respective affiliates entered into various derivative transactions with respect to our Class B Common Stock concurrently with or shortly after the pricing of the 2026 Notes. The option counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding derivatives with respect to our Class B Common Stock and/or purchasing or selling our Class B Common Stock or other securities of ours in secondary market transactions prior to the maturity of the 2026 Notes (and are likely to do so during any observation period related to a conversion of 2026 Notes). This activity could cause or avoid an increase or a decrease in the market price of our Class B Common Stock.

The dual class structure of our common stock has the effect of concentrating voting control with the Bentley Control Group, as defined.

Our Class A Common Stock has 29 votes per share, and our Class B Common Stock, which is the class of common stock that is issuable upon conversion of the 2026 Notes and is the only class that is publicly traded and listed, has one vote per share. The beneficial owners of our Class A Common Stock together hold approximately 56.6% of the voting power of our outstanding capital stock as of December 31, 2020. Moreover, as a result of the 29 to one voting ratio between our Class A and Class B Common Stock, the Bentley Control Group controls and will continue to control a majority of the combined voting power of our common stock and therefore is 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. This concentrated control will limit or preclude stockholders' 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 Bentley Control Group may also have interests that differ from those of other stockholders and may vote in a way with which other stockholders disagree and which may be adverse to such other stockholders' interests.

In addition, we are a “controlled company” for the purposes of Nasdaq Listing Rules, which provides us with exemptions from certain of the corporate governance standards imposed by the rules of The Nasdaq Global Select Market. These provisions further allow the Bentley Control Group to exercise significant control over our corporate decisions and limit the ability of the public stockholders to influence our decision making.

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.

General Risk Factors

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 business, financial condition, results of operations, and cash flows.

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 trade relations between the United States and China, in any of the countries in which we do business could harm our business, financial condition, and results of operations.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

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. 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. See Note 5 to our consolidated financial statements for more information about our properties. We lease facilities in an additional 98 locations in the United States and internationally through our foreign subsidiaries. See Note 8 to our consolidated financial statements for more information about our lease commitments.

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.

Item 3. 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, results of operations, or cash flows. We currently believe that we do not have any material litigation pending against us.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information for Common Stock

Our Class B Common Stock is traded on the Nasdaq Stock Market LLC under the symbol BSY since September 25, 2020. Prior to that date, there was no public trading market for our common stock.

Stockholders

As of January 31, 2021, there were 17 holders of record of our Class A Common Stock and 3,722 holders of record of our Class B Common Stock. Because many of our shares of Class B Common Stock are held by brokers or other institutions on behalf of stockholders, we are unable to estimate the total number of Class B stockholders represented by the record holders.

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 2020. In addition, we paid the Special Dividend of \$1.50 per share of common stock on September 2, 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.

Recent Sales of Unregistered Equity Securities

From October 1, 2020 to December 31, 2020, we issued 718,163 shares of our Class B Common Stock pursuant to the vesting of restricted stock awards.

From October 1, 2020 to December 31, 2020, we issued 187,153 shares of our Class B Common Stock in connection with distributions from our amended and restated Bentley Systems, Incorporated Nonqualified Deferred Compensation Plan.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. Unless otherwise stated, the sales of the above securities were deemed to be exempt from registration under the Securities Act in reliance on Rule 701 promulgated under Section 3(b) of the Securities Act as transactions by an issuer pursuant to benefit plans and contracts relating to compensation as provided under Rule 701. All recipients had adequate access, through their relationships with us, to information about us. The issuance of these securities were made without any general solicitation or advertising.

Use of Proceeds from our Public Offering of Common Shares

On September 25, 2020, we completed our IPO. The selling stockholders sold 12,360,991 shares of Class B Common Stock at a public offering price of \$22.00 per share. The Company did not sell any shares in the IPO and did not receive any of the proceeds from the sale of the Class B Common Stock sold by the selling stockholders. For the year ended December 31, 2020, the Company recorded \$26.1 million in *Expenses associated with initial public offering* in the consolidated statement of operations. These expenses included certain non-recurring costs relating to the Company's IPO, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the selling stockholders, professional fees, and other expenses.

The offer and sale of shares of our Class B Common Stock were registered under the Securities Act pursuant to a registration statement on Form S-1, as amended, which was declared effective by the SEC on September 22, 2020. Goldman Sachs & Co. LLC and BofA Securities, Inc. acted as joint book-running managers of the offering and as representatives of the underwriters.

Use of Proceeds from our Follow-On Public Offering of Common Shares

On November 17, 2020, we completed our follow-on public offering of 11,500,000 shares of Class B Common Stock at a public offering price of \$32.00 per share (the "Follow-On Offering"). The Company sold 9,603,965 shares of Class B Common Stock (inclusive of 1,500,000 shares sold upon the exercise by the underwriters of their option to purchase additional shares of the Company's Class B Common Stock). The selling stockholders sold 1,896,035 shares of Class B Common Stock. The Company received net proceeds of \$294.4 million after deducting expenses of \$12.9 million. The Company did not receive any of the proceeds from the sale of the Class B Common Stock sold by the selling stockholders. Expenses associated with the Follow-On Offering included certain non-recurring costs, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the Company, professional fees, and other expenses. The Company agreed to pay certain expenses in connection with the Follow-On Offering on behalf of the selling stockholders and made an accounting policy election to offset these expenses against the Follow-On Offering proceeds. See Note 13 to our consolidated financial statements. We used a portion of the net proceeds from the Follow-On Offering to repay the \$125.0 million Term Loan.

Item 6. Selected Financial Data

The following selected consolidated financial data is not necessarily indicative of results of future operations, and should be read in conjunction with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," and the consolidated financial statements and related notes thereto included in Item 8 of this Annual Report on Form 10-K to fully understand factors that may affect the comparability of the information presented below. The consolidated statements of operations data for the years ended December 31, 2020, 2019, and 2018 are derived from, and are qualified by reference to, the audited consolidated financial statements that are included in this Form 10-K. The consolidated balance sheets data as of December 31, 2020 and 2019 are derived from, and are qualified by reference to, the audited consolidated financial statements that are included in this Form 10-K. The consolidated balance sheet data as of December 31, 2018 are derived from audited consolidated financial statements which are not included in this Form 10-K.

Consolidated Statements of Operations Data (in thousands, except per share data):

	Year Ended December 31,		
	2020	2019	2018
Total revenues	\$ 801,544	\$ 736,654	\$ 691,710
Gross profit	634,389	592,504	560,386
Income from operations	150,150	141,865	121,391
Provision (benefit) for income taxes	38,625	23,738	(29,250)
Net income	\$ 126,521	\$ 103,096	\$ 142,112
Net income per share, basic	\$ 0.44	\$ 0.36	\$ 0.50
Net income per share, diluted	\$ 0.42	\$ 0.35	\$ 0.49

Consolidated Balance Sheets Data (in thousands):

	December 31,		
	2020	2019	2018
Cash and cash equivalents	\$ 122,006	\$ 121,101	\$ 81,183
Working capital, excluding deferred revenues	76,997	166,136	135,163
Total assets	1,126,035	994,599	923,596
Deferred revenues, current and long-term	209,314	213,145	337,451
Total debt	246,000	233,750	258,750
Total stockholders' equity	341,599	334,619	147,431

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion should be read in conjunction with our audited consolidated financial statements and notes thereto appearing in Part II, Item 8 of this Annual Report on Form 10-K. 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 set forth in Part I, Item 1A. Risk Factors of this Annual Report on Form 10-K.

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 and on September 25, 2020, we completed our IPO.

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:

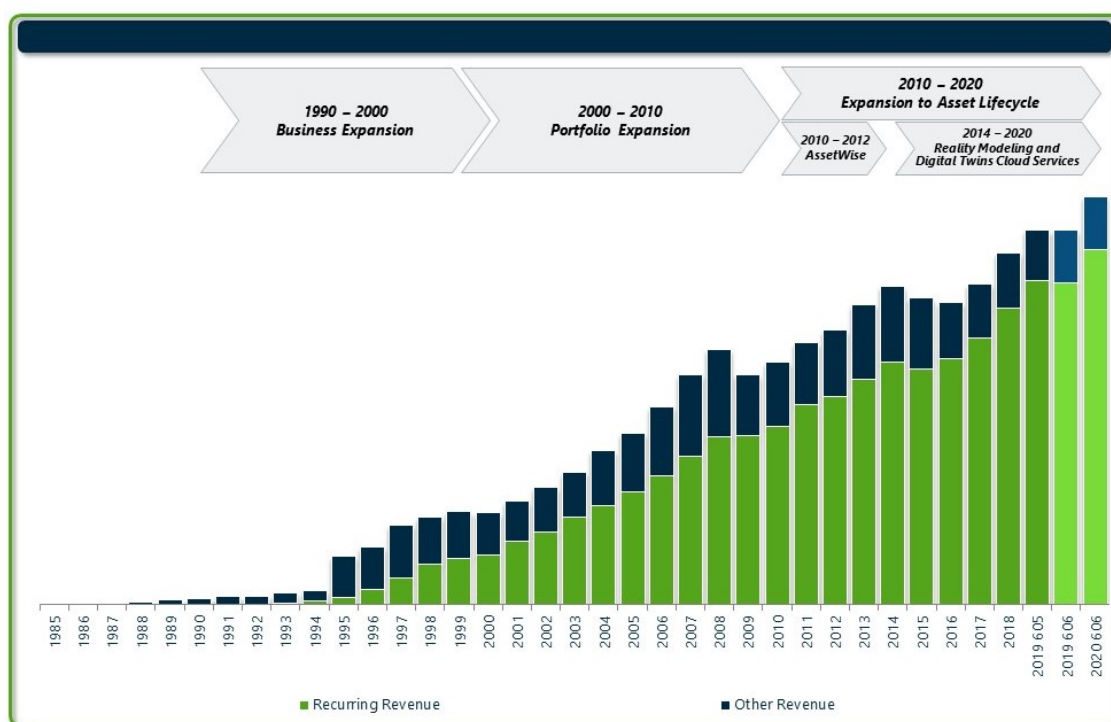
- *public works* (including roads, rail, airports, ports, and water and wastewater networks)/*utilities* (including electric, gas, water, and communications). We estimate that this sector represents 51% of the net infrastructure asset value of the global top 500 infrastructure owners based on the 2020 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 37% 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 12% 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 2020 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 36-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, 2020, under Topic 606¹, subscriptions represented 85% of our revenues, and together with certain professional services revenues that are recurring in nature and represented 2% of our revenues, bring the proportion of our recurring revenues to 87% of total revenues. The remaining 13% 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 2020. Our 2020 revenues were also diversified by account type, size, and geography. Additionally, we believe that we have a loyal account base, with 80% of our 2020 revenues from organizations that have been our accounts for over ten years. Between 2000 and 2020, our revenues had an approximately 8% compound annual growth rate.

¹ On January 1, 2019, we adopted ASU No. 2014-09, *Revenue from Contracts with Customers*, and related amendments (“Topic 606”), which superseded 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.” We adopted Topic 606 using the modified retrospective method and applied the standard only to contracts that were not completed as of the date of initial application. See Note 3 to our consolidated financial statements for further information on the impact upon adoption of Topic 606 as of January 1, 2019.

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	<ul style="list-style-type: none"> Prepaid annual recurring subscription based on owned perpetual licenses 	<ul style="list-style-type: none"> Complete and unlimited global access to our comprehensive portfolio of solutions Includes benefits of SELECT subscriptions 		<ul style="list-style-type: none"> Consumption-based growth and expansion 	<ul style="list-style-type: none"> Available for accounts that prefer to own software licenses 	<ul style="list-style-type: none"> Offered alongside all subscription and license offerings
Topic 606 Revenue Recognition	<ul style="list-style-type: none"> Substantially ratable 	<ul style="list-style-type: none"> Quarterly 	<ul style="list-style-type: none"> Substantially upfront 	<ul style="list-style-type: none"> Usage based, or substantially upfront if prepaid 	<ul style="list-style-type: none"> Upfront 	<ul style="list-style-type: none"> As delivered
Key Features	<ul style="list-style-type: none"> Software upgrades Technical support License pooling CONNECTservices Open Access Portfolio Balancing 	<ul style="list-style-type: none"> Unlimited portfolio access and users Global pricing Success Plan services included 	<ul style="list-style-type: none"> Unlimited portfolio access; unlimited users License pooling 	<ul style="list-style-type: none"> For <i>Applications</i>: unlimited portfolio access; unlimited users For <i>ProjectWise</i> and <i>AssetWise</i>: term access via Passports and Visas or Annual Subscriptions 	<ul style="list-style-type: none"> License ownership for select accounts 	<ul style="list-style-type: none"> 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 resulting in 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. The daily usage fee also includes a term license component, SELECT maintenance and support, hosting, 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. ATL 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 entitles our users to 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 services revenues using subscription and subscription-like contractual structures to make up a greater proportion of our professional services revenues.

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,		
	2020	2019	2018
Last twelve-months recurring revenues (Topic 606)	\$ 696,662	\$ 631,097	\$ 586,466
Last twelve-months recurring revenues (Topic 605)	\$ 700,406	\$ 636,899	\$ 583,402
Constant Currency:			
Annualized recurring revenues (“ARR”) growth rate	8 %	12 %	10 %
Account retention rate (Topic 606)	98 %		
Account retention rate (Topic 605)	98 %	98 %	98 %
Recurring revenues dollar-based net retention rate (Topic 606)	107 %		
Recurring revenues dollar-based net retention rate (Topic 605)	108 %	108 %	107 %

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 amount presented for the year ended December 31, 2018 gives effect to revenue adjustments as if the adoption of Topic 606 had occurred as of January 1, 2018 rather than January 1, 2019. For a reconciliation of the impact of adopting Topic 606 as if it had occurred as of January 1, 2018 on our audited consolidated statement of operations data for the year ended December 31, 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, 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 subscription offering, as well as the term start date of new annual term license subscriptions, does 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 partially 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, 2020, 2019, and 2018 compared to the last twelve-months of the preceding twelve-month period increased by \$65,565 (or \$63,507 under Topic 605), \$44,631 (or \$53,497 under Topic 605), and \$64,543 (or \$59,900 under Topic 605), respectively. The increase was primarily due to growth in ARR, 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, 2020, 87% of our revenues under Topic 606 were recurring revenues. For the twelve months ended December 31, 2019, 86% of our revenues under Topic 606 (or 87% under Topic 605) were 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 accounting principles generally accepted in the United States of America (“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 36%, 25%, and 15% as of December 31, 2020, 2019, and 2018, respectively. Within our consumption-measured ARR, the successful uptake of our new E365 subscription offering has introduced daily consumption-measured ARR, representing 25% of total ARR as of December 31, 2020. 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 December 31, 2020 was \$752,697, calculated using the spot foreign exchange rates as of December 31, 2020.

Our ARR growth rate was favorably impacted from acquisitions by 1% for both the years ended December 31, 2020 and 2019 and 3% for the year ended December 31, 2018.

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 for the year ended December 31, 2020 was calculated under Topic 606 and continues to be presented pursuant to Topic 605 for comparability purposes. Prior to the year ended December 31, 2020, the account retention rate was calculated using revenues recognized pursuant to Topic 605 for all periods in order to enhance comparability during our transition to Topic 606 as we did not have all information that was necessary to calculate account retention rate pursuant to Topic 606 for earlier periods. 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 for the year ended December 31, 2020 was calculated under Topic 606 and continues to be presented pursuant to Topic 605 for comparability purposes. Prior to the year ended December 31, 2020, the recurring revenues dollar-based net retention rate was calculated using revenues recognized pursuant to Topic 605 for all periods in order to enhance comparability during our transition to Topic 606 as we did not have all information that was necessary to calculate recurring revenues dollar-based net retention rate pursuant to Topic 606 for earlier periods. 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 recurring revenues represented 87% of our total revenues under Topic 606 for the twelve months ended December 31, 2020, 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 remain 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 subscription offering, as well as the term start date of new subscriptions, does 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 also use the below non-GAAP financial information to evaluate our ongoing operations and for internal planning and forecasting purposes.

	Year Ended December 31,		
	2020	2019	2018
Topic 606 ⁽¹⁾ :			
Adjusted EBITDA	\$ 266,199	\$ 188,129	\$ 171,120
Adjusted Net Income	\$ 192,678	\$ 135,049	\$ 131,697
Topic 605 ⁽²⁾ :			
Adjusted EBITDA		\$ 186,598	\$ 171,768
Adjusted Net Income		\$ 135,471	\$ 132,246

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

(2) 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 3 to our consolidated financial statements.

Adjusted EBITDA. We define Adjusted EBITDA as net income adjusted for interest expense, net, provision (benefit) for income taxes, depreciation and amortization, stock-based compensation, acquisition expenses, realignment expenses, expenses associated with IPO, other non-operating (income) and expense, net, and (income) loss from investment accounted for using the equity method, 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, stock-based compensation, acquisition expenses, realignment expenses, expenses associated with IPO, 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 (income) loss from investment accounted for using the equity method, 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 606):

	Year Ended December 31,		
	2020	2019	2018
Net income ⁽¹⁾	\$ 126,521	\$ 103,096	\$ 141,563
Interest expense, net	7,476	8,199	8,765
Provision (benefit) for income taxes	38,625	23,738	(29,349)
Depreciation and amortization ^{(3)(a)}	36,117	32,160	29,200
Stock-based compensation ^{(3)(c)}	32,114	8,091	7,989
Acquisition expenses ^{(3)(d)}	11,666	6,597	6,410
Realignment expenses ^{(3)(e)}	10,022	(584)	6,778
Expenses associated with IPO ^{(3)(f)}	26,130	—	—
Other (income) expense, net ^{(3)(g)}	(24,946)	5,557	(236)
Loss from investment accounted for using the equity method, net of tax	2,474	1,275	—
Adjusted EBITDA	<u>\$ 266,199</u>	<u>\$ 188,129</u>	<u>\$ 171,120</u>

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

	Year Ended December 31,		
	2020	2019	2018
Net income ⁽¹⁾	\$ 126,521	\$ 103,096	\$ 141,563
Non-GAAP adjustments, prior to income taxes:			
Amortization of purchased intangibles and developed technologies ^{(3)(b)}	20,721	18,731	17,215
Stock-based compensation ^{(3)(c)}	32,114	8,091	7,989
Acquisition expenses ^{(3)(d)}	11,666	6,597	6,410
Realignment expenses ^{(3)(e)}	10,022	(584)	6,778
Expenses associated with IPO ^{(3)(f)}	26,130	—	—
Other (income) expense, net ^{(3)(g)}	(24,946)	5,557	(236)
Total non-GAAP adjustments, prior to income taxes	75,707	38,392	38,156
Income tax effect of non-GAAP adjustments	(12,024)	(7,714)	(5,971)
Non-recurring income tax expense related to the JOBS Act ^{(3)(h)}	—	—	4,318
Non-recurring income tax benefit related to intercompany transactions ⁽³⁾⁽ⁱ⁾	—	—	(46,369)
Loss from investment accounted for using the equity method, net of tax	2,474	1,275	—
Adjusted Net Income	<u>\$ 192,678</u>	<u>\$ 135,049</u>	<u>\$ 131,697</u>

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

	Year Ended December 31,	
	2019	2018
Net income ⁽²⁾	\$ 103,426	\$ 142,112
Interest expense, net	8,199	8,765
Provision (benefit) for income taxes	21,762	(29,250)
Depreciation and amortization ^{(3)(a)}	32,160	29,200
Stock-based compensation ^{(3)(c)}	8,091	7,989
Acquisition expenses ^{(3)(d)}	6,712	6,410
Realignment expenses ^{(3)(e)}	(584)	6,778
Expenses associated with IPO ^{(3)(f)}	—	—
Other (income) expense, net ^{(3)(g)}	5,557	(236)
Loss from investment accounted for using the equity method, net of tax	1,275	—
Adjusted EBITDA	<u>\$ 186,598</u>	<u>\$ 171,768</u>

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

	Year Ended December 31,	
	2019	2018
Net income ⁽²⁾	\$ 103,426	\$ 142,112
Non-GAAP adjustments, prior to income taxes:		
Amortization of purchased intangibles and developed technologies ^{(3)(b)}	18,731	17,215
Stock-based compensation ^{(3)(c)}	8,091	7,989
Acquisition expenses ^{(3)(d)}	6,712	6,410
Realignment expenses ^{(3)(e)}	(584)	6,778
Expenses associated with IPO ^{(3)(f)}	—	—
Other (income) expense, net ^{(3)(g)}	5,557	(236)
Total non-GAAP adjustments, prior to income taxes	38,507	38,156
Income tax effect of non-GAAP adjustments	(7,737)	(5,971)
Non-recurring income tax expense related to the JOBS Act ^{(3)(h)}	—	4,318
Non-recurring income tax benefit related to intercompany transactions ⁽³⁾⁽ⁱ⁾	—	(46,369)
Loss from investment accounted for using the equity method, net of tax	1,275	—
Adjusted Net Income	<u>\$ 135,471</u>	<u>\$ 132,246</u>

(1) The Topic 606 unaudited amounts presented for the year ended December 31, 2018 give effect to revenue and income tax 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 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 is 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 3 to our consolidated financial statements for additional information regarding the adoption of Topic 606.

Reconciliation of Topic 605 to Topic 606:

	Year Ended December 31, 2018		
	As Reported Topic 605	Impact from the Adoption of Topics 606 and 340-40	As Adjusted Topic 606
Subscriptions	\$ 557,421	\$ 3,064	\$ 560,485
Perpetual licenses	61,065	(3,712)	57,353
Benefit for income taxes	29,250	99	29,349
Net income	\$ 142,112	<u>\$ (549)</u>	\$ 141,563

- (2) The Topic 605 unaudited amounts presented for the years 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 3 to our consolidated financial statements.
- (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 \$4,699, \$3,516, and \$2,052 for the years ended December 31, 2020, 2019, and 2018, 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. Amortization of acquisition related developed technologies under our ACDP was \$388, \$723, and \$375 for the years ended December 31, 2020, 2019, and 2018, 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) *Stock-based compensation.* We exclude certain stock-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 stock-based compensation expenses allows investors to make meaningful comparisons between our recurring core business results of operations and those of other companies. For the year ended December 31, 2020, we recorded \$15,102 of stock-based compensation expense related to the restricted stock and RSUs that vested as a result of the IPO.
- (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 colleagues whose positions were eliminated. We exclude these charges because they are not reflective of our ongoing business and results of operations. 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) *Expenses associated with IPO.* These expenses included certain non-recurring costs relating to our IPO, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the selling stockholders, professional fees, and other expenses. We exclude these charges because they are not reflective of our ongoing business and results of operations. We believe it is useful for investors to understand the effects of these items on our total operating expenses.
- (g) *Other (income) expense, net.* Primarily consists of foreign exchange (gains) losses of \$(22,919), \$5,591, and \$418 for the years ended December 31, 2020, 2019, and 2018, respectively. The foreign exchange (gains) losses derive primarily from U.S. Dollar denominated cash and cash equivalents, accounts receivable, and intercompany balances held by foreign subsidiaries. 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* in the consolidated statements of operations. Intercompany finance transactions denominated in U.S. Dollars resulted in unrealized foreign exchange (gains) losses of \$(22,310) and \$5,270 for the years ended December 31, 2020 and 2019, respectively. Other (income) expense, net also includes a gain from the change in fair value of our interest rate swap of \$347 and a gain from the change in fair value of acquisition contingent consideration of \$1,340 for the year ended December 31, 2020. We exclude these charges because they are not reflective of ongoing business and results of operations. We believe it is useful for investors to understand the effects of these items on our total operating expenses.
- (h) *Non-recurring income tax expense related to the JOBS Act.* The JOBS Act was enacted on December 22, 2017 and resulted in a provisional income 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 income tax expense related to provisional amounts recorded in 2017.
- (i) *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.

Key Factors Impacting Comparability and Performance:

Highlights for the year ended December 31, 2020. In addition to our performance previously discussed in “—Key Business Metrics” and “—Non-GAAP Financial Measures,” and as discussed further below in “—Results of Operations” and “—Liquidity and Capital Resources,” our consolidated financial statements for the year ended December 31, 2020 were impacted by the following:

- On September 25, 2020, we completed our IPO. The selling stockholders sold 12,360,991 shares of Class B Common Stock at a public offering price of \$22.00 per share. The Company did not sell any shares in the IPO and did not receive any of the proceeds from the sale of the Class B Common Stock sold by the selling stockholders;
- On November 17, 2020, we completed our follow-on public offering of 11,500,000 shares of Class B Common Stock at a public offering price of \$32.00 per share. We sold 9,603,965 shares of Class B Common Stock (inclusive of 1,500,000 shares sold upon the exercise by the underwriters of their option to purchase additional shares of our Class B Common Stock). The selling stockholders sold 1,896,035 shares of Class B Common Stock. We received net proceeds of \$294,429 after deducting expenses of \$12,898. We did not receive any of the proceeds from the sale of the Class B Common Stock sold by the selling stockholders;
- On August 28, 2020, our board of directors declared the Special Dividend of \$1.50 per share of our common stock (\$392,489 in the aggregate);
- For the year ended December 31, 2020, we recorded \$15,102 of stock-based compensation expense related to the restricted stock and RSUs that vested as a result of the IPO;
- During the third quarter of 2020, we initiated a strategic realignment program in order to better serve our users and to better align resources with the evolving needs of our business (the “2020 Program”). We incurred realignment costs of \$10,046 for the year ended December 31, 2020 related to the aforementioned program, which represents termination benefits for colleagues whose positions were eliminated;
- 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;
- Effective as of the beginning of the fourth quarter of 2020, participants in our Executive Bonus Plan may elect to receive any portion, or all, of such participants’ non-deferred incentive bonus in the form of shares of fully vested Class B Common Stock instead of cash payments and subject to a combined quarterly limit of \$7,500. During the fourth quarter of 2020, we recorded \$6,524 of stock-based compensation expense related to this plan; and
- The COVID-19 pandemic has had a modest impact on the usage of our solutions by our users. Throughout 2020, usage rates as compared to comparable periods in the prior year have fluctuated between modest increases to modest decreases. Usage declines have had a minimal impact on our recurring revenues, which are comprised primarily of longer term contracts where short-term usage rate declines do not adversely impact revenues. However, to the extent declines in usage have also occurred within our recurring revenue contracts with shorter term resets, as is the case with our E365 contracts, the usage declines have modestly impacted revenues. The growth of our revenues from perpetual licenses and professional services has also been impacted as certain accounts have shifted spend to subscription solutions or delayed new projects. Overall, while our rate of growth has been impacted, our revenues have continued to grow given the mission critical nature of our solutions. As a precaution in the COVID-19 environment, we have actively managed our spending. Actions have included efforts to minimize employee travel, curtail variable compensation plans, and reduce and recharacterize promotional spending with a shift to virtual events. These actions have resulted in substantial cost savings during the pandemic, which are unlikely to be fully sustainable prospectively.

Impact of Topics 606 and 340-40. On January 1, 2019, we adopted Topic 606, which superseded 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 for the year ended December 31, 2018 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 is 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.

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 subscription offering, does 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 renewed an annual ELS at the beginning of July 2019, then we would 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 switched from our ELS offering to our consumption based E365 offering, then we would only recognize the distinct license component for the consumption period from July 1, 2019 to December 31, 2019 in 2019.

See Note 3 to our consolidated financial statements 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 2020, 43% of our revenues were denominated in various foreign currencies. Correspondingly, in 2020, 47% 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 six, four, and seven acquisitions for the years ended December 31, 2020, 2019, and 2018, respectively.

Income taxes. The JOBS Act was enacted on December 22, 2017 and resulted in a provisional income 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 JOBS Act in the year ended December 31, 2018 and recorded a \$4,318 increase to income 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 believe we did not have any significant 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. When compared to levels from the same periods in 2019, our accounts' usage of our applications was down approximately 3-5% for the months of March and April 2020, showed improvement to be nearly equivalent to past usage during May and June 2020, modestly declined approximately 2-3% for the months of July through November 2020, and improved to reflect usage growth of approximately 2-3% during December 2020 relative to the same period in the prior year. The most recent pattern of decline in usage follows capital projects within sectors, as opposed to the initial 2020 declines which we observed to follow the geographic spread of the pandemic. The modest, yet persisting, decline in usage has had limited impact on our recurring revenues, which are comprised primarily of longer term contracts. To the extent declines in usage have also occurred within our recurring revenue contracts with shorter term resets, as is the case with our E365 contracts, the usage declines have modestly impacted revenues, notably in those accounts also exposed to capital projects in the industrial and resources sectors, and to a lesser extent, commercial and facilities sectors. 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 pandemic.

We have also taken measures to reduce selected operating expenses, including various costs associated with travel and facilities.

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, 2020. As of December 31, 2020, we had \$122,006 of cash and cash equivalents, and \$253,850 was available under our Credit Facility. Subsequent to December 31, 2020, the Company refinanced its Credit Facility and completed an offering of convertible debt. For further detail, see Note 25 to our consolidated financial statements.

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. SELECT subscriptions revenues are recognized as distinct performance obligations are satisfied.

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. Our E365 subscription, 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 a term license component, SELECT maintenance and support, hosting, and Success Plan services, which are designed to achieve business outcomes through more efficient and effective use of our software. The ELS and E365 offerings both contain a distinct term license component. ELS revenue is recognized as the distinct performance obligations are satisfied. E365 revenue is recognized based upon usage incurred by the account.

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 entitles our users to certain functionality of our *ProjectWise* and *AssetWise* systems. Our standard offerings are usage based with monetization through our CSS program. 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. QTL, MTL, Visas and Passports subscriptions are recognized based upon usage incurred by the account.

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.

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.

Headcount-related costs

For the year ended December 31, 2020, 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). Total costs capitalized under the ACDP were \$7,809, \$6,060, and \$5,735 for the years ended December 31, 2020, 2019, and 2018, respectively. Additionally, total ACDP related amortization recorded in *Costs of subscriptions and licenses* was \$4,699, \$3,516, and \$2,052 for the years ended December 31, 2020, 2019, and 2018, respectively.

Certain costs related to the creation of foreign language translations are capitalized and amortized over the economic life of the software. For the years ended December 31, 2020, 2019, and 2018, total costs capitalized related to the creation of foreign language translations were \$951, \$835, and \$877, respectively. Additionally, for the years ended December 31, 2020, 2019, and 2018, amortization related to the creation of foreign language translations recorded in *Costs of subscriptions and licenses* in the consolidated statements of operations was \$919, \$823, and \$1,008, 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. We capitalize certain incremental costs of obtaining a contract and 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 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. Following the completion of the IPO, 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.

Expenses associated with IPO. These expenses included certain non-recurring costs relating to our IPO, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the selling stockholders, professional fees, and other expenses. We completed our IPO on September 25, 2020. These fees were expensed in the period incurred.

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 cash and cash equivalents, accounts receivable, and intercompany balances held by foreign subsidiaries with non-U.S. Dollar functional currencies.

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

Loss from investment accounted for using the equity method, net of tax. Loss from investment accounted for using the equity method includes our proportional share of loss in a joint venture.

Results of operations:

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

	Year Ended December 31,		
	2020	2019	2018
Revenues:			
Subscriptions	\$ 679,273	\$ 608,300	\$ 557,421
Perpetual licenses	57,382	59,693	61,065
Subscriptions and licenses	736,655	667,993	618,486
Services	64,889	68,661	73,224
Total revenues	801,544	736,654	691,710
Cost of revenues:			
Cost of subscriptions and licenses	95,803	71,578	55,113
Cost of services	71,352	72,572	76,211
Total cost of revenues	167,155	144,150	131,324
Gross profit	634,389	592,504	560,386
Operating expenses:			
Research and development	185,515	183,552	175,032
Selling and marketing	143,791	155,294	160,635
General and administrative	113,451	97,580	89,328
Amortization of purchased intangibles	15,352	14,213	14,000
Expenses associated with initial public offering	26,130	—	—
Total operating expenses	484,239	450,639	438,995
Income from operations	150,150	141,865	121,391
Interest expense, net	(7,476)	(8,199)	(8,765)
Other income (expense), net	24,946	(5,557)	236
Income before income taxes	167,620	128,109	112,862
(Provision) benefit for income taxes	(38,625)	(23,738)	29,250
Loss from investment accounted for using the equity method, net of tax	(2,474)	(1,275)	—
Net income	126,521	103,096	142,112
Less: Net income attributable to participating securities	(234)	(8)	(4)
Net income attributable to Class A and Class B common stockholders	\$ 126,287	\$ 103,088	\$ 142,108
Per share information:			
Net income per share, basic	\$ 0.44	\$ 0.36	\$ 0.50
Net income per share, diluted	\$ 0.42	\$ 0.35	\$ 0.49
Weighted average shares outstanding, basic	289,863,272	284,625,642	285,805,096
Weighted average shares outstanding, diluted	299,371,129	293,796,707	292,624,496

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.

Comparison of the Years Ended December 31, 2020 and 2019

Revenues

	Year Ended December 31,		Comparison		
			Amount	%	Constant Currency %
	2020	2019			
Revenues:					
Subscriptions	\$ 679,273	\$ 608,300	\$ 70,973	11.7 %	11.0 %
Perpetual licenses	57,382	59,693	(2,311)	(3.9)%	(4.6)%
Subscriptions and licenses	736,655	667,993	68,662	10.3 %	9.6 %
Services	64,889	68,661	(3,772)	(5.5)%	(5.7)%
Total revenues	\$ 801,544	\$ 736,654	\$ 64,890	8.8 %	8.2 %

Total revenues increased by \$64,890, or 8.8%, to \$801,544 for the year ended December 31, 2020. For the year ended December 31, 2020, the increase was driven by improvements in our organic performance of \$26,757, the impact from acquisitions of \$33,463, and the positive foreign currency effects due to a weaker U.S. Dollar relative to our other functional currencies of \$4,670. On a constant currency basis, our revenues increased by 8.2% for the year ended December 31, 2020 as compared to the year ended December 31, 2019.

- *Subscriptions.* For the year ended December 31, 2020, subscriptions revenues increased by \$70,973, or 11.7%, as compared to the year ended December 31, 2019. This increase was driven primarily by improvements in our organic performance of \$52,012, and to a lesser extent, the impact from acquisitions of \$14,841, as well as the positive foreign currency effects due to a weaker U.S. Dollar relative to our other functional currencies of \$4,120. On a constant currency basis, our subscriptions revenues increased by 11.0% for the year ended December 31, 2020 as compared to the year ended December 31, 2019.

For the year ended December 31, 2020, 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 107% and 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 for the year ended December 31, 2020.

- *Perpetual licenses.* For the year ended December 31, 2020, perpetual licenses revenues decreased by \$2,311, or 3.9%, as compared to the year ended December 31, 2019. This decrease was driven by a reduction in our organic performance of \$4,427, partially offset by the impact from acquisitions of \$1,706, as well as the positive foreign currency effects due to a weaker U.S. Dollar relative to our other functional currencies of \$410. On a constant currency basis, our perpetual licenses revenues decreased by 4.6% for the year ended December 31, 2020 as compared to the year ended December 31, 2019.

We observed a decrease in organic performance for the year ended December 31, 2020 as certain accounts delayed purchase decisions or shifted spend to subscription solutions due to COVID-19.

- *Services.* For the year ended December 31, 2020, services revenues decreased by \$3,772, or 5.5%, as compared to the year ended December 31, 2019. This decrease was driven primarily by a reduction in our organic performance of \$20,828, partially offset by the impact from acquisitions of \$16,916, as well as the positive foreign currency effects due to a weaker U.S. Dollar relative to our other functional currencies of \$140. On a constant currency basis, our services revenues decreased by 5.7% for the year ended December 31, 2020 as compared to the year ended December 31, 2019.

For the year ended December 31, 2020, the decrease in organic performance was primarily due to the winding down or completion of several larger services projects during 2019 and 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:

	Year Ended		Comparison		Constant Currency %
	December 31,		Amount	%	
	2020	2019			
Revenues by geographic area:					
Americas	\$ 395,746	\$ 356,331	\$ 39,415	11.1 %	11.3 %
EMEA	254,036	236,602	17,434	7.4 %	5.8 %
APAC	151,762	143,721	8,041	5.6 %	4.4 %
Total revenues by geographic area	\$ 801,544	\$ 736,654	\$ 64,890	8.8 %	8.2 %

- *Americas.* For the year ended December 31, 2020, revenues from the Americas increased by \$39,415, or 11.1%, as compared to the year ended December 31, 2019. This increase was driven primarily by improvements in our organic performance of \$18,002 and the impact from acquisitions of \$22,226, partially offset by negative foreign currency effects due to a stronger U.S. Dollar relative to our other functional currencies of \$813. On a constant currency basis, our revenues from the Americas increased by 11.3% for the year ended December 31, 2020 as compared to the year ended December 31, 2019.

The increase in organic performance was primarily due to expansion of our recurring subscription revenues from our existing accounts in the United States and Canada. Approximately 30% of our subscription-related organic performance expansion was driven by *ProjectWise* for the year ended December 31, 2020.

- *EMEA.* For the year ended December 31, 2020, revenues from EMEA increased by \$17,434, or 7.4%, as compared to the year ended December 31, 2019. This increase was driven by improvements in our organic performance of \$3,168, the impact from acquisitions of \$10,554, and the positive foreign currency effects due to a weaker U.S. Dollar relative to our other functional currencies of \$3,712. On a constant currency basis, our revenues from EMEA increased by 5.8% for the year ended December 31, 2020 as compared to the year ended December 31, 2019.

The increase in organic performance was primarily due to expansion of our recurring subscription revenues throughout the region. Approximately 50% of our subscription-related organic performance expansion was driven by *ProjectWise* for the year ended December 31, 2020.

- *APAC*. For the year ended December 31, 2020, revenues from APAC increased by \$8,041, or 5.6%, as compared to the year ended December 31, 2019. This increase was driven by improvements in our organic performance of \$5,587 and, to a lesser extent, the impact from acquisitions of \$683 and the positive foreign currency effects due to a weaker U.S. Dollar relative to our other functional currencies of \$1,771. On a constant currency basis, our revenues from APAC increased by 4.4% for the year ended December 31, 2020 as compared to the year ended December 31, 2019.

For the year ended December 31, 2020, the increase in organic performance was primarily due to expansion of our recurring subscription revenues from our existing accounts in Australia, China, and South East Asia. Approximately 40% of our subscription-related organic performance expansion was driven by *ProjectWise* and Offshore Structural Analysis products.

Cost of Revenues

	Year Ended December 31,		Comparison		
			Amount	Constant Currency	
	2020	2019			%
Cost of subscriptions and licenses	\$ 95,803	\$ 71,578	\$ 24,225	33.8 %	32.9 %
Cost of services	71,352	72,572	(1,220)	(1.7)%	(1.5)%
Total cost of revenues	\$ 167,155	\$ 144,150	\$ 23,005	16.0 %	15.6 %

For the year ended December 31, 2020, cost of revenues increased by \$23,005, or 16.0%, to \$167,155. 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 15.6% for the year ended December 31, 2020 as compared to the year ended December 31, 2019.

For the year ended December 31, 2020, cost of subscriptions and licenses increased 33.8%, or 32.9% in constant currency, as compared to the year ended December 31, 2019. On a constant currency basis, this increase was primarily due to an increase in headcount-related costs, excluding stock-based compensation expense, of approximately \$8,500, an increase in stock-based compensation expense of approximately \$800, an increase in hosting costs of approximately \$8,000, an increase in amortization expense for software and technology of approximately \$2,200, and an increase in facility-related costs of approximately \$600.

For the year ended December 31, 2020, cost of services decreased by 1.7%, or 1.5% in constant currency, as compared to the year ended December 31, 2019. On a constant currency basis, the decrease was primarily due to a decrease in headcount-related costs, excluding stock-based compensation expense and incremental realignment costs from the 2020 Program, of approximately \$1,500 and a decrease in amortization of previously capitalized costs related to certain professional services projects of approximately \$4,600, partially offset by an increase in stock-based compensation expense of approximately \$2,400, incremental realignment costs from the 2020 Program of approximately \$1,400, and an increase in facility-related costs of approximately \$1,400.

Operating Expenses

	Year Ended December 31,		Comparison		
			Amount	%	Constant Currency
	2020	2019			
Research and development	\$ 185,515	\$ 183,552	\$ 1,963	1.1 %	1.0 %
Selling and marketing	143,791	155,294	(11,503)	(7.4)%	(7.3)%
General and administrative	113,451	97,580	15,871	16.3 %	16.0 %
Amortization of purchased intangibles	15,352	14,213	1,139	8.0 %	7.3 %
Expenses associated with initial public offering	26,130	—	26,130	*	*
Total operating expenses	\$ 484,239	\$ 450,639	\$ 33,600	7.5 %	7.4 %

* Not meaningful

Research and development. For the year ended December 31, 2020, research and development expenses increased 1.1%, or 1.0% in constant currency, as compared to the year ended December 31, 2019. On a constant currency basis, the increase was primarily due to an increase in stock-based compensation expense of approximately \$8,900 and incremental realignment costs from the 2020 Program of approximately \$800, partially offset by a decrease in headcount-related costs, excluding stock-based compensation expense and incremental realignment costs from the 2020 Program, of approximately \$7,300 due to COVID-19 related modification to employee travel and variable compensation plans.

Selling and marketing. For the year ended December 31, 2020, selling and marketing expenses decreased 7.4%, or 7.3% in constant currency, as compared to the year ended December 31, 2019. On a constant currency basis, this decrease was primarily due to a decrease in headcount-related costs, excluding stock-based compensation expense and incremental realignment costs from the 2020 Program, of approximately \$16,700 due to COVID-19 related modification to employee travel and variable compensation plans and a reduction in promotional costs of \$5,000, substantially from rationalizing our marketing spend and shifting to virtual events given the evolving business environment as a result of COVID-19, partially offset by an increase in stock-based compensation expense of approximately \$4,400 and incremental realignment costs from the 2020 Program of approximately \$6,000.

General and administrative. For the year ended December 31, 2020, general and administrative expenses increased 16.3%, or 16.0% in constant currency, as compared to the year ended December 31, 2019. On a constant currency basis, the increase was primarily due to an increase in headcount-related costs, excluding stock-based compensation expense and incremental realignment costs from the 2020 Program, of approximately \$4,000, an increase in stock-based compensation expense of approximately \$8,100, incremental realignment costs from the 2020 Program of approximately \$1,800, and an increase in acquisition and integration costs and other corporate initiatives of \$2,300.

Amortization of purchased intangibles. For the year ended December 31, 2020, amortization of purchased intangibles increased by 8.0%, or 7.3% in constant currency, as compared to the year ended December 31, 2019. The increase was primarily attributable to acquisitions that closed in 2020.

Expenses associated with initial public offering. For the year ended December 31, 2020, expenses associated with IPO included certain non-recurring costs relating to our IPO, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the selling stockholders, professional fees, and other expenses. We completed our IPO on September 25, 2020. These fees were expensed in the period incurred.

Interest Expense, Net

	Year Ended December 31,	
	2020	2019
Interest expense	\$ (7,913)	\$ (9,731)
Interest income	437	1,532
Total interest expense, net	<u>\$ (7,476)</u>	<u>\$ (8,199)</u>

	Year Ended December 31,	
	2020	2019
Bank credit facility	\$ (6,878)	\$ (8,971)
Amortization of deferred financing costs	(553)	(553)
Other, net	(45)	1,325
Total interest expense, net	<u>\$ (7,476)</u>	<u>\$ (8,199)</u>

For the year ended December 31, 2020, net interest expense decreased from the year ended December 31, 2019 primarily due to a lower average interest rate, partially offset by a higher outstanding average balance under the Credit Facility, which includes the new term loan of \$125,000 we entered into on September 2, 2020 via the First Amendment to the Credit Facility (the "Term Loan") and subsequently repaid in November 2020.

Other Income (Expense), Net

	Year Ended December 31,	
	2020	2019
Foreign exchange gain (loss)	\$ 22,919	\$ (5,591)
Other income (expense), net	2,027	34
Total other income (expense), net	<u>\$ 24,946</u>	<u>\$ (5,557)</u>

For the years ended December 31, 2020 and 2019, other income (expense), net primarily consists of foreign exchange gains (losses) of \$22,919 and \$(5,591), respectively. The foreign exchange gains (losses) derive primarily from U.S. Dollar denominated cash and cash equivalents, accounts receivable, and intercompany balances held by foreign subsidiaries. For the years ended December 31, 2020 and 2019, intercompany finance transactions denominated in U.S. Dollars resulted in unrealized foreign exchange gains (losses) of \$22,310 and \$(5,270), respectively. 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, 2020, other income (expense), net also includes a gain from the change in fair value of our interest rate swap of \$347 and a gain from the change in fair value of acquisition contingent consideration of \$1,340.

(Provision) Benefit for Income Taxes

The income tax provisions for the years ended December 31, 2020 and 2019 were based on the effective income tax rates applicable for those periods. For the years ended December 31, 2020 and 2019, we recognized an aggregate consolidated income tax expense of \$38,625 and \$23,738, respectively, for U.S. domestic and foreign income taxes. For the years ended December 31, 2020 and 2019, we recorded a discrete tax benefit of \$8,644 and \$2,940, respectively, associated with stock-based compensation. The effective income tax rate of 23.0% for the year ended December 31, 2020 was higher than the effective income tax rate of 18.5% for the year ended December 31, 2019 primarily due to officer compensation limitation provisions resulting from our IPO, which went effective during the third quarter of 2020, and the non-deductibility of expenses associated with our IPO, partially offset by increased discrete windfall tax benefits from stock-based compensation.

Net Income

	Year Ended December 31,	
	2020	2019
Net income	\$ 126,521	\$ 103,096

For the year ended December 31, 2020, net income increased by \$23,425, or 22.7%, compared to the year ended December 31, 2019. The changes are due to the factors stated above.

Adjusted EBITDA and Adjusted Net Income

	Year Ended December 31,	
	2020	2019
Adjusted EBITDA	\$ 266,199	\$ 188,129
Adjusted Net Income	\$ 192,678	\$ 135,049

For the year ended December 31, 2020, Adjusted EBITDA increased by \$78,070 compared to the year ended December 31, 2019. For the years ended December 31, 2020 and 2019, Adjusted EBITDA as a percentage of revenue was 33.2% and 25.5%, respectively.

For the year ended December 31, 2020, Adjusted Net Income increased by \$57,629 compared to the year ended December 31, 2019. For the years ended December 31, 2020 and 2019, Adjusted Net Income as a percentage of revenue was 24.0% and 18.3%, 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 “—Non-GAAP Financial Measures.”

Comparison of the Years Ended December 31, 2019 and 2018

Revenues

	Year Ended December 31,		Comparison					
	2019	2018	Amount	%	Impact from Adoption of Topic 606	Remaining Difference	%	Constant Currency %
	As Reported Topic 606	As Reported Topic 605						
Revenues:								
Subscriptions	\$ 608,300	\$ 557,421	\$ 50,879	9.1 %	\$ (5,625)	\$ 56,504	10.1 %	12.9 %
Perpetual licenses	59,693	61,065	(1,372)	(2.2)%	7,174	(8,546)	(14.0)%	(11.1)%
Subscriptions and licenses	667,993	618,486	49,507	8.0 %	1,549	47,958	7.8 %	10.5 %
Services	68,661	73,224	(4,563)	(6.2)%	256	(4,819)	(6.6)%	(4.8)%
Total revenues	<u>\$ 736,654</u>	<u>\$ 691,710</u>	<u>\$ 44,944</u>	6.5 %	<u>\$ 1,805</u>	<u>\$ 43,139</u>	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. Our 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 subscription offering, 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 3 to the consolidated financial statements.

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					
	2019	2018	Amount	%	Impact from Adoption of Topic 606	Remaining Difference	%	Constant Currency %
	As Reported Topic 606	As Reported Topic 605						
Revenues by geographic area:								
Americas	\$ 356,331	\$ 328,749	\$ 27,582	8.4 %	\$ (4,603)	\$ 32,185	9.8 %	10.8 %
EMEA	236,602	231,486	5,116	2.2 %	1,348	3,768	1.6 %	6.0 %
APAC	143,721	131,475	12,246	9.3 %	5,060	7,186	5.5 %	9.1 %
Total revenues by geographic area	<u>\$ 736,654</u>	<u>\$ 691,710</u>	<u>\$ 44,944</u>	6.5 %	<u>\$ 1,805</u>	<u>\$ 43,139</u>	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, partially 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					
	2019	2018	Amount	%	Impact from Adoption of Topic 606	Remaining Difference	%	Constant Currency %
	As Reported Topic 606	As Reported Topic 605						
Cost of subscriptions and licenses	\$ 71,578	\$ 55,113	\$ 16,465	29.9 %	\$ 139	\$ 16,326	29.6 %	32.8 %
Cost of services	72,572	76,211	(3,639)	(4.8)%	—	(3,639)	(4.8)%	(2.2)%
Total cost of revenues	\$ 144,150	\$ 131,324	\$ 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 headcount-related costs of approximately \$6,000, an increase in amortization expense of approximately \$1,500 related to certain projects under our ACDP, 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 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					
	2019	2018	Amount	%	Impact from Adoption of Topic 606	Remaining Difference	%	Constant Currency %
	As Reported Topic 606	As Reported Topic 605						
Research and development	\$ 183,552	\$ 175,032	\$ 8,520	4.9 %	\$ —	\$ 8,520	4.9 %	7.2 %
Selling and marketing	155,294	160,635	(5,341)	(3.3)%	20	(5,361)	(3.3)%	(1.0)%
General and administrative	97,580	89,328	8,252	9.2 %	—	8,252	9.2 %	10.6 %
Amortization of purchased intangibles	14,213	14,000	213	1.5 %	—	213	1.5 %	4.4 %
Total operating expenses	\$ 450,639	\$ 438,995	\$ 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 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 headcount-related costs of approximately \$8,600, as well as approximately \$900 related to incremental accounting costs associated with the IPO.

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,	
	2019	2018
Interest expense	\$ (9,731)	\$ (9,607)
Interest income	1,532	842
Total interest expense, net	<u>\$ (8,199)</u>	<u>\$ (8,765)</u>

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

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,	
	2019	2018
Foreign exchange loss	\$ (5,591)	\$ (418)
Other income, net	34	654
Total other income (expense), net	<u>\$ (5,557)</u>	<u>\$ 236</u>

Other income (expense), net for the years ended December 31, 2019 and 2018 primarily consists of foreign exchange losses of \$5,591 and \$418, respectively. The foreign exchange 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 exchange losses of \$5,270.

(Provision) Benefit for Income Taxes

The income tax provisions for the years ended December 31, 2019 and 2018 were based on the effective income tax rates applicable for those periods. For the years ended December 31, 2019 and 2018, we recognized an aggregate consolidated income tax expense (benefit) of \$23,738 and \$(29,250), respectively, for U.S. domestic and foreign income taxes. 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 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 provision for income tax under Topic 605 would have been \$21,762 for the year ended December 31, 2019.

Loss from Investment Accounted for Using the Equity Method, Net of Tax

In September 2019, we and Topcon Positioning Systems, Inc. formed 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.

We have a 50% ownership in DCW and apply the equity method of accounting for our investment in DCW as we do not have the ability to exercise significant influence over operating and financial policies. Under the equity method, we recognized our initial investment at cost and subsequently adjust it by our proportional share of income or losses from the investment. For the year ended December 31, 2019, the loss from investment accounted for using the equity method, net of tax, related to the investment was \$1,275.

Net Income

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

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,		
	2019		2018
	As Reported Topic 606	As Reported Topic 605	As Reported Topic 605
Adjusted EBITDA	\$ 188,129	\$ 186,598	\$ 171,768
Adjusted Net Income	\$ 135,049	\$ 135,471	\$ 132,246

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 25.4% and 24.8% for the years ended December 31, 2019 and 2018, 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. 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 18.4% and 19.1% for the years ended December 31, 2019 and 2018, 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 “—Non-GAAP Financial Measures.”

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, 2020 and 2019, 94% and 98%, respectively, of our total cash and cash equivalents were located outside of the United States. Under the 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 stockholders, 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.

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,	
	2020	2019
Cash and cash equivalents:		
Held domestically	\$ 7,861	\$ 2,291
Held by foreign subsidiaries	114,145	118,810
Total cash and cash equivalents	<u>\$ 122,006</u>	<u>\$ 121,101</u>

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 sheets.

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

On September 2, 2020, we entered into the First Amendment to the Credit Facility, which provided the Term Loan of \$125,000 with a maturity of December 18, 2022 and included certain other amendments, including the addition of a mandatory prepayment provision requiring us to prepay borrowings under the Credit Facility in an aggregate amount equal to the net proceeds from any underwritten public offering by us, which prepayment shall be applied, first, to the Term Loan and, second, to any borrowings outstanding under the revolving facility under the Credit Facility without reducing the revolving commitments thereof. We used borrowings under the Term Loan and under the revolving facility under the Credit Facility to pay a special dividend of \$1.50 per share of our common stock (approximately \$389,300 in the aggregate) (the “Special Dividend”) and a regular quarterly dividend of \$0.03 per share of our common stock. The Special Dividend was declared by our board of directors on August 28, 2020. In November 2020, we used a portion of the net proceeds from the Follow-On Offering to repay the \$125,000 Term Loan. See Notes 10 and 13 to our consolidated financial statements.

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 \$150 and \$546 of letters of credit and surety bonds outstanding as of December 31, 2020 and 2019, respectively. As of December 31, 2020 and 2019, we had \$253,850 and \$265,704, respectively, available under the Credit Facility.

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 Credit Facility contains both affirmative and negative covenants, including maximum leverage ratios. As of December 31, 2020 and 2019, we were in compliance with all covenants in our debt agreements.

Interest rate risk associated with the Credit Facility is managed through an interest rate swap which 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 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*, in the consolidated statements of operations. As of December 31, 2020, we recorded a swap related asset at fair value of \$347.

The weighted average interest rate under the Credit Facility was 1.92%, 3.47%, and 3.28% for the years ended December 31, 2020, 2019, and 2018, respectively. There were no accrued interest or fees as of December 31, 2020 and 2019. Interest expense was \$6,878, \$8,971, and \$8,800 for the years ended December 31, 2020, 2019, and 2018, respectively.

For the year ended December 31, 2020, we incurred \$432 of debt issuance costs related to the Term Loan. In addition, interest expense includes amortization of deferred financing costs of \$553 for both the years ended December 31, 2020 and 2019 and \$552 for the year ended December 31, 2018.

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.

Comparison of the Years Ended December 31, 2020 and 2019

The following table summarizes our cash flow activities for the years ended December 31, 2020 and 2019:

	Year Ended December 31,	
	2020	2019
Net Cash Provided By (Used In):		
Operating activities	\$ 258,340	\$ 170,773
Investing activities	(117,333)	(53,693)
Financing activities	(136,511)	(77,048)

Operating activities

Net cash provided by operating activities was \$258,340 for the year ended December 31, 2020. Compared to the prior year comparative period, net cash from operating activities was higher by \$87,567 due to an increase in net income of \$23,425, a net increase in non-cash adjustments of \$11,254, and an increase in net cash flows from the change in operating assets and liabilities of \$52,888. The net increase in non-cash adjustments primarily related to a \$3,957 increase in depreciation and amortization, an increase of \$15,514 in deferred income taxes, an increase of \$24,023 in stock-based compensation expense, partially offset by an increase of \$29,813 related to foreign currency remeasurement gains. The net increase in cash flows from changes in operating assets and liabilities of \$52,888 was due to increased cash flows related to the collection of accounts receivable of \$33,540, an increase from the change in prepaid and other assets of \$12,373, an increase from the change in accounts payable, accruals and other liabilities of \$5,776, and an increase from the change in income taxes payable of \$1,496, partially offset by a decrease from the change in deferred revenues of \$297.

For the year ended December 31, 2019, net cash provided by operating activities was \$170,773 due to net income of \$103,096 increased by \$53,199 of non-cash adjustments and \$14,478 from changes in operating assets and liabilities.

Investing activities

Net cash used in investing activities was \$117,333 for the year ended December 31, 2020, primarily due to \$15,496 related to purchases of property and equipment and investment in capitalized software and \$93,032 in acquisition related payments, net of cash acquired.

For the year ended December 31, 2019, net cash used in investing activities was \$53,693, 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

Net cash used in financing activities was \$136,511 for the year ended December 31, 2020. Compared to the prior year comparative period, net cash used in financing activities increased by \$59,463, primarily due to an increase in payments for dividends of \$397,657, partially offset by an increase in net borrowings of \$37,250 under the Credit Facility, \$294,429 of proceeds from our Follow-On Offering, net of expenses, and a decrease in the payment of acquisition debt and other consideration of \$7,604.

For the year ended December 31, 2019, net cash used in financing activities was \$77,048, primarily due to net payments under the Credit Facility of \$25,000, payment of a contingent acquisition liability of \$11,029, payments of dividends of \$24,989, and net payments for shares acquired of \$19,656.

Subsequent Events After December 31, 2020

Bank Credit Facility — On January 25, 2021, we entered into an amended and restated credit agreement, which matures on November 15, 2025 (the “New Credit Facility”). Upon entry into the New Credit Facility, we obtained a \$850,000 senior secured revolving facility and refinanced all indebtedness outstanding under our Credit Facility. As of February 28, 2021, the Company had \$849,850 available under the Credit Facility.

Convertible Debt — On January 26, 2021, we completed an offering of \$690,000 of 0.125% convertible senior notes due 2026. Interest will accrue from January 26, 2021 and will be payable twice a year with the first payment due on July 15, 2021. We used \$25,530 of the net proceeds from the sale of the 2026 Notes to pay the cost of the capped call transactions and approximately \$250,500 to repay outstanding indebtedness under the Credit Facility and to pay related fees and expenses. We intend to use the remainder of the net proceeds from the sale of the 2026 Notes for general corporate purposes, which may include funding future acquisitions. We may apply all or a portion of the net proceeds for the acquisition of businesses, software solutions, and technologies that we believe are complementary to our own, although we have no agreements, commitments, or understandings with respect to any specific material acquisition at this time. We have not allocated any specific portion of the net proceeds to any particular purpose and our management will have the discretion to allocate the proceeds as it determines. For further detail, see Note 25 to our consolidated financial statements.

Acquisition — In February 2021, we completed the acquisition of E7. The acquisition is not expected to be material to the our consolidated statements of operations and financial position.

Contractual Obligations and Other Commitments:

The following table represents our contractual commitments as of December 31, 2020. 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⁾	\$ 246,000	\$ —	\$ 246,000	\$ —	\$ —
Interest on long-term debt ⁽¹⁾	20,086	5,890	6,902	2,334	4,960
Operating lease obligations ⁽²⁾	50,552	17,666	22,660	8,243	1,983
Purchase obligations ⁽³⁾	82,810	37,875	44,935	—	—
Deferred compensation obligations ⁽⁴⁾	2,591	169	394	496	1,532
Contingent obligations ⁽⁵⁾	4,299	2,884	1,415	—	—
Non-contingent obligations ⁽⁶⁾	2,459	685	1,774	—	—
Total contractual obligations	\$ 408,797	\$ 65,169	\$ 324,080	\$ 11,073	\$ 8,475

(1) Long-term debt represents the outstanding balance of \$246,000 related to the Credit Facility with a weighted average interest rate of 1.92%. Interest on long-term debt includes our interest rate swap which fixed our LIBOR borrowing rate at 0.73% on a notional amount of \$200,000. As our debt has variable interest rates, we projected future interest payments based on market interest rates and the balance outstanding as of December 31, 2020.

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

(3) Purchase obligations include the non-cancelable future cash purchase commitment for services related to the provisioning of our hosted software solutions.

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

(5) Contingent consideration from acquisitions.

(6) 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 in Part II, Item 8 of this Annual Report on Form 10-K.

An accounting policy is deemed to be critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made, if different estimates reasonably could have been used, or if changes in the estimate that are reasonably possible could materially impact the financial statements. 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* in the consolidated balance sheet. 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 is recognized upfront upon delivery of the software license. The comparative information for the year ended December 31, 2018 has not been adjusted and continues to be reported under Topic 605. See Note 3 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, hosting, 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 hosting, and support, hosting, 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.

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 entitles our users to 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, we 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 Topics 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. Portfolio balancing exchange rights are included in *Deferred revenues* in the consolidated balance sheets.

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.

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 our assets and liabilities, and the existence of significant unrecognized intangible assets. Based upon our most recent annual impairment assessment completed as of October 1, 2020, 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 for the years ended December 31, 2020, 2019, and 2018.

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 25 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 sheet. 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, automobiles, 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 expected losses 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 which considers historical write-off and recovery experience, 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 and take into account reasonable and supportable forecasts of future conditions 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 adjust 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 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) benefit for income taxes* in the 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) benefit 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 and is recognized ratably over the requisite service period, which is generally the vesting period. The fair value of stock option awards is determined using the Black-Scholes option pricing model. For all other stock-based arrangements, the stock-based compensation expense is based on the share price at the grant date.

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 the fair value of our common stock, expected volatility, expected dividend yield, risk-free interest rate, and expected term. The expected stock price volatility for our common stock is estimated by using 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 dividend yield is calculated by dividing our annual dividend, based on the most recent quarterly dividend rate, by our common stock price (as described below) on the grant date. 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. The expected term is based on the simplified method, which represents the average period from vesting to the expiration of the award.

Fair value of common stock. We have historically been a privately held company with no active public market of our common stock. We were required to estimate the fair value of the common stock underlying our stock-based awards. The fair value of the common stock underlying our stock-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 IPO, 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.

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 in Part II, Item 8 of this Annual Report on Form 10-K.

Item 7A. 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, 2020, approximately 57% of our revenues are derived from outside of the United States and approximately 43% of our revenues are denominated in foreign currencies. In 2020, 57%, 12%, 7%, and 24% 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 2020 annual operating income by approximately \$7.7 million.

Interest rate risk. We had cash and cash equivalents of \$122.0 million and \$121.1 million as of December 31, 2020 and 2019, 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 our 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 \$200.0 million 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.

Item 8. Financial Statements and Supplementary Data

The information required by this item is included at the end of this report beginning on page F-1.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures***Evaluation of Effectiveness of Disclosure Controls and Procedures***

Our management maintains disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”) that are designed to provide reasonable assurance that information required to be disclosed in our reports filed or submitted under the Exchange Act is processed, recorded, summarized, and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), as appropriate, to allow for timely decisions regarding required disclosure.

We evaluated, under the supervision and with the participation of management, including our principal executive and principal financial officers, the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this report. Based on this evaluation, our principal executive officer and principal financial officer concluded that, as of December 31, 2020, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s Annual Report on Internal Control over Financial Reporting

This Annual Report on Form 10-K does not include a report of management’s assessment regarding internal control over financial reporting or an attestation report of our registered public accounting firm due to a transition period established by rules of the SEC for newly public companies.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting identified in management’s evaluation pursuant to Rules 13a or 15d of the Exchange Act that occurred during the quarter ended December 31, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. We have not experienced any material impact in our internal control over financial reporting despite our employees working remotely due to the COVID-19 pandemic. We are continually monitoring and assessing the COVID-19 pandemic on our internal controls including changes to their design and operating effectiveness.

Inherent Limitations on Effectiveness of Controls

It should be noted that any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system will be met. In addition, the design of any control system is based in part upon certain assumptions about the likelihood of future events. Because of these and other inherent limitations of control systems, there is only reasonable assurance that our controls will succeed in achieving their goals under all potential future conditions.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference to our definitive proxy statement for our 2021 Annual Meeting of Stockholders (the “2021 Proxy Statement”), which will be filed with the SEC not later than 120 days subsequent to December 31, 2020.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following sets forth certain information as of March 2, 2021, regarding our executive officers.

<u>Name</u>	<u>Age</u>	<u>Position</u>
Gregory S. Bentley	65	Chief Executive Officer and President
Keith A. Bentley	62	Chief Technology Officer
Raymond B. Bentley	60	Executive Vice President
David J. Hollister	55	Chief Financial Officer and Chief Operations Advancement Officer
David R. Shaman	55	Chief Legal Officer and Secretary

Gregory S. Bentley has served as President 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.

Keith A. Bentley co-founded our Company. 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.

Raymond B. Bentley 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.

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.

Item 11. Executive Compensation

The information required by this item is incorporated by reference to our 2021 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2020.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference to our 2021 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2020.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to our 2021 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2020.

Item 14. Principal Accountant Fees and Services

The information required by this item is incorporated by reference to our 2021 Proxy Statement, which will be filed with the SEC not later than 120 days subsequent to December 31, 2020.

PART IV

Item 15. Exhibit and Financial Statement Schedules

(a) The following documents are filed as part of this report:

- | | Page |
|---|---------------------|
| 1. Financial Statements: | |
| Report of Independent Registered Public Accounting Firm | F-1 |
| Consolidated Balance Sheets as of December 31, 2020 and 2019 | F-2 |
| Consolidated Statements of Operations for the years ended December 31, 2020, 2019, and 2018 | F-3 |
| Consolidated Statements of Comprehensive Income for the years ended December 31, 2020, 2019, and 2018 | F-4 |
| Consolidated Statements of Stockholders' Equity for the years ended December 31, 2020, 2019, and 2018 | F-5 |
| Consolidated Statements of Cash Flows for the years ended December 31, 2020, 2019, and 2018 | F-6 |
| Notes to Consolidated Financial Statements | F-7 |
| 2. Financial Statement Schedules: | |
| Financial statement schedules have been omitted since they are either not required, not applicable, or the information is included in the consolidated financial statements or notes thereto. | |
| 3. Exhibits: | |

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation of Bentley Systems, Incorporated (filed as Exhibit 3.1 to our Current Report on Form 8-K filed on September 25, 2020 (File No. 001-39548) and incorporated herein by reference)
3.2	Amended and Restated By-Laws of Bentley Systems, Incorporated (filed as Exhibit 3.2 to our Current Report on Form 8-K filed on September 25, 2020 (File No. 001-39548) and incorporated herein by reference)
4.1	Form of Registrant's Class B common stock certificate of Bentley Systems, Incorporated (filed as Exhibit 4.1 to our Registration Statement on Form S-1/A filed on September 18, 2020 (File No. 333-248246) and incorporated herein by reference)
4.2	Indenture, dated as of January 26, 2021, between Bentley Systems, Incorporated and Wilmington Trust, National Association, as trustee (filed as Exhibit 4.1 to our Current Report on Form 8-K filed on January 26, 2021 (File No. 001-39548) and incorporated herein by reference)
4.3	Form of 0.125% Convertible Senior Note due 2026 (included as Exhibit A in Exhibit 4.1 to our Current Report on Form 8-K filed on January 26, 2021 (File No. 001-39548) and incorporated herein by reference)
4.4*	Description of Securities
10.1	Form of Capped Call Confirmation (filed as Exhibit 10.1 to our Current Report on Form 8-K filed on January 26, 2021 (File No. 001-39548) and incorporated herein by reference)
10.2	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 (filed as Exhibit 10.1 to our Registration Statement on Form S-1 filed on August 21, 2020 (File No. 333-248246) and incorporated herein by reference)
10.3	First Amendment to Amended and Restated Credit Agreement, dated as of September 2, 2020 (filed as Exhibit 10.10 to our Registration Statement on Form S-1/A filed on September 8, 2020 (File No. 333-248246) and incorporated herein by reference)

Exhibit Number	Description
10.4	Second Amendment to Amended and Restated Credit Agreement, dated as of January 25, 2021 (filed as Exhibit 10.2 to our Current Report on Form 8-K filed on January 26, 2021 (File No. 001-39548) and incorporated herein by reference)
10.5†	Bentley Systems, Incorporated 2015 Equity Incentive Plan, as amended and restated effective as of May 29, 2018 (filed as Exhibit 10.6 to our Registration Statement on Form S-1 filed on August 21, 2020 (File No. 333-248246) and incorporated herein by reference)
10.6†	Bentley Systems, Incorporated 2020 Omnibus Incentive Plan (filed as Exhibit 10.1 to our Current Report on Form 8-K filed on September 25, 2020 (File No. 001-39548) and incorporated herein by reference)
10.7†	Bentley Systems, Incorporated Global Employee Stock Purchase Plan (filed as Exhibit 10.2 to our Current Report on Form 8-K filed on September 25, 2020 (File No. 001-39548) and incorporated herein by reference)
10.8†	Bentley Systems, Incorporated Nonqualified Deferred Compensation Plan, as amended and restated effective as of September 22, 2020 (filed as Exhibit 10.3 to our Current Report on Form 8-K filed on September 25, 2020 (File No. 001-39548) and incorporated herein by reference)
10.9†	Bentley Systems, Incorporated Nonqualified Deferred Compensation Plan for Non-Employee Directors, as amended and restated effective as of January 1, 2015 (filed as Exhibit 10.7 to our Registration Statement on Form S-1/A filed on September 8, 2020 (File No. 333-248246) and incorporated herein by reference)
10.10†	Bentley Systems, Incorporated Bonus Pool Plan, as amended and restated effective as of September 22, 2020 (filed as Exhibit 10.4 to our Current Report on Form 8-K filed on September 25, 2020 (File No. 001-39548) and incorporated herein by reference)
10.11	Common Stock Purchase Agreement, by and among Bentley Systems, Incorporated, Siemens AG, and the persons listed as “Key Holders” therein, dated September 23, 2016, as amended on October 28, 2016, and April 23, 2018 (filed as Exhibit 10.2 to our Registration Statement on Form S-1 filed on August 21, 2020 (File No. 333-248246) and incorporated herein by reference)
10.12	Registration Rights Agreement, dated as of January 24, 2017, by and between Bentley Systems, Incorporated and Siemens Corporation (filed as Exhibit 10.3 to our Registration Statement on Form S-1 filed on August 21, 2020 (File No. 333-248246) and incorporated herein by reference)
21.1*	Subsidiaries of the Registrant
23.1*	Consent of Independent Registered Public Accounting Firm
31.1*	Certification of CEO pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
31.2*	Certification of CFO pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
32.1*	Certification of CEO and CFO Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	Inline XBRL Instance Document—the instance document does not appear in the Interactive Data File as its XBRL tags are embedded within the Inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase
104	Cover page formatted as Inline XBRL and contained in Exhibit 101

† Management contract or compensatory plan or arrangement.

* Filed or furnished herewith. The certification attached as Exhibit 32.1 that accompanies this Annual Report on Form 10-K is not deemed filed with the U.S. Securities and Exchange Commission and is not to be incorporated by reference into any filing of Bentley Systems, Incorporated under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

(b) Exhibits:

We hereby file the exhibits listed in the attached Exhibit Index.

(c) Financial Statement Schedules:

None.

Item 16. Form 10-K Summary

None.

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, 2020 and 2019, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, 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, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

Changes in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2020 due to the adoption of Topic 842, *Leases*.

As discussed in Note 3 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 Topic 606, *Revenue from Contracts with Customers*, and Topic 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 2, 2021

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES
Consolidated Balance Sheets
(in thousands, except share and per share data)

	December 31,	
	2020	2019
Assets		
Current assets:		
Cash and cash equivalents	\$ 122,006	\$ 121,101
Accounts receivable	195,782	211,775
Allowance for doubtful accounts	(5,759)	(7,274)
Prepaid income taxes	3,535	4,543
Prepaid and other current assets	24,694	23,413
Total current assets	<u>340,258</u>	<u>353,558</u>
Property and equipment, net	28,414	29,632
Operating lease right-of-use assets	46,128	—
Intangible assets, net	45,627	46,313
Goodwill	581,174	480,065
Investments	5,691	1,725
Deferred income taxes	39,224	51,068
Other assets	39,519	32,238
Total assets	<u>\$ 1,126,035</u>	<u>\$ 994,599</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 16,492	\$ 17,669
Accruals and other current liabilities	226,793	167,517
Deferred revenues	202,294	204,991
Operating lease liabilities	16,610	—
Income taxes payable	3,366	2,236
Total current liabilities	<u>465,555</u>	<u>392,413</u>
Long-term debt	246,000	233,750
Long-term operating lease liabilities	31,767	—
Deferred revenues	7,020	8,154
Deferred income taxes	10,849	8,260
Income taxes payable	7,883	8,140
Other liabilities	15,362	9,263
Total liabilities	<u>784,436</u>	<u>659,980</u>
Commitments and contingencies (Note 18)		
Stockholders' equity:		
Preferred stock, \$0.01 par value, authorized 100,000,000 shares; none issued or outstanding as of December 31, 2020 and 2019	—	—
Class A Common Stock, \$0.01 par value, authorized 100,000,000 shares; issued and outstanding 11,601,757 shares as of December 31, 2020 and 2019, and Class B Common Stock, \$0.01 par value, authorized 1,800,000,000 shares; issued and outstanding 260,552,747 and 243,241,192 shares as of December 31, 2020 and 2019, respectively	2,722	2,548
Additional paid-in capital	741,113	408,667
Accumulated other comprehensive loss	(26,233)	(23,927)
Accumulated deficit	(376,003)	(52,669)
Total stockholders' equity	<u>341,599</u>	<u>334,619</u>
Total liabilities and stockholders' equity	<u>\$ 1,126,035</u>	<u>\$ 994,599</u>

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,		
	2020	2019	2018
Revenues:			
Subscriptions	\$ 679,273	\$ 608,300	\$ 557,421
Perpetual licenses	57,382	59,693	61,065
Subscriptions and licenses	736,655	667,993	618,486
Services	64,889	68,661	73,224
Total revenues	801,544	736,654	691,710
Cost of revenues:			
Cost of subscriptions and licenses	95,803	71,578	55,113
Cost of services	71,352	72,572	76,211
Total cost of revenues	167,155	144,150	131,324
Gross profit	634,389	592,504	560,386
Operating expenses:			
Research and development	185,515	183,552	175,032
Selling and marketing	143,791	155,294	160,635
General and administrative	113,451	97,580	89,328
Amortization of purchased intangibles	15,352	14,213	14,000
Expenses associated with initial public offering	26,130	—	—
Total operating expenses	484,239	450,639	438,995
Income from operations	150,150	141,865	121,391
Interest expense, net	(7,476)	(8,199)	(8,765)
Other income (expense), net	24,946	(5,557)	236
Income before income taxes	167,620	128,109	112,862
(Provision) benefit for income taxes	(38,625)	(23,738)	29,250
Loss from investment accounted for using the equity method, net of tax	(2,474)	(1,275)	—
Net income	126,521	103,096	142,112
Less: Net income attributable to participating securities	(234)	(8)	(4)
Net income attributable to Class A and Class B common stockholders	\$ 126,287	\$ 103,088	\$ 142,108
Per share information:			
Net income per share, basic	\$ 0.44	\$ 0.36	\$ 0.50
Net income per share, diluted	\$ 0.42	\$ 0.35	\$ 0.49
Weighted average shares outstanding, basic	289,863,272	284,625,642	285,805,096
Weighted average shares outstanding, diluted	299,371,129	293,796,707	292,624,496

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income
(in thousands)

	Year Ended December 31,		
	2020	2019	2018
Net income	\$ 126,521	\$ 103,096	\$ 142,112
Other comprehensive income (loss), net of taxes:			
Foreign currency translation adjustments	(2,311)	5,959	(11,020)
Actuarial gain (loss) on retirement plan, net of tax effect of \$(1), \$203, and \$(62), respectively	5	(472)	146
Total other comprehensive income (loss), net of taxes	(2,306)	5,487	(10,874)
Comprehensive income	\$ 124,215	\$ 108,583	\$ 131,238

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES
Consolidated Statements of Stockholders' Equity
(in thousands, except 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, December 31, 2017	247,465,176	\$ 2,474	\$ 377,809	\$ (18,540)	\$ (309,576)	\$ 52,167
Net income	—	—	—	—	142,112	142,112
Other comprehensive loss	—	—	—	(10,874)	—	(10,874)
Dividends declared (Note 13)	—	—	—	—	(20,005)	(20,005)
Profit-sharing plan shares, net	(465,979)	(5)	—	—	(3,382)	(3,387)
Shares issued in connection with deferred compensation plan, net	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, 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	—	—	—	5,487	—	5,487
Dividends declared (Note 13)	—	—	—	—	(25,390)	(25,390)
Profit-sharing plan shares, net	(318,203)	(3)	—	—	(2,414)	(2,417)
Shares issued in connection with deferred compensation plan, net	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, December 31, 2019	254,842,949	2,548	408,667	(23,927)	(52,669)	334,619
Net income	—	—	—	—	126,521	126,521
Other comprehensive loss	—	—	—	(2,306)	—	(2,306)
Class B Common Stock follow-on offering, net of expenses of \$12,898 (Note 13)	9,603,965	96	294,333	—	—	294,429
Dividends declared (Note 13)	—	—	—	—	(424,018)	(424,018)
Profit-sharing plan shares, net	(549,834)	(5)	—	—	(6,965)	(6,970)
Shares issued in connection with deferred compensation plan, net	3,081,607	31	—	—	(4,656)	(4,625)
Deferred compensation plan voluntary contributions	—	—	3,530	—	—	3,530
Payment of shareholder Put and Call rights	(128,007)	(1)	—	—	(1,453)	(1,454)
Common Stock Purchase Agreement, net	—	—	—	—	(57)	(57)
Stock option exercises, net	4,060,839	41	9,070	—	(4,755)	4,356
Shares issued for stock grants, net	21,956	—	319	—	—	319
Stock-based compensation expense	—	—	25,194	—	—	25,194
Shares related to restricted stock, net	1,221,029	12	—	—	(7,951)	(7,939)
Balance, December 31, 2020	272,154,504	\$ 2,722	\$ 741,113	\$ (26,233)	\$ (376,003)	\$ 341,599

See accompanying notes to consolidated financial statements.

BENTLEY SYSTEMS, INCORPORATED AND SUBSIDIARIES
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
	2020	2019	2018
Cash flows from operating activities:			
Net income	\$ 126,521	\$ 103,096	\$ 142,112
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	36,117	32,160	29,200
Bad debt (recovery) allowance	(1,000)	862	2,393
Deferred income taxes	16,246	732	(60,060)
Deferred compensation plan activity	3,706	3,994	4,323
Stock-based compensation expense	32,114	8,091	7,882
Amortization and write-off of deferred debt issuance costs	985	553	552
Change in fair value of derivative	(347)	159	487
Change in fair value of contingent consideration	(1,340)	62	272
Foreign currency remeasurement (gain) loss	(24,502)	5,311	(1,645)
Loss from investment accounted for using the equity method, net of tax	2,474	1,275	—
Changes in assets and liabilities, net of effect from acquisitions:			
Accounts receivable	12,388	(21,152)	(41,787)
Prepaid and other assets	11,705	(668)	2,831
Accounts payable, accruals and other liabilities	47,656	41,880	37,249
Deferred revenues	(565)	(268)	21,247
Income taxes payable	(3,818)	(5,314)	16,409
Net cash provided by operating activities	<u>258,340</u>	<u>170,773</u>	<u>161,465</u>
Cash flows from investing activities:			
Purchases of property and equipment and investment in capitalized software	(15,496)	(15,804)	(18,616)
Capitalization of costs to translate software products into foreign languages	(951)	(835)	(877)
Acquisitions, net of cash acquired of \$5,266, \$2,523, and \$7,774, respectively	(93,032)	(34,054)	(135,264)
Other investing activities	(7,854)	(3,000)	—
Net cash used in investing activities	<u>(117,333)</u>	<u>(53,693)</u>	<u>(154,757)</u>
Cash flows from financing activities:			
Proceeds from credit facilities	550,875	191,250	148,250
Payments of credit facilities	(538,625)	(216,250)	(159,500)
Proceeds from term loan	125,000	—	—
Repayment of term loan	(125,000)	—	—
Payments of debt issuance costs	(432)	—	—
Payments of financing leases	(189)	—	—
Payments of acquisition debt and other consideration	(3,425)	(11,029)	9
Proceeds from Class B Common Stock follow-on offering, net of underwriters' discounts and commissions	295,802	—	—
Payments of Class B Common Stock follow-on offering expenses	(1,373)	—	—
Payments of dividends	(422,646)	(24,989)	(20,059)
Payments for shares acquired including shares withheld for taxes	(83,975)	(24,166)	(46,451)
Proceeds from Common Stock Purchase Agreement	58,349	4,510	16,220
Proceeds from exercise of stock options	9,128	3,626	2,732
Net cash used in financing activities	<u>(136,511)</u>	<u>(77,048)</u>	<u>(58,799)</u>
Effect of exchange rate changes on cash and cash equivalents	(3,591)	(114)	(1,193)
Increase (decrease) in cash and cash equivalents	905	39,918	(53,284)
Cash and cash equivalents, beginning of year	121,101	81,183	134,467
Cash and cash equivalents, end of year	<u>\$ 122,006</u>	<u>\$ 121,101</u>	<u>\$ 81,183</u>
Supplemental information:			
Cash paid for income taxes	\$ 28,986	\$ 27,907	\$ 25,782
Income tax refunds	3,863	1,752	7,285
Interest paid	8,012	9,221	8,863
Non-cash contingent acquisition consideration	2,380	4,498	13,456
Non-cash deferred, non-contingent consideration, net	1,416	—	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.

Initial Public Offering — On September 25, 2020, the Company completed its initial public offering (“IPO”). The selling stockholders sold 12,360,991 shares of Class B Common Stock at a public offering price of \$22.00 per share. The Company did not sell any shares in the IPO and did not receive any of the proceeds from the sale of the Class B Common Stock sold by the selling stockholders (see Notes 13 and 15). For the year ended December 31, 2020, the Company recorded \$26,130 in *Expenses associated with initial public offering* in the consolidated statement of operations. These expenses included certain non-recurring costs relating to the Company’s IPO, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the selling stockholders, professional fees, and other expenses.

Follow-On Public Offering — On November 17, 2020, the Company completed its follow-on public offering of 11,500,000 shares of Class B Common Stock at a public offering price of \$32.00 per share (the “Follow-On Offering”). The Company sold 9,603,965 shares of Class B Common Stock (inclusive of 1,500,000 shares sold upon the exercise by the underwriters of their option to purchase additional shares of the Company’s Class B Common Stock). The selling stockholders sold 1,896,035 shares of Class B Common Stock. The Company received net proceeds of \$294,429 after deducting expenses of \$12,898. The Company did not receive any of the proceeds from the sale of the Class B Common Stock sold by the selling stockholders. Expenses associated with the Follow-On Offering included certain non-recurring costs, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the Company, professional fees, and other expenses. The Company agreed to pay certain expenses in connection with the Follow-On Offering on behalf of the selling stockholders and made an accounting policy election to offset these expenses against the Follow-On Offering proceeds (see Note 13).

Special Dividend — On August 28, 2020, the Company’s board of directors declared a special dividend of \$1.50 per share of the Company’s common stock (\$392,489 in the aggregate) (the “Special Dividend”), payable to all stockholders of record as of August 31, 2020, including dividends which accrue on certain unvested restricted stock and restricted stock units (“RSUs”). The Company used its bank credit facility to pay the Special Dividend (see Note 10). In connection with the Special Dividend declaration, an in kind adjustment was made to phantom shares issuable pursuant to the amended and restated Bentley Systems, Incorporated Nonqualified Deferred Compensation Plan (the “DCP”) (see Note 12) and the exercise price of all outstanding stock options at that time were reduced by \$1.50, but not lower than \$0.01 (see Note 15).

Stock Dividend — On May 1, 2018, the Company paid a previously declared stock dividend (the “Stock Dividend”) to all holders of the Company’s common stock as of April 30, 2018. Under the terms of the Stock 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 Stock 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 Stock 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 Stock 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.

Risks and Uncertainties — COVID-19 Pandemic — 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, the Company implemented a number of initiatives to ensure the safety of its colleagues and enable them to move to a work from home environment seamlessly and continue working effectively. The Company’s business model is such that there was minimal disruption to the Company’s ability to deliver its solutions to accounts, and the Company believes it did not have any significant loss of productivity during this transition. The Company has also taken measures to reduce selected operating expenses, including various costs associated with travel and facilities.

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. 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.

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 consolidated 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 (prior to the Company’s IPO) 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.

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. As of December 31, 2020 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”). 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.”

For a detailed description of the Company’s revenue recognition accounting policies and for the qualitative and quantitative discussion regarding the impact of Topic 606 adoption, see Note 3.

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 subscription offering. 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 25 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.

Goodwill and Other Intangible Assets — 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.

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, 2020, 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 for the years ended December 31, 2020, 2019, and 2018.

Long-Lived Assets — The Company evaluates the recoverability of long-lived assets, such as property and equipment, operating lease right-of-use assets, 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 for the years ended December 31, 2020, 2019, and 2018.

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.

The Company capitalizes certain development costs related to certain projects under its Accelerated Commercial Development Program ("ACDP") (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). For the years ended December 31, 2020, 2019, and 2018, total costs capitalized under the ACDP were \$7,809, \$6,060, and \$5,735, respectively. Additionally, for the years ended December 31, 2020, 2019, and 2018, total ACDP related amortization recorded in *Costs of subscriptions and licenses* in the consolidated statements of operations was \$4,699, \$3,516, and \$2,052, respectively.

Certain costs related to the creation of foreign language translations are capitalized and amortized over the economic life of the software. For the years ended December 31, 2020, 2019, and 2018, total costs capitalized related to the creation of foreign language translations were \$951, \$835, and \$877, respectively. Additionally, for the years ended December 31, 2020, 2019, and 2018, amortization related to the creation of foreign language translations recorded in *Costs of subscriptions and licenses* in the consolidated statements of operations was \$919, \$823, and \$1,008, respectively.

Advertising Expense — The Company expenses advertising costs as incurred. Advertising expense of \$1,726, \$1,579, and \$2,378 is included in *Selling and marketing* in the consolidated statements of operations for the years ended December 31, 2020, 2019, and 2018, 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 percent likely of being realized upon ultimate settlement. Interest expense and penalties are included in *(Provision) benefit for income taxes* in the consolidated statements of operations.

U.S. Tax Reform — On December 22, 2017, the U.S. Tax Cuts and Jobs Act (the “JOBS 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 completed its accounting for the effects of the JOBS Act in 2018 and has included those effects in *(Provision) benefit 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 U.S. and its wholly-owned branches and subsidiaries internationally.

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* in the consolidated statements of operations. 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 for the years ended December 31, 2020, 2019, or 2018.

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.

Investments — The Company applies the cost method of accounting for its investment in which it does not have the ability to exercise significant influence over operating and financial policies. Under the cost method, the Company records the investment based on original cost less impairments, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same investee. The Company's share of income or loss of such companies is not included in the Company's consolidated statements of operations. The Company applies the equity method of accounting for its investment in which it does have the ability to exercise significant influence over operating and financial policies. Under the equity method, the Company recognizes its initial investment at cost and updates the carrying value of its investment by its proportional share of income or losses from the investment. In addition, the Company decreases the carrying value by any dividends received from the investee. The Company does not otherwise adjust the carrying value to reflect changes to the fair market value of the investment.

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 expected losses during the accounts receivable collection process. The allowance for doubtful accounts is presented separately in the consolidated balance sheets 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 which considers historical write-off and recovery experience, 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 and takes into account reasonable and supportable forecasts of future conditions 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.

Activity related to the Company's allowance for doubtful accounts was as follows:

	Year Ended December 31,	
	2020	2019
Balance, beginning of year	\$ 7,274	\$ 7,611
Bad debt (recovery) allowance	(1,000)	862
Write-offs	(812)	(1,314)
Foreign currency translation adjustments	297	115
Balance, end of year	<u>\$ 5,759</u>	<u>\$ 7,274</u>

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 and is recognized ratably over the requisite service period, which is generally the vesting period. The fair value of stock option awards is determined using the Black-Scholes option pricing model. For all other equity-based arrangements, the stock-based compensation expense is based on the share price at the grant date (see Note 15).

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 statement 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.

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.

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.

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 consolidated balance sheet. 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, automobiles, and office equipment. The Company's finance lease is included in *Property and equipment, net, Accruals and other current liabilities, and Other liabilities* in the consolidated balance sheet.

Note 2: Recent Accounting Pronouncements

In March 2020, the Financial Accounting Standards Board (“FASB”) issued ASU No. 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting* (“ASU 2020-04”), which provides optional expedients and exceptions for applying U.S. GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. ASU 2020-04 applies only to contracts, hedging relationships, and other transactions that reference the London Interbank Offered Rate (“LIBOR”) or another reference rate expected to be discontinued because of reference rate reform between March 12, 2020 and December 31, 2022. The expedients and exceptions provided by ASU 2020-04 do not apply to contract modifications made and hedging relationships entered into or evaluated after December 31, 2022, except for hedging relationships existing as of December 31, 2022, that an entity has elected certain optional expedients for and that are retained through the end of the hedging relationship. The Company had no transactions that were impacted by ASU 2020-04 during the year ended December 31, 2020.

In August 2018, the 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* (“ASU 2018-15”), 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 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 Topic 842, 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, *Targeted Improvements*, and 2018-20, *Narrow-Scope Improvements for Lessors*. These ASUs do not change the core principle of the guidance in Topic 842. 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 No. 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("Topic 326"). Previous guidance required 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. The Company adopted Topic 326 as of January 1, 2020 using the modified retrospective method of adoption. The adoption of the standard did not have a material 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"). 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 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 Taxes* ("ASU 2019-12"), 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. 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 August 2020, the FASB issued ASU No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("ASU 2020-06"), which simplifies the accounting for convertible instruments by reducing the number of accounting models available for convertible debt instruments. This guidance also eliminates the treasury stock method to calculate diluted earnings per share for convertible instruments and requires the use of the if-converted method. The Company early adopted the ASU effective January 1, 2021 using the modified retrospective method of adoption. The Company will apply this ASU to the convertible debt transaction entered into in January 2021 (see Note 25).

Note 3: Revenue from Contracts with Customers

On January 1, 2019, the Company adopted Topic 606, which superseded 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* in the consolidated balance sheet 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 for the year ended December 31, 2018 has not been adjusted and continues to be reported under Topic 605. Refer below for the qualitative and quantitative discussion regarding the impact of Topic 606 adoption.

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 is 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.

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 costs under 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* in the consolidated balance sheet as of January 1, 2019. The comparative information for the year ended December 31, 2018 has not been adjusted and continues to be reported as incurred.

Quantitative Effect of Topics 606 and 340-40 Adoption

The following tables compare the reported consolidated balance sheet and statement of operations, as of and for the year ended December 31, 2019, to the amounts had Topic 605 been in effect. Adoption of the standards had no impact to net cash provided by or used in operating, investing, or financing activities on the Company's consolidated statement of cash flows for the year ended December 31, 2019.

	December 31, 2019		
	As Reported Topic 606	Impact from the Adoption of Topics 606 and 340-40	As Adjusted Topic 605
Assets			
Current assets:			
Cash and cash equivalents	\$ 121,101	\$ —	\$ 121,101
Accounts receivable	211,775	(233)	211,542
Allowance for doubtful accounts	(7,274)	—	(7,274)
Prepaid income taxes	4,543	2,189	6,732
Prepaid and other current assets ⁽¹⁾	23,413	(3,333)	20,080
Total current assets	353,558	(1,377)	352,181
Property and equipment, net	29,632	—	29,632
Intangible assets, net	46,313	—	46,313
Goodwill	480,065	—	480,065
Investments	1,725	—	1,725
Deferred income taxes	51,068	21,543	72,611
Other assets ⁽¹⁾	32,238	(5,721)	26,517
Total assets	<u>\$ 994,599</u>	<u>\$ 14,445</u>	<u>\$ 1,009,044</u>
Liabilities and Stockholders' Equity			
Current liabilities:			
Accounts payable	\$ 17,669	\$ —	\$ 17,669
Accruals and other current liabilities	167,517	(292)	167,225
Deferred revenues	204,991	77,079	282,070
Income taxes payable	2,236	(1,206)	1,030
Total current liabilities	392,413	75,581	467,994
Long-term debt	233,750	—	233,750
Deferred revenues	8,154	47,967	56,121
Deferred income taxes	8,260	(633)	7,627
Income taxes payable	8,140	(1,819)	6,321
Other liabilities	9,263	—	9,263
Total liabilities	659,980	121,096	781,076
Stockholders' equity:			
Common stock	2,548	—	2,548
Additional paid-in capital	408,667	—	408,667
Accumulated other comprehensive loss	(23,927)	841	(23,086)
Accumulated deficit ⁽²⁾	(52,669)	(107,492)	(160,161)
Total stockholders' equity	334,619	(106,651)	227,968
Total liabilities and stockholders' equity	<u>\$ 994,599</u>	<u>\$ 14,445</u>	<u>\$ 1,009,044</u>

(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.

	Year Ended December 31, 2019		
	As Reported Topic 606	Impact from the Adoption of Topics 606 and 340-40	As Adjusted Topic 605
Revenues:			
Subscriptions	\$ 608,300	\$ 5,625	\$ 613,925
Perpetual licenses	59,693	(7,174)	52,519
Subscriptions and licenses	667,993	(1,549)	666,444
Services	68,661	(256)	68,405
Total revenues	736,654	(1,805)	734,849
Cost of revenues:			
Cost of subscriptions and licenses	71,578	(139)	71,439
Cost of services	72,572	—	72,572
Total cost of revenues	144,150	(139)	144,011
Gross profit	592,504	(1,666)	590,838
Operating expenses:			
Research and development	183,552	—	183,552
Selling and marketing	155,294	(20)	155,274
General and administrative	97,580	—	97,580
Amortization of purchased intangibles	14,213	—	14,213
Total operating expenses	450,639	(20)	450,619
Income from operations	141,865	(1,646)	140,219
Interest expense, net	(8,199)	—	(8,199)
Other income (expense), net	(5,557)	—	(5,557)
Income before income taxes	128,109	(1,646)	126,463
(Provision) benefit for income taxes	(23,738)	1,976	(21,762)
Loss from investment accounted for using the equity method, net of tax	(1,275)	—	(1,275)
Net income	\$ 103,096	\$ 330	\$ 103,426

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. 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, to effectively create 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.

Enterprise 365 (“E365”) subscriptions, 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, hosting, 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 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.

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 entitles our users to 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 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 Topics 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.

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 has 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, 2020 and 2019, the Company has deferred \$18,166 and \$18,060, respectively, related to portfolio balancing exchange rights which is included in *Deferred revenues* in the consolidated balance sheets.

Contract Assets and Contract Liabilities

	December 31,	
	2020	2019
Contract assets	\$ 446	\$ 644
Deferred revenues	209,314	213,145

As of December 31, 2020 and 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* in the consolidated balance sheets. Contract assets were not impaired as of December 31, 2020 or 2019.

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.

For the year ended December 31, 2020, \$203,682 of revenue that was included in the December 31, 2019 deferred revenue balance was recognized. There were additional deferrals of \$193,999, which were primarily related to new billings. For 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.

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, 2020, amounts allocated to these remaining performance obligations are \$209,314, 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:

	Year Ended December 31,			
	2020	2019		2018
	Topic 606	Topic 606	Topic 605	Topic 605
Revenues:				
Subscriptions:				
SELECT subscriptions	\$ 270,749	\$ 267,249	\$ 267,340	\$ 273,745
Enterprise subscriptions	221,524	184,833	196,081	182,816
Term license subscriptions	187,000	156,218	150,504	100,860
Subscriptions	679,273	608,300	613,925	557,421
Perpetual licenses:				
Perpetual licenses	57,382	59,693	52,519	61,065
Subscriptions and licenses	736,655	667,993	666,444	618,486
Services:				
Professional services (recurring)	17,389	22,797	22,974	25,981
Professional services (other)	47,500	45,864	45,431	47,243
Services	64,889	68,661	68,405	73,224
Total revenues	\$ 801,544	\$ 736,654	\$ 734,849	\$ 691,710

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 years ended December 31, 2020 and 2019, the Company recognized \$338,792 and \$311,689 of license related revenues, respectively, of which \$281,410 and \$251,996, respectively, were attributable to the term license component of the Company's subscription based commercial offerings recorded in *Subscriptions* in the consolidated statements of operations.

Under Topic 606, the Company derived 8% of its total revenues through channel partners for both the years ended December 31, 2020 and 2019. Under Topic 605, the Company derived 9% of its total revenues through channel partners for the year ended December 31, 2018.

Revenue to external customers is attributed to individual countries based upon the location of the customer.

	Year Ended December 31,			
	2020	2019		2018
	Topic 606	Topic 606	Topic 605	Topic 605
Revenues:				
Americas ⁽¹⁾	\$ 395,746	\$ 356,331	\$ 360,934	\$ 328,749
Europe, the Middle East, and Africa ("EMEA") ⁽²⁾	254,036	236,602	235,254	231,486
Asia-Pacific ("APAC")	151,762	143,721	138,661	131,475
Total revenues	<u>\$ 801,544</u>	<u>\$ 736,654</u>	<u>\$ 734,849</u>	<u>\$ 691,710</u>

(1) Americas includes the U.S., Canada, and Latin America (including the Caribbean). Revenue attributable to the U.S. totaled \$348,222 (Topic 606) for the year ended December 31, 2020, \$306,493 (Topic 606) and \$307,259 (Topic 605) for the year ended December 31, 2019, and \$277,706 (Topic 605) for the year ended December 31, 2018.

(2) Revenue attributable to the United Kingdom ("U.K.") totaled \$64,433 (Topic 606) for the year ended December 31, 2020, \$57,321 (Topic 606) and \$59,524 (Topic 605) for the year ended December 31, 2019, and \$59,086 (Topic 605) for the year ended December 31, 2018.

Note 4: Acquisitions

For the years ended December 31, 2020, 2019, and 2018, 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,		
	2020	2019	2018
Number of acquisitions	6	4	7
Cash paid at closing ⁽¹⁾	\$ 98,298	\$ 36,577	\$ 143,038
Cash acquired	(5,266)	(2,523)	(7,774)
Net cash paid	<u>\$ 93,032</u>	<u>\$ 34,054</u>	<u>\$ 135,264</u>

(1) Of the cash paid at closing for the year ended December 31, 2020, \$3,413 was deposited into an escrow account to secure any potential indemnification and other obligations of the seller.

The fair value of the contingent consideration from acquisitions is included in the consolidated balance sheets as follows:

	December 31,	
	2020	2019
Accruals and other current liabilities	\$ 2,884	\$ 5,100
Other liabilities	1,415	1,499
Contingent consideration from acquisitions	<u>\$ 4,299</u>	<u>\$ 6,599</u>

The fair value of non-contingent consideration from acquisitions is included in the consolidated balance sheets as follows:

	December 31,	
	2020	2019
Accruals and other current liabilities	\$ 685	\$ 900
Other liabilities	1,774	—
Non-contingent consideration from acquisitions	<u>\$ 2,459</u>	<u>\$ 900</u>

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 respective 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. For the years ended December 31, 2020, 2019, and 2018, the fair value adjustments to reduce revenue were \$599, \$553, and \$2,469, respectively.

The purchase accounting for the six acquisitions completed for the year ended December 31, 2020 is not yet completed. Identifiable assets acquired and liabilities assumed were provisionally recorded at their estimated fair values on the respective 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. For the years ended December 31, 2020, 2019, and 2018, the Company incurred acquisition and integration costs of \$2,227, \$950, and \$1,361, 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 consolidated statements of operations.

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,		
	2020	2019	2018
Consideration:			
Cash paid at closing	\$ 98,298	\$ 36,577	\$ 143,038
Contingent consideration	2,380	4,498	13,456
Deferred, non-contingent consideration, net	1,416	—	690
Total consideration	\$ 102,094	\$ 41,075	\$ 157,184
Assets acquired and liabilities assumed:			
Cash	\$ 5,266	\$ 2,523	\$ 7,774
Prepaid and other current assets	8,701	1,782	4,790
Operating lease right-of-use assets	2,529	—	—
Property and equipment	499	411	340
Other assets	36	84	—
Customer relationship asset (weighted average useful life of 6, 7, and 5 years, respectively)	11,371	6,534	27,294
Software and technology (weighted average useful life of 3 years)	2,207	2,423	9,332
In-process research and development	—	—	1,366
Non-compete agreement (useful life of 5 years)	200	150	—
Trademarks (weighted average useful life of 7, 5, and 7 years, respectively)	3,953	1,431	2,090
Total identifiable assets acquired excluding goodwill	34,762	15,338	52,986
Accruals and other current liabilities	(4,991)	(3,538)	(3,848)
Deferred revenues	(5,351)	(2,897)	(6,181)
Operating lease liabilities	(2,529)	—	—
Deferred income taxes	(1,701)	(1,869)	(8,917)
Other liabilities	(86)	—	—
Total liabilities assumed	(14,658)	(8,304)	(18,946)
Net identifiable assets acquired excluding goodwill	20,104	7,034	34,040
Goodwill	81,990	34,041	123,144
Net assets acquired	\$ 102,094	\$ 41,075	\$ 157,184

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 December 31, 2020, \$24,133 is expected to be deductible for tax purposes.

Acquisition Subsequent to December 31, 2020

In February 2021, the Company completed the acquisition of E7. The acquisition is not expected to be material to the Company's consolidated statements of operations and financial position.

Note 5: Property and Equipment, Net

Property and equipment, net consist of the following as of December 31, 2020 and 2019:

	December 31,	
	2020	2019
Land	\$ 2,811	\$ 2,811
Building and improvements	33,094	31,619
Computer equipment and software	44,369	47,472
Furniture, fixtures, and equipment	12,849	12,593
Aircraft	4,075	3,910
Other	58	79
Property and equipment, at cost	97,256	98,484
Less: Accumulated depreciation	(68,842)	(68,852)
Total property and equipment, net	\$ 28,414	\$ 29,632

Depreciation expense for the years ended December 31, 2020, 2019, and 2018 was \$10,166, \$9,813, and \$9,300, respectively.

Note 6: Goodwill and Other Intangible Assets

The changes in the carrying amount of goodwill for the years ended December 31, 2020 and 2019 are as follows:

Balance, December 31, 2018	\$ 446,318
Acquisitions	34,041
Foreign currency translation adjustments	(321)
Other adjustments	27
Balance, December 31, 2019	480,065
Acquisitions	81,990
Foreign currency translation adjustments	19,195
Other adjustments	(76)
Balance, December 31, 2020	\$ 581,174

Details of intangible assets other than goodwill as of December 31, 2020 and 2019 are as follows:

	Estimated Useful Life	December 31, 2020			December 31, 2019		
		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	\$ 67,691	\$ (63,046)	\$ 4,645	\$ 66,063	\$ (58,866)	\$ 7,197
Customer relationships	3-10 years	97,008	(66,030)	30,978	88,904	(59,744)	29,160
Trademarks	3-10 years	26,610	(16,888)	9,722	22,278	(12,461)	9,817
Non-compete agreements	5 years	350	(68)	282	150	(11)	139
Total intangible assets		<u>\$ 191,659</u>	<u>\$ (146,032)</u>	<u>\$ 45,627</u>	<u>\$ 177,395</u>	<u>\$ (131,082)</u>	<u>\$ 46,313</u>

The aggregate amortization expense for purchased intangible assets with finite lives recorded for the years ended December 31, 2020, 2019, and 2018 was reflected in our consolidated statements of operations as follows:

	Year Ended December 31,		
	2020	2019	2018
Cost of subscriptions and licenses	\$ 4,981	\$ 3,795	\$ 2,840
Amortization of purchased intangibles	15,352	14,213	14,000
Total amortization expense	<u>\$ 20,333</u>	<u>\$ 18,008</u>	<u>\$ 16,840</u>

Amortization expense for the years following December 31, 2020 are estimated as follows:

2021	\$ 16,088
2022	12,975
2023	6,609
2024	3,316
2025	2,559
Thereafter	4,080
	<u>\$ 45,627</u>

Note 7: Investments

In September 2020, the Company acquired an interest in a platform as a service technology company with a focus on digital twin integration in the energy sector, which the Company accounts for using the cost method. In September 2019, the Company and Topcon Positioning Systems, Inc. (“Topcon”) formed Digital Construction Works, Inc. (“DCW”), a joint venture which operates as a digital integrator of software and cloud services for the construction industry, which the Company accounts for using the equity method. 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.

For the year ended December 31, 2020, the Company invested \$3,440 in its cost method investment. The Company invested \$3,000 in DCW in each of the years ended December 31, 2020 and 2019. As of December 31, 2020 and 2019, the carrying amount of the Company’s investment in DCW was \$2,251 and \$1,725, respectively.

The Company tests its investments for impairment whenever circumstances indicate that the carrying value of the investment may not be recoverable. The Company’s investments were not impaired as of December 31, 2020 or 2019.

Related Party Disclosures — Pursuant to ASC 850-10-20, *Related Party Disclosures*, the Company has determined that DCW is a related party. For the years ended December 31, 2020 and 2019, transactions between the Company and DCW were not material to the Company’s consolidated financial statements.

Note 8: Leases

The Company’s operating leases consist of office facilities, office equipment, and automobiles, and the Company’s finance lease consists of computer equipment. The finance lease is not material for the periods presented. As of December 31, 2020, the Company’s leases have remaining terms of less than one year to nine years, some of which include one or more options to renew, with renewal terms from one year to ten years and some of which include options to terminate the leases from less than one year to ten 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.

The components of operating lease cost reflected in the consolidated statement of operations for the year ended December 31, 2020 were as follows:

	Year Ended December 31, 2020
Operating lease cost ⁽¹⁾	\$ 18,194
Variable lease cost	3,881
Short-term lease cost	399
Total operating lease cost	<u>\$ 22,474</u>

(1) Operating lease cost includes rent cost related to operating leases for office facilities of \$17,417 for the year ended December 31, 2020.

For the years ended December 31, 2019 and 2018, total rent expense related to operating leases recognized on straight-line basis over the life of the lease under the prior lease standard (Topic 840) was \$17,036 and \$16,726, respectively.

Other information related to leases for the year ended December 31, 2020 was as follows:

	Year Ended December 31, 2020
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	\$ 18,384
Right-of-use assets obtained in exchange for new operating lease liabilities	\$ 15,522
Weighted average remaining lease term — operating leases (in years)	3.65
Weighted average discount rate — operating leases	2.14 %

Maturities of operating lease liabilities as of December 31, 2020 are as follows:

	December 31, 2020
2021	\$ 17,666
2022	13,859
2023	8,801
2024	4,715
2025	3,528
Thereafter	1,983
Total future lease payments	50,552
Less: Imputed interest	(2,175)
Total operating lease liabilities	<u>\$ 48,377</u>

As of December 31, 2020, the Company had additional operating lease minimum lease payments of \$1,368 for executed leases that have not yet commenced, primarily for office locations.

As of December 31, 2019, under the prior lease standard (Topic 840), future minimum lease payments under non-cancelable operating leases are as follows:

	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	<u>\$ 52,016</u>

Total financing lease liabilities as of December 31, 2020 were \$296. Supplemental balance sheet information related to the financing lease as of December 31, 2020 is as follows:

	December 31, 2020	
Property and equipment	\$	572
Accumulated depreciation		(229)
Property and equipment, net	\$	343
Accruals and other current liabilities	\$	197
Other liabilities		99
Total financing lease liabilities	\$	296

Note 9: Accruals and Other Current Liabilities

Accruals and other current liabilities consist of the following:

	December 31,	
	2020	2019
CSS deposits	\$ 110,291	\$ 54,688
Accrued benefits	36,613	33,184
Accrued compensation	22,131	31,537
Due to customers	9,869	8,945
Accrued hosting costs	7,988	2,215
Accrued severance and realignment costs	7,209	1,688
Sales taxes payable	6,361	5,287
Accrued acquisition stay bonuses	5,599	4,143
Accrued professional fees	4,210	4,382
Contingent consideration from acquisitions	2,884	5,100
Accrued facility costs	2,095	2,168
Non-contingent consideration from acquisitions	685	900
Accrued rent	—	1,909
Other accrued and current liabilities	10,858	11,371
Total accruals and other current liabilities	\$ 226,793	\$ 167,517

Note 10: Long-Term Debt

Long-term debt consists of the following as of December 31, 2020 and 2019:

	December 31,	
	2020	2019
Bank credit facility:		
Senior secured revolver	\$ 246,000	\$ 233,750
Total long-term debt	\$ 246,000	\$ 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. Subsequent to December 31, 2020, the Company refinanced its Credit Facility (see Note 25).

On September 2, 2020, the Company entered into the First Amendment to the Credit Facility, which provided a new term loan of \$125,000 (the “Term Loan”) with a maturity of December 18, 2022 and included certain other amendments, including the addition of a mandatory prepayment provision requiring the Company to prepay borrowings under the Credit Facility in an aggregate amount equal to the net proceeds from any underwritten public offering by the Company, which prepayment shall be applied, first, to the Term Loan and, second, to any borrowings outstanding under the revolving facility under the Credit Facility without reducing the revolving commitments thereof. The Company used borrowings under the Term Loan and under the revolving facility under the Credit Facility to pay the Special Dividend declared by the Company’s board of directors on August 28, 2020 (see Note 13). In November 2020, the Company used a portion of the net proceeds from the Follow-On Offering to repay the \$125,000 Term Loan (see Note 13).

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 \$150 and \$546 of letters of credit and surety bonds outstanding as of December 31, 2020 and 2019, respectively. As of December 31, 2020 and 2019, the Company had \$253,850 and \$265,704, respectively, 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 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. As of December 31, 2020 and 2019, 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 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* in the consolidated statement of operations. As of December 31, 2020, the Company recorded a swap related asset at fair value of \$347 in *Other assets* in the consolidated balance sheet.

The weighted average interest rate under the Credit Facility was 1.92%, 3.47%, and 3.28% for the years ended December 31, 2020, 2019, and 2018, respectively. There were no accrued interest or fees as of December 31, 2020 and 2019. Interest expense was \$6,878, \$8,971, and \$8,800 for the years ended December 31, 2020, 2019, and 2018, respectively.

For the year ended December 31, 2020, the Company incurred \$432 of debt issuance costs related to the Term Loan. In addition, interest expense includes amortization of deferred financing costs of \$553 for both the years ended December 31, 2020 and 2019 and \$552 for the year ended December 31, 2018.

Other — Interest expense related to other obligations was \$50, \$207, and \$255 for the years ended December 31, 2020, 2019, and 2018, respectively.

Convertible Debt — In January 2021, the Company completed an offering of convertible debt (see Note 25).

Note 11: Executive Bonus Plan

Certain of the Company's key employees, including its named executive officers, participate in the Bentley Systems, Incorporated Bonus Pool Plan, as amended and restated, effective as of September 3, 2020 (the "Bonus Plan"). Pursuant to the Bonus Plan, participants are eligible to receive incentive bonuses that are determined based on the Company's adjusted Management Report Operating Income ("MROI"), as defined in the plan agreement and before deduction for such plan payments. For purposes of the Bonus Plan, the bonus pool thereunder may be funded with up to an aggregate of 20% of the Company's adjusted MROI, subject to approval by the board of directors, with payments made to plan participants based on each such participant's allocated interest in the bonus pool. 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.

A participant may defer any portion, or all, of such participant's incentive bonus payable pursuant to the Bonus Plan into the DCP (see Note 12). Prior to September 3, 2020, a participant's non-deferred incentive bonus was payable in cash. On September 3, 2020, the Company amended and restated the Bonus Plan to provide, in part, that a participant may elect to receive any portion, or all, of such participant's non-deferred incentive bonus in the form of shares of fully vested Class B Common Stock issued under the Bentley Systems, Incorporated 2020 Omnibus Incentive Plan (the "2020 Incentive Award Plan") beginning in the fourth quarter of 2020, subject to the limitation described below. The Company records the election of non-deferred incentive bonus in the form of shares of fully vested Class B Common Stock as stock-based compensation expense in the consolidated statement of operations (see Note 15). Such election must be made prior to the start of the applicable calendar quarter for which the incentive bonus is to be paid, and the number of shares of Class B Common Stock payable in respect of such elected amount is calculated using a volume-weighted average price of the Company's Class B Common Stock for the period commencing on the tenth trading day prior to the end of the applicable calendar quarter and ending on the tenth trading day following the end of the applicable calendar quarter. Notwithstanding participants' elections to receive shares of fully vested Class B Common Stock in respect of their non-deferred incentive bonus payments, if, in any calendar quarter, the aggregate U.S. Dollar value of shares of fully vested Class B Common Stock payable in respect of the non-deferred incentive bonuses exceeds \$7,500, the portion of each participant's non-deferred incentive bonus payable in shares of fully vested Class B Common Stock will be reduced pro rata such that the \$7,500 limit is not exceeded, and, for each affected participant, the amount of such reduction will be payable in cash.

For the years ended December 31, 2020, 2019, and 2018, the incentive compensation, including cash payments, election to receive shares of fully vested Class B Common Stock beginning in the fourth quarter of 2020, and deferred compensation to plan participants, recognized under this plan (net of all applicable holdbacks) was \$34,340, \$31,061, and \$27,641, 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 \$3,583, \$3,311, and \$3,337, for the years ended December 31, 2020, 2019, and 2018, respectively. The Company also maintains various retirement benefit plans (primarily defined contribution plans) for colleagues of its international subsidiaries. Contributions to these plans were \$7,347, \$8,070, and \$7,613, for the years ended December 31, 2020, 2019, and 2018, respectively.

The Company also has a nonqualified DCP, which was amended and restated effective September 22, 2020, under which certain officers and key colleagues may defer all or any part of their incentive compensation, and the Company may make discretionary awards on behalf of such participants. Elective participant deferrals and discretionary Company awards are required to be in the form of phantom shares of the Company's Class B Common Stock, which are valued for tax and accounting purposes in the same manner as actual 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 for the years ended December 31, 2020, 2019, and 2018. Pursuant to the terms of the DCP, in connection with the Special Dividend (see Note 13) declared on August 28, 2020, participants received 2,709,851 phantom shares in lieu of the Special Dividend. As of December 31, 2020 and 2019, phantom shares issuable by the DCP were 30,590,955 and 30,768,633, respectively.

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 \$2,591 and \$2,544 as of December 31, 2020 and 2019, respectively.

Note 13: Common Stock

Initial Public Offering

On September 25, 2020, the Company completed its IPO. The selling stockholders sold 12,360,991 shares of Class B Common Stock at a public offering price of \$22.00 per share. The Company did not sell any shares in the IPO and did not receive any of the proceeds from the sale of the Class B Common Stock sold by the selling stockholders. For the year ended December 31, 2020, the Company recorded \$26,130 in *Expenses associated with initial public offering* in the consolidated statement of operations. These expenses included certain non-recurring costs relating to the Company's IPO, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the selling stockholders, professional fees, and other expenses.

In connection with the IPO, the Company's amended and restated Certificate of Incorporation authorizes shares of undesignated preferred stock. See below for further detail.

Authorized Common Shares — Upon the closing of the IPO, the Company's amended and restated Certificate of Incorporation authorizes the Company to issue up to 100,000,000 shares of Class A Common Stock and up to 1,800,000,000 shares of Class B Common Stock. Prior to the IPO, the Company amended and restated its Certificate of Incorporation on April 20, 2018 to authorize 320,000,000 shares of Class A Common Stock and 600,000,000 shares of Class B Common Stock. As of December 31, 2020 and 2019, outstanding shares of Class A Common Stock totaled 11,601,757. As of December 31, 2020 and 2019, outstanding shares of Class B Common Stock totaled 260,552,747 and 243,241,192, respectively.

Follow-On Public Offering

On November 17, 2020, the Company completed its Follow-On Offering of 11,500,000 shares of Class B Common Stock at a public offering price of \$32.00 per share. The Company sold 9,603,965 shares of Class B Common Stock (inclusive of 1,500,000 shares sold upon the exercise by the underwriters of their option to purchase additional shares of the Company's Class B Common Stock). The selling stockholders sold 1,896,035 shares of Class B Common Stock. The Company received net proceeds of \$294,429 after deducting expenses of \$12,898. The Company did not receive any of the proceeds from the sale of the Class B Common Stock sold by the selling stockholders. Expenses associated with the Follow-On Offering included certain non-recurring costs, consisting of the payment of underwriting discounts and commissions applicable to the sale of shares by the Company, professional fees, and other expenses. The Company agreed to pay certain expenses in connection with the Follow-On Offering on behalf of the selling stockholders and made an accounting policy election to offset these expenses against the Follow-On Offering proceeds. The Follow-On Offering net proceeds were used to repay outstanding borrowings under the Term Loan and revolving facility of the Company's Credit Facility (see Note 10).

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-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. The strategic investor’s right of first refusal terminated upon the effectiveness of the Company’s IPO registration statement.

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.

For the year ended December 31, 2020, the investor purchased 4,574,399 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 year ended December 31, 2020, the investor reached the maximum purchase amount of \$250,000.

For 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.

For the year ended December 31, 2018, the investor purchased 5,151,019 shares under the Common Stock Purchase Agreement, 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 acquired directly by the investor for consideration of \$22,792.

For the year ended December 31, 2020, the Company issued 4,060,839 shares of Class B Common Stock to colleagues who exercised their stock options, net of shares withheld at exercise. Of the total stock options exercised for 5,486,191 shares, 1,425,352 shares were sold back to the Company to pay for the cost of the stock options, as well as applicable income tax withholdings of \$4,755. Of the total stock options exercised, 1,063,204 shares were issued for cash totaling \$9,128. For the year ended December 31, 2020, the Company paid \$1,454 for 128,007 shares sold back to the Company upon exercise of the Put and Call provisions under the Amended and Restated 2015 Equity Incentive Plan (the “2015 Equity Incentive Plan”) (see Note 15).

For the year ended December 31, 2019, the Company issued 3,214,542 shares of Class B Common Stock to colleagues who exercised their stock options, net of shares withheld at exercise. Of the total stock options exercised for 4,731,158 shares, 1,516,616 shares were sold back to the Company to pay for the cost of the stock options, as well as applicable income tax withholdings of \$2,324. Of the total stock options exercised, 1,273,271 shares were issued for cash totaling \$3,627. For 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 its applicable equity incentive plans (see Note 15).

For the year ended December 31, 2018, the Company issued 2,812,998 shares of Class B Common Stock to colleagues who exercised their stock options, net of shares withheld at exercise. Of the total stock options exercised for 3,726,606 shares, 913,608 shares were sold back to the Company to pay for the cost of the stock options, as well as applicable income tax withholdings of \$1,577. Of the total stock options exercised, 1,235,204 shares were issued for cash totaling \$2,187. For the year ended December 31, 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 its applicable equity incentive plans (see Note 15).

Upon the completion of the IPO, the Put and Call provisions of the Company's 2015 Equity Incentive Plan terminated automatically.

For the years ended December 31, 2020, 2019, and 2018, the Company issued 3,081,607, 2,322,983, and 2,332,585 shares of Class B Common Stock to DCP participants in connection with distributions from the plan. The distribution in shares for the year ended December 31, 2020 totaled 3,352,931 shares of which 271,324 shares were sold back to the Company in the same period to pay for applicable income tax withholdings of \$4,625. 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 to pay for the cost of applicable income tax withholding of \$5,609. The distribution in shares for the year ended December 31, 2018 totaled 3,340,904 shares 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.

For the years ended December 31, 2020, 2019, and 2018, the Company repurchased 549,834, 318,203, and 465,979 shares from its profit-sharing plan for \$6,970, \$2,417, and \$3,387, respectively.

Selected Terms of Class A Common Stock and Class B Common Stock — Upon the closing of the IPO, the rights of the holders of Class A Common Stock and Class B Common Stock are identical, except with respect to voting and conversion rights. Each share of Class B Common Stock is entitled to one vote per share, while each share of Class A Common Stock is entitled to 29 votes per share and is convertible at any time into one share of Class B Common Stock. Class A Common Stock will automatically convert into Class B Common Stock upon certain transfers, and its votes per share will be reduced to 11 in the event none of the Bentleys, as defined, serves as a Company director or executive officer. Class A Common Stock also will automatically convert into shares of 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 Bentley family, as defined, collectively, directly or indirectly, own less than 20% of the issued and outstanding Class B Common Stock on a fully-diluted basis (assuming the conversion of all issued and outstanding Class A Common Stock). Pursuant to the terms of the Company's amended and restated Certificate of Incorporation in effect prior to the IPO, each share of Class B Common Stock had 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 did 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 was required by law, and the shares of Class B Common Stock were not included in determining the number of shares voting or entitled to vote on any such matters.

Selected Terms of Preferred Stock — Upon the closing of the IPO, the Company's amended and restated Certificate of Incorporation authorizes the Company to issue up to 100,000,000 shares of preferred stock. Preferred stock has rights, preferences, and privileges which may be designated from time to time by the Company's board of directors. As of December 31, 2020, there were no shares of preferred stock outstanding.

Dividends — The Company declared cash dividends during the periods presented as follows:

	Dividend Per Share	Amount
2020:		
Fourth quarter	\$ 0.030	\$ 8,270
Third quarter ⁽¹⁾	1.530	400,311
Second quarter	0.030	7,771
First quarter	0.030	7,666
Total	<u>\$ 1.620</u>	<u>\$ 424,018</u>
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	<u>\$ 0.100</u>	<u>\$ 25,390</u>
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	<u>\$ 0.080</u>	<u>\$ 20,005</u>

(1) On August 28, 2020, the Company's board of directors declared a Special Dividend of \$1.50 per share of the Company's common stock (\$392,489 in the aggregate) payable to all stockholders of record as of August 31, 2020, including dividends which accrue on certain unvested restricted stock and RSUs. In connection with the Special Dividend declaration, an in kind adjustment was made to phantom shares issuable pursuant to the DCP (see Note 12) and the exercise price of all outstanding stock options at that time were reduced by \$1.50, but not lower than \$0.01 (see Note 15).

Global Employee Stock Purchase Plan — Effective September 22, 2020, the Company's Board and its stockholders adopted and approved the Bentley Systems, Incorporated Global Employee Stock Purchase Plan (the "ESPP"). The ESPP provides eligible colleagues of the Company with an opportunity to contribute up to 15% of their eligible compensation, up to a maximum of \$25 per year and subject to any other plan limitations, toward the purchase of the Company's Class B Common Stock at a discounted price. The ESPP has 25,000,000 shares of Class B Common Stock reserved for issuance. The ESPP will be implemented by means of consecutive offering periods, with the first offering period commencing on the first trading day on or after January 1, 2021 and ending on the last trading day on or before June 30, 2021. Unless otherwise determined by the board of directors, offering periods will run from January 1st (or the first trading day thereafter) through June 30th (or the first trading day prior to such date), and from July 1st (or the first trading day thereafter) through December 31st (or the first trading day prior to such date). The purchase price per share at which shares of Class B Common Stock are sold in an offering period under the ESPP will be equal to the lesser of 85% of the fair market value of a share of Class B Common Stock (i) on the first trading day of the offering period, or (ii) on the purchase date (i.e., the last trading day of the purchase period). As of December 31, 2020, no shares were issued under the ESPP.

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, 2017	\$ (17,847)	\$ (693)	\$ (18,540)
Other comprehensive (loss) income, before taxes	(11,020)	208	(10,812)
Tax expense	—	(62)	(62)
Other comprehensive (loss) income, 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 benefit	—	203	203
Other comprehensive income (loss), net of taxes	5,959	(472)	5,487
Balance, December 31, 2019	(22,908)	(1,019)	(23,927)
Other comprehensive (loss) income, before taxes	(2,311)	6	(2,305)
Tax expense	—	(1)	(1)
Other comprehensive (loss) income, net of taxes	(2,311)	5	(2,306)
Balance, December 31, 2020	<u>\$ (25,219)</u>	<u>\$ (1,014)</u>	<u>\$ (26,233)</u>

Note 15: Equity Awards and Instruments

Effective September 22, 2020, the Company adopted and approved the 2020 Incentive Award Plan. The 2020 Incentive Award Plan provides for the granting of stock, stock options, restricted stock, RSUs, and other stock-based or performance-based awards to certain directors, officers, colleagues, consultants, and advisors of the Company. The 2020 Incentive Award Plan provides that the total number of shares of Class B Common Stock that may be issued under the 2020 Incentive Award Plan is 25,000,000 (the “Absolute Share Limit”); provided, however, that the Absolute Share Limit is automatically increased on the first day of each fiscal year in an amount equal to the lower of 1% of the total number of shares of Class B Common Stock outstanding on the last day of the immediately preceding fiscal year and a lower number of shares of Class B Common Stock as determined by the Company’s board of directors. The 2020 Incentive Award Plan terminates in September 2030. Equity awards that are expired, canceled, forfeited, or terminated for any reason will be available for future grant under the 2020 Incentive Award Plan. As of December 31, 2020, equity awards available for future grants under the 2020 Incentive Award Plan were 24,904,235.

The Company also has equity awards outstanding under its 2015 Equity Incentive Plan which provided for the granting of awards in the form of stock options, stock appreciation rights, dividend equivalent rights, restricted stock, RSUs, and stock grants. The 2015 Equity Incentive Plan had 50,000,000 shares of Class B Common Stock reserved for issuance and terminates in November 2024. Following the completion of the IPO, no further awards may be granted under the 2015 Equity Incentive Plan.

Equity Awards

Stock Options — Stock options generally vest ratably on each of the first four anniversaries of the grant date. Prior to the IPO, stock options granted under the 2015 Equity Incentive Plan included Put and Call provisions that allowed 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 began on the second day after the six-month anniversary of the date the option was exercised and ended after an additional 30 days. The Call right provision allowed 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 could 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. These Put and Call rights terminated upon the completion of the IPO.

In accordance with the terms of the 2015 Equity Incentive Plan, in connection with the payment of the Special Dividend of \$1.50 per share of the Company's common stock on September 2, 2020, the Company equitably reduced the exercise price of each outstanding stock option granted under the 2015 Equity Incentive Plan by \$1.50, but not lower than \$0.01 (see Note 13).

Stock Grants — Under the equity incentive plans, the Company may grant unrestricted, fully vested shares of Class B Common Stock to eligible colleagues. Prior to the IPO, any such shares awarded had Put and Call rights similar to those described above with respect to stock options, which terminated upon the completion of the IPO.

Restricted Stock and RSUs — Under the equity incentive plans, the Company may grant both time and performance-based shares of restricted Class B Common Stock and RSUs to eligible colleagues. Shares of restricted stock have voting rights and, subject to the terms of the award agreements, the time-based restricted stock awards generally accrue declared dividends which are paid upon vesting. RSUs, which may be cash or share-settled depending on the award, do not have voting rights, but, subject to the terms of the award agreements, generally accrue declared dividends which are paid upon vesting. Certain historical RSUs granted in 2016 under the Company's 2015 Equity Incentive Plan have dividend equivalent rights and do not accrue cash dividends. Recipients of the Company's outstanding performance-based restricted stock awards and RSUs are paid dividends prior to vesting.

Stock-Based Compensation Expense

Total stock-based compensation expense was as follows:

	Year Ended December 31,		
	2020	2019	2018
IPO vested restricted stock and RSU expense	\$ 15,102	\$ —	\$ —
Bonus Plan expense (see Note 11)	6,524	—	—
Stock option expense	6,858	6,342	4,808
Restricted stock and RSU expense	4,248	1,749	3,074
Stock grants expense	319	—	—
Total pre-tax expense ⁽¹⁾	<u>\$ 33,051</u>	<u>\$ 8,091</u>	<u>\$ 7,882</u>

(1) As of December 31, 2020, \$6,835 remained in *Accruals and other current liabilities* in the consolidated balance sheet.

Total stock-based compensation expense is included in the consolidated statements of operations as follows:

	Year Ended December 31,		
	2020	2019	2018
Cost of subscriptions and licenses	\$ 960	\$ 115	\$ 44
Cost of services	2,939	522	362
Research and development	12,105	3,107	2,971
Selling and marketing	6,692	2,210	2,337
General and administrative	10,355	2,137	2,168
Total pre-tax expense	<u>\$ 33,051</u>	<u>\$ 8,091</u>	<u>\$ 7,882</u>

Stock-based compensation expense is measured at the grant date fair value of the award and is recognized ratably over the requisite service period, which is generally the vesting period. The Company accounts for forfeitures of equity awards as those forfeitures occur.

The fair value of the common stock during periods prior to the IPO 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.

Stock Options

The fair 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, which are estimated as follows:

Expected volatility. The expected stock price volatility for the Company's common stock was estimated by using 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. The expected dividend yield is calculated by dividing the Company's annual dividend, based on the most recent quarterly dividend rate, by the Company's common stock price (as described above) on the grant date.

Risk-free interest 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 stock options at the time of grant.

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.

	Year Ended December 31,		
	2020	2019	2018
Expected volatility	31.04%	29.57%	26.32% – 27.18%
Expected dividend yield	1.11%	1.38%	1.18%
Risk-free interest rate	1.31%	2.48%	2.40%
Expected term (in years)	3.75	3.75	3.75
Weighted average grant date fair value of stock options issued	\$2.49	\$1.66	\$1.46

The following is a summary of stock option activity and related information under the Company's applicable equity incentive plans and after giving effect to the \$1.50 downward exercise price adjustment as a result of the Special Dividend:

	Stock Options	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value
Outstanding, December 31, 2019	18,691,667	\$ 4.47		
Granted	10,000	9.34		
Exercised	(5,486,191)	3.47		
Canceled	(373,250)	5.33		
Outstanding, December 31, 2020	<u>12,842,226</u>	<u>\$ 4.87</u>	<u>2.06</u>	<u>\$ 457,650</u>
Exercisable, December 31, 2020	<u>6,327,541</u>	<u>\$ 4.42</u>	<u>1.47</u>	<u>\$ 228,378</u>

For the years ended December 31, 2020, 2019, and 2018, the Company received cash proceeds of \$9,128, \$3,612, and \$2,179, respectively, related to the exercise of stock options. The total intrinsic value of stock options exercised for the years ended December 31, 2020, 2019, and 2018 was \$72,275, \$22,914, and \$18,291, respectively.

As of December 31, 2020, there was \$6,897 of unrecognized compensation cost related to unvested stock options, which is expected to be recognized over a weighted average period of approximately 2.2 years.

Acquisition Options — In addition to stock options granted under the Company's equity incentive plans, 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, are exercisable on the fourth anniversary of the closing of the acquisition, and have an initial exercise price of \$6.805 per share. The options have a four-year service condition, which was incorporated into the Company's Call rights. 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 were 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. Upon the completion of the IPO, the Put and Call provisions, as well as the incorporated service condition, of the Company's acquisition options terminated automatically and as such, the Company accelerated \$1,548 of previously unrecognized stock-based compensation associated with these options for the year ended December 31, 2020. The Company recorded a total of \$2,012 of stock-based compensation expense associated with these options for the year ended December 31, 2020. As of December 31, 2020, all options to acquire 900,000 shares remain outstanding. As of December 31, 2020, these options are non-exercisable and have an aggregate intrinsic value of \$7,992.

Stock Grants

The fair value of stock grants is determined by the product of the number of fully vested Class B Common Stock granted and the Company's common stock price (as described above) on the grant date. The total expense related to stock grants is recognized on the grant date as the issued award is fully vested.

The Company granted 21,956 fully vested shares of Class B Common Stock with a fair value of \$319 for the year ended December 31, 2020. The Company did not grant fully vested shares of Class B Common Stock during 2019 and 2018.

Restricted Stock and RSUs

The fair value of restricted stock and RSUs is determined by the product of the number of shares granted and the Company's common stock price (as described above) on the grant date.

The following is a summary of unvested restricted stock and RSU activity and related information under the Company's applicable equity incentive plans:

	Restricted Stock and RSUs	Weighted Average Grant Date Fair Value Per Share
Unvested, December 31, 2019	210,111	\$ 6.79
Granted	2,481,670	16.03
Vested	(1,148,656)	14.58
Canceled	(88,371)	10.06
Unvested, December 31, 2020	<u>1,454,754</u>	<u>\$ 16.17</u>

Grant Date	Restricted Stock and RSUs	Restricted Stock	RSUs	Vesting Terms
Q1 2020	12,454	12,454	—	Time-based
Q3 2020	185,324	175,004	10,320	Performance-based ⁽¹⁾
Q3 2020	1,197,760	698,540	499,220 ⁽²⁾	Time-based
Q3 2020	994,912	962,674	32,238 ⁽³⁾	Upon the Company's completion of the IPO on September 25, 2020
Q4 2020	12,435	1,667	10,768	Performance-based ⁽¹⁾
Q4 2020	78,785	13,485	65,300	Time-based
2020 total granted	<u>2,481,670</u>	<u>1,863,824</u>	<u>617,846</u>	

(1) Performance-based vesting is 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 ended on December 31, 2020.

(2) Includes 46,300 RSUs that will be settled in cash.

(3) 32,238 RSUs will be settled in cash.

The weighted average grant date fair values of restricted stock and RSUs granted were \$16.03, \$7.24, and \$6.81, for the years ended December 31, 2020, 2019, and 2018, respectively.

For the years ended December 31, 2020, 2019, and 2018, restricted stock and RSUs were issued net of 339,833, 54,418, and 81,173 shares, respectively, which were sold back to the Company to settle applicable income tax withholdings of \$7,951, \$399, and \$637, respectively.

As of December 31, 2020, there was \$19,420 of unrecognized compensation cost related to unvested restricted stock and RSUs, excluding cash-settled restricted stock and RSUs, which is expected to be recognized over a weighted average period of approximately 3.6 years.

Note 16: Income Taxes

The components of income before income taxes consist of the following:

	Year Ended December 31,		
	2020	2019	2018
Domestic	\$ 61,470	\$ 61,691	\$ 56,426
International	106,150	66,418	56,436
Income before income taxes	<u>\$ 167,620</u>	<u>\$ 128,109</u>	<u>\$ 112,862</u>

The (provision) benefit for income taxes consists of the following:

	Year Ended December 31,		
	2020	2019	2018
Current:			
Federal	\$ (11,094)	\$ (7,696)	\$ (18,634)
State	(3,597)	(2,486)	(873)
Foreign	(7,688)	(12,824)	(11,303)
	<u>(22,379)</u>	<u>(23,006)</u>	<u>(30,810)</u>
Deferred:			
Federal	(5,194)	(2,389)	7,655
State	(1,272)	(412)	(508)
Foreign	(9,780)	2,069	52,913
	<u>(16,246)</u>	<u>(732)</u>	<u>60,060</u>
(Provision) benefit for income taxes	<u>\$ (38,625)</u>	<u>\$ (23,738)</u>	<u>\$ 29,250</u>

A reconciliation of the U.S. statutory federal income tax rate to the Company's effective income tax rate is as follows:

	Year Ended December 31,		
	2020	2019	2018
Federal statutory rate	21.0 %	21.0 %	21.0 %
State income taxes, net of federal benefit	2.9	2.0	0.9
Permanent book/tax differences	(0.6)	0.2	(0.2)
Stock-based compensation	(5.2)	(2.3)	(2.4)
Non-deductible officer compensation	4.6	—	—
Expenses associated with IPO	3.3	—	—
Tax credits	(2.1)	(3.6)	(3.3)
Foreign tax rate differential	(2.0)	(2.8)	(4.2)
Income tax reserves	(0.5)	0.9	(0.2)
Intercompany sales of certain operating assets	—	—	(41.1)
Net tax on foreign earnings (GILTI/FDII/FTC)	0.5	6.1	—
Other	1.1	(3.0)	(0.2)
U.S. tax reform	—	—	3.8
Effective income tax rate	<u>23.0 %</u>	<u>18.5 %</u>	<u>(25.9)%</u>

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 in accordance with the January 1, 2018 early adoption of ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory*.

The following is a summary of the significant components of the Company's deferred tax assets and liabilities:

	December 31,	
	2020	2019
Deferred tax assets:		
Accrued compensation	\$ 31,580	\$ 36,195
Net operating loss ("NOL") and credit carryforwards	7,573	11,544
Intangible assets including goodwill	283	10,371
Other accruals not currently deductible	346	960
Allowance for doubtful accounts	382	472
Other comprehensive income	431	394
Lease liabilities	10,466	—
Other	138	239
Total deferred tax assets	51,199	60,175
Less: Valuation allowance	(1,207)	(2,329)
Net deferred tax assets	49,992	57,846
Deferred tax liabilities:		
Deferred revenues	(7,257)	(12,830)
Property and equipment	(1,989)	(707)
Operating lease right-of-use assets	(10,070)	—
Prepaid expenses	(2,301)	(1,501)
Total deferred tax liabilities	(21,617)	(15,038)
Net deferred tax assets (liabilities)	\$ 28,375	\$ 42,808

As of December 31, 2020, the U.S. federal NOL carryforwards with a future benefit of \$533 expire in 2033 through 2036. The Canadian credit carryforwards of \$1,798 have an indefinite carryforward. The Company's state NOL carryforwards and state credit carryforwards with a future benefit of \$667 expire in 2021 through 2036. In addition, the Company has foreign NOL and credit carryforwards with a future benefit of \$4,286 (net of a \$289 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, 2020 and 2019, the Company has recorded a valuation allowance against its net deferred tax assets of \$1,207 and \$2,329, respectively. The valuation allowance is principally related to the losses from a joint venture for which the Company has determined that realization is not more likely than not.

On December 22, 2017, the JOBS 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 JOBS Act in 2018 and has included those effects in *(Provision) benefit 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 JOBS Act.

Additionally, the JOBS 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 JOBS 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, 2020, the Company has accumulated undistributed earnings generated by its foreign subsidiaries of approximately \$427,696, of which \$329,315 was subject to the one-time transition tax on foreign earnings required by the JOBS 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 income (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,		
	2020	2019	2018
Unrecognized tax benefit, beginning of year	\$ 1,763	\$ 638	\$ 872
Tax positions related to prior years:			
Additions	1,436	1,222	80
Reductions	(1,723)	(86)	(39)
Lapse of statute of limitations	(253)	(11)	(275)
Unrecognized tax benefit, end of year	<u>\$ 1,223</u>	<u>\$ 1,763</u>	<u>\$ 638</u>

The amount of unrecognized tax benefits as of December 31, 2020, 2019, and 2018 was \$1,223, \$1,763, and \$638, respectively, of which \$1,175, \$1,733, and \$627, respectively, would impact the Company’s effective tax rate if recognized. Interest expense and penalties related to income taxes resulted in a reduction of income tax expense of \$20 for the year ended December 31, 2020 and an increase of income tax expense of \$101 and \$8 for the years ended December 31, 2019 and 2018, respectively. Interest expense and penalties are included in *(Provision) benefit for income taxes* in the consolidated statements of operations. Accrued interest and penalties as of December 31, 2020 and 2019 totaled \$272, \$362, and \$252, 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 in *Other liabilities* in the consolidated balance sheets.

The Company is subject to income tax in the U.S., as well as numerous state and foreign jurisdictions. The Company settled its audit in the U.K. for years 2014 through 2017. The Company had adequately provided for any adjustments that resulted from the tax examination. The Company is currently under audit in the U.K. for 2018. The Company's 2018 through 2020 tax years remain subject to examination by the Irish Revenue Commissioners for Irish tax purposes. The Company's U.S. consolidated federal income tax returns for years 2017 through 2020 remain subject to examination by the Internal Revenue Service. In addition, the Company is under audit in various other foreign taxing jurisdictions that are not material to the consolidated financial statements.

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 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. For the year ended December 31, 2020, the Company recorded a gain of \$347 in *Other income (expense), net* and total payments recognized in *Interest expense, net* related to the swap were \$696.

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. The call options were not designated as a hedging instrument for accounting purposes. 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 consolidated balance sheets was \$0 as of December 31, 2019. 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, certain other current and long-term 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, 2020 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.

The following tables provide the financial assets and financial liabilities carried at fair value measured on a recurring basis:

December 31, 2020	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds ⁽¹⁾	\$ 34,696	\$ —	\$ —	\$ 34,696
Interest rate swap ⁽²⁾	—	347	—	347
Total assets	\$ 34,696	\$ 347	\$ —	\$ 35,043
Liabilities:				
Acquisition contingent consideration ⁽³⁾	\$ —	\$ —	\$ 4,299	\$ 4,299
Deferred compensation plan ⁽⁴⁾	2,591	—	—	2,591
Cash-settled equity awards ⁽⁵⁾	195	—	—	195
Total liabilities	\$ 2,786	\$ —	\$ 4,299	\$ 7,085
December 31, 2019				
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 consolidated balance sheets.

(2) Included in *Other assets* in the consolidated balance sheet.

(3) Included in *Other liabilities*, except for current liabilities of \$2,884 and \$5,100 as of December 31, 2020 and 2019, respectively, which are included in *Accruals and other current liabilities* in the 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 \$169 and \$153 as of December 31, 2020 and 2019, respectively, which are included in *Accruals and other current liabilities* in the consolidated balance sheets.

(5) Included in *Accruals and other current liabilities* in the consolidated balance sheet.

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, 2020 and 2019.

	Year Ended December 31,	
	2020	2019
Balance, beginning of year	\$ 6,599	\$ 4,316
Payments	(3,425)	(2,513)
Addition	2,380	4,498
Reclassification	—	180
Change in fair value	(1,340)	62
Foreign currency translation adjustments	85	56
Balance, end of year	<u>\$ 4,299</u>	<u>\$ 6,599</u>

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 December 31, 2020, the non-cancelable future cash purchase commitment for services related to the provisioning of the Company's hosted software solutions was \$82,810 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, automobiles, and equipment under operating leases having initial or remaining non-cancelable terms in excess of one year (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, results of operations, or cash flows.

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 Notes 5, 6, and 8).

	December 31,	
	2020	2019
Long-lived assets:		
Americas ⁽¹⁾	\$ 50,306	\$ 34,758
EMEA	56,322	34,039
APAC	13,541	7,148
Total long-lived assets	<u>\$ 120,169</u>	<u>\$ 75,945</u>

(1) Americas includes the U.S., Canada, and Latin America (including the Caribbean).

Note 20: Interest Expense, Net

Interest expense, net is comprised of the following:

	Year Ended December 31,		
	2020	2019	2018
Interest expense	\$ (7,913)	\$ (9,731)	\$ (9,607)
Interest income	437	1,532	842
Total interest expense, net	<u>\$ (7,476)</u>	<u>\$ (8,199)</u>	<u>\$ (8,765)</u>

Note 21: Other Income (Expense), Net

Other income (expense), net is comprised of the following:

	Year Ended December 31,		
	2020	2019	2018
Foreign exchange gain (loss) ⁽¹⁾	\$ 22,919	\$ (5,591)	\$ (418)
Other income (expense), net ⁽²⁾	2,027	34	654
Total other income (expense), net	<u>\$ 24,946</u>	<u>\$ (5,557)</u>	<u>\$ 236</u>

(1) Foreign exchange gain (loss) is primarily attributable to foreign currency translation derived primarily from U.S. Dollar denominated cash and cash equivalents, account receivables, and intercompany balances held by foreign subsidiaries. Intercompany finance transactions denominated in U.S. Dollars resulted in unrealized foreign exchange gains (losses) of \$22,310 and \$(5,270) for the years ended December 31, 2020 and 2019, respectively. 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 17).

(2) Other income (expense), net includes a gain from the change in fair value of the Company's interest rate swap of \$347 and a gain from the change in fair value of acquisition contingent consideration of \$1,340 for the year ended December 31, 2020, respectively (see Note 17). 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.

Note 22: Realignment Costs

During the third quarter of 2020, 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 "2020 Program"). The Company incurred realignment costs of \$10,046 for the year ended December 31, 2020 related to the aforementioned program, which represents termination benefits for colleagues whose positions were eliminated. The 2020 Program activities have been broadly implemented across the Company's various businesses with substantially all actions expected to be completed in early 2021.

Accruals and other current liabilities in the consolidated balance sheets included amounts related to the realignment activities as follows:

	Year Ended December 31,			
	2020			2019
	2020 Program	Prior Program	Total	Prior Program
Balance, beginning of year	\$ —	\$ 491	\$ 491	\$ 6,437
Realignment costs	10,046	(24)	10,022	(584)
Payments	(4,278)	(264)	(4,542)	(5,326)
Adjustments ⁽¹⁾	292	(23)	269	(36)
Balance, end of year	\$ 6,060	\$ 180	\$ 6,240	\$ 491

(1) Adjustments includes foreign currency translation.

Realignment costs by expense classification were as follows:

	Year Ended December 31,		
	2020	2019	2018
Cost of revenues:			
Cost of subscriptions and licenses	\$ 42	\$ (51)	\$ 256
Cost of services	1,422	(185)	845
Total cost of revenues	1,464	(236)	1,101
Operating expenses:			
Research and development	848	(171)	3,380
Selling and marketing	5,945	(263)	2,252
General and administrative	1,765	86	45
Total operating expenses	8,558	(348)	5,677
Total realignment costs	\$ 10,022	\$ (584)	\$ 6,778

Note 23: 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. As of December 31, 2020, 2019, and 2018, there were 149,754, 321,126, and 198,242 participating securities outstanding, respectively.

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, inclusive of undistributed shares of the Company’s Class B Common Stock held in the DCP as phantom shares.

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 net income attributable to common stockholders by the weighted average number of fully diluted common shares outstanding.

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,		
	2020	2019	2018
Numerator:			
Net income	\$ 126,521	\$ 103,096	\$ 142,112
Less: Net income attributable to participating securities	(234)	(8)	(4)
Net income attributable to Class A and Class B common stockholders	<u>\$ 126,287</u>	<u>\$ 103,088</u>	<u>\$ 142,108</u>
Denominator:			
Denominator for basic net income per share—weighted average shares	289,863,272	284,625,642	285,805,096
Effect of dilutive securities	9,507,857	9,171,065	6,819,400
Denominator for dilutive net income per share—weighted average shares	<u>299,371,129</u>	<u>293,796,707</u>	<u>292,624,496</u>
Net income per share, basic	<u>\$ 0.44</u>	<u>\$ 0.36</u>	<u>\$ 0.50</u>
Net income per share, diluted	<u>\$ 0.42</u>	<u>\$ 0.35</u>	<u>\$ 0.49</u>

No shares were excluded from the computation of diluted net income per share attributable to common stockholders for the years ended December 31, 2020, 2019, and 2018.

Note 24: Selected Quarterly Financial Information (Unaudited)

Selected quarterly financial information for the years ended December 31, 2020 and 2019 are as follows (in thousands, except per share amounts):

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total Year
2020					
Total revenues	\$ 194,690	\$ 184,290	\$ 202,997	\$ 219,567	\$ 801,544
Gross profit	157,431	147,585	160,369	169,004	634,389
Income from operations	45,961	44,591	5,323 ⁽²⁾	54,275	150,150
Provision for income taxes	7,176	4,264	10,705	16,480	38,625
Net income	\$ 29,669	\$ 39,076	\$ 5,844 ⁽²⁾	\$ 51,932	\$ 126,521
Net income per share, basic ⁽¹⁾	\$ 0.10	\$ 0.14	\$ 0.02 ⁽²⁾	\$ 0.17	\$ 0.44
Net income per share, diluted ⁽¹⁾	\$ 0.10	\$ 0.13	\$ 0.02 ⁽²⁾	\$ 0.17	\$ 0.42
2019					
Total revenues	\$ 177,539	\$ 169,605	\$ 186,588	\$ 202,922	\$ 736,654
Gross profit	144,972	132,974	151,537	163,021	592,504
Income from operations	38,290	19,468	41,402	42,705	141,865
Provision for income taxes	4,318	801	6,640	11,979	23,738
Net income	\$ 26,437	\$ 19,981	\$ 20,427	\$ 36,251	\$ 103,096
Net income per share, basic ⁽¹⁾	\$ 0.09	\$ 0.07	\$ 0.07	\$ 0.13	\$ 0.36
Net income per share, diluted ⁽¹⁾	\$ 0.09	\$ 0.07	\$ 0.07	\$ 0.13	\$ 0.35

(1) Net income per share was computed independently for each of the periods presented; therefore the sum of the net income per share amount for the quarters may not equal the total year.

(2) During the third quarter of 2020, the Company recorded \$15,445 total pre-tax stock-based compensation expense related to the restricted stock and RSUs that vested as a result of the IPO and \$26,130 of pre-tax expenses associated with the IPO.

Note 25: Subsequent Events

Bank Credit Facility — On January 25, 2021, the Company entered into an amended and restated credit agreement, which matures on November 15, 2025 (the “New Credit Facility”). Upon entry into the New Credit Facility, the Company obtained a \$850,000 senior secured revolving facility and refinanced all indebtedness outstanding under its Credit Facility (see Note 10).

Convertible Debt — On January 26, 2021, the Company completed an offering of \$690,000 of 0.125% convertible senior notes due 2026 (the “2026 Notes”). Interest will accrue from January 26, 2021 and will be payable twice a year with the first payment due on July 15, 2021. The Company used \$25,530 of the net proceeds from the sale of the 2026 Notes to pay the cost of the capped call transactions described further below and approximately \$250,500 to repay outstanding indebtedness under the Credit Facility and to pay related fees and expenses. The Company intends to use the remainder of the net proceeds from the sale of the 2026 Notes for general corporate purposes, which may include funding future acquisitions. The Company may apply all or a portion of the net proceeds for the acquisition of businesses, software solutions, and technologies that the Company believes are complementary to its own, although the Company has no agreements, commitments, or understandings with respect to any specific material acquisition at this time. The Company has not allocated any specific portion of the net proceeds to any particular purpose and its management will have the discretion to allocate the proceeds as it determines.

The Company incurred \$18,030 of expenses in connection with the 2026 Notes offering consisting of the payment of underwriting discounts and commissions, professional fees, and other expenses.

Noteholders may convert all or a portion of their 2026 Notes at their option only in the following circumstances: (1) during any calendar quarter (and only during such quarter) commencing after the calendar quarter ending on June 30, 2021, if the last reported sale price per share of the Company’s Class B Common Stock exceeds 130% of the conversion price for each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter; (2) during the five consecutive business days immediately after any ten consecutive trading day period (such ten consecutive trading day period, the “measurement period”) in which the trading price per \$1 principal amount of 2026 Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price per share of the Company’s Class B Common Stock on such trading day and the conversion rate on such trading day; (3) upon the occurrence of certain corporate events or distributions on the Company’s Class B Common Stock, as described in the offering memorandum; (4) if the Company calls the 2026 Notes for redemption; and (5) at any time from, and including, October 15, 2025 until the close of business on the second scheduled trading day immediately before the maturity date. The Company will settle conversions by paying or delivering, as applicable, cash, shares of the Company’s Class B Common Stock or a combination of cash and shares of the Company’s Class B Common Stock, at the Company’s election, based on the applicable conversion rate. The initial conversion rate is 15.5925 shares of the Company’s Class B Common Stock per \$1 principal amount of 2026 Notes, which represents an initial conversion price of approximately \$64.13 per share, and is subject to adjustment as described in the offering memorandum. If a “make-whole fundamental change” (as defined in the offering memorandum) occurs, then the Company will, in certain circumstances, increase the conversion rate for a specified period of time.

The 2026 Notes will be redeemable, in whole or in part, at the Company’s option at any time, and from time to time, on or after January 20, 2024 and on or before the 40th scheduled trading day immediately before the maturity date, at a cash redemption price equal to the principal amount of the 2026 Notes to be redeemed, plus accrued and unpaid interest, if any, but only if the last reported sale price per share of the Company’s Class B Common Stock exceeds 130% of the conversion price on (1) each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the trading day immediately before the date the Company’s sends the related redemption notice; and (2) the trading day immediately before the date the Company sends such notice. In addition, calling any 2026 Note for redemption will constitute a make-whole fundamental change with respect to that 2026 Note, in which case the conversion rate applicable to the conversion of that 2026 Note will be increased in certain circumstances if it is converted after it is called for redemption and prior to the close of business on the second business day immediately before the related redemption date.

In connection with the pricing of the 2026 Notes, the Company entered into capped call transactions with certain of the initial purchasers or their respective affiliates and certain other financial institutions (the “option counterparties”). The capped call transactions are expected generally to reduce potential dilution to the Company’s Class B Common Stock upon any conversion of 2026 Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of converted notes, as the case may be, with such reduction and/or offset subject to a cap. The cap price of the capped call transactions will initially be \$72.9795 per share, which represents a premium of 65% above the last reported sale price per share of the Company’s Class B Common Stock on the Nasdaq Global Select Market on January 21, 2021 and is subject to customary adjustments under the terms of the capped call transactions.

**DESCRIPTION OF BENTLEY SYSTEMS INCORPORATED'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES
EXCHANGE ACT OF 1934**

Bentley Systems, Incorporated Inc. (“we,” “our,” or “us”) has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), our Class B common stock, \$0.01 par value per share. The following description of our capital stock is a summary and does not purport to be complete. It is qualified in its entirety by, and should be read in conjunction with, our amended and restated certificate of incorporation, our amended and restated bylaws and applicable Delaware law.

Authorized Capital Stock

Our authorized capital stock consists of 2,000,000,000 shares, each with a par value of \$0.01 per share, of which:

- 100,000,000 shares are designated as Class A common stock;
- 1,800,000,000 shares are designated as Class B common stock; and
- 100,000,000 shares are undesignated preferred stock.

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.

Voting Rights

The holders of our Class A common stock are entitled to 29 votes per share, provided, however, that at any such time, and thereafter, as none of Barry J. Bentley, Gregory S. Bentley, Keith A. Bentley, or Raymond B. Bentley 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. Holders of our Class B common stock, which is the only class that is publicly traded and listed, is 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 our capital stock 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 Bentley Family (as defined below) ceases 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.

"Bentley Family" means Barry J. Bentley, Gregory S. Bentley, Keith A. Bentley, Raymond B. Bentley, Richard P. Bentley (collectively, the "Bentleys") and certain other family members and trusts and other entities controlled by or primarily for the benefit of the Bentleys and their families.

Anti-Takeover Provisions

The provisions of our amended and restated certificate of incorporation and amended and restated by-laws and of the Delaware General Corporation Law (“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.

Section 203 of the Delaware General Corporation Law

We have opted out of Section 203 of the DGCL. However, our amended and restated certificate of incorporation contains provisions that are similar to Section 203. Specifically, our amended and restated certificate of incorporation provides 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 Bentley Family and any of their respective direct or indirect transferees receiving 15% 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 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 Bentley Family ceases 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 does 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 $\frac{2}{3}$ % of the voting power of the capital stock of the corporation. In addition, the affirmative vote of the holders of at least 66 $\frac{2}{3}$ % 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 of 1933, as amended, 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.

Listing

Our Class B common stock is listed on The Nasdaq Global Select Market under the symbol “BSY.” Our Class A common stock is not and 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.

LIST OF SUBSIDIARIES OF REGISTRANT

AS OF DECEMBER 31, 2020

Name of Subsidiary	Jurisdiction of Incorporation or Organization
Bentley Canada Inc.	Ontario
Bentley Engineering Software Systems (Shanghai) Co. Ltd.	China
Bentley Engineering Software Systems (Shanghai) Co. Ltd.-Dalian Branch	China
Bentley Engineering Software Systems (Shanghai) Co., Limited - Xi'an Branch	China
Bentley Engineering Software Systems (Shanghai) Co., Ltd.-Beijing Branch	China
Bentley Software International Limited	Ireland
Bentley Software Solutions Philippines Inc.	Philippines
Bentley Software, Inc.	Delaware
Bentley Systems (Beijing) Co., Ltd	China
Bentley Systems (Beijing) Co., Ltd-Guangzhou Branch	China
Bentley Systems (Malaysia) Sdn. Bhd.	Malaysia
Bentley Systems (New Zealand) Limited	New Zealand
Bentley Systems (UK) Ltd	United Kingdom
Bentley Systems AG	Switzerland
Bentley Systems Austria GmbH	Austria
Bentley Systems Aviation, LLC	Pennsylvania
Bentley Systems Brasil Ltda.	Brazil
Bentley Systems Co. Ltd.	Japan
Bentley Systems Coop Holdings, LLC	Delaware
Bentley Systems CR s.r.o.	Czech Republic
Bentley Systems de Mexico SA de CV	Mexico
Bentley Systems Europe B.V	The Netherlands
Bentley Systems Europe B.V. Filialas	Lithuania
Bentley Systems Europe B.V. Jordan	Jordan
Bentley Systems Europe B.V.-Dubai Branch	Dubai
Bentley Systems Finland Oy	Finland
Bentley Systems France S.a.r.l.	France
Bentley Systems Germany GmbH	Germany
Bentley Systems Hong Kong Ltd.	Hong Kong
Bentley Systems Iberica S.A.	Spain
Bentley Systems India Private Limited	India
Bentley Systems International Development Limited	Ireland
Bentley Systems International Holdings, Inc.	Delaware
Bentley Systems International Limited	Ireland
Bentley Systems International Limited - Portuguese Branch	Portugal
Bentley Systems International Limited - Slovakia Branch	Slovakia

Name of Subsidiary	Jurisdiction of Incorporation or Organization
Bentley Systems International Limited-Chilean Branch	Chile
Bentley Systems International Limited-Qatar Branch	Qatar
Bentley Systems International Limited-Saudi Branch	Saudi Arabia
Bentley Systems Italia S.r.l.	Italy
Bentley Systems Korea Inc.	Korea
Bentley Systems Netherlands B.V.	The Netherlands
Bentley Systems Pakistan (Pvt.) Ltd.	Pakistan
Bentley Systems Polska Sp z o.o.	Poland
Bentley Systems Pty. Ltd.	Australia
Bentley Systems Romania S.R.L.	Romania
Bentley Systems Russia (OOO)	Russian Federation
Bentley Systems Scandinavia A/S	Denmark
Bentley Systems Scandinavia NUF	Norway
Bentley Systems Singapore Pte. Ltd.	Singapore
Bentley Systems Software Solutions LLC Turkey (Bentley Systems Yazılım Çözümleri Limited Şirketi)	Turkey
Bentley Systems Solutions B.V.B.A	Belgium
Bentley Systems South Africa (Pty) Ltd.	South Africa
Bentley Systems Sweden AB	Sweden
Bentley Systems, Incorporated, Taiwan	Taiwan
BSI Holding GmbH	Austria
BSI Holdings B.V.	Netherlands
BSI Holdings Pty. Ltd.	Australia
BSI International Holdings Coöperatief U.A.	Netherlands
Business Collaborator Limited	England
C3 Global Ltd.	United Kingdom
Citilabs Asia PTE LTD.	Singapore
Citilabs Inc.	Delaware
Cohesive Solutions, LLC,	Georgia
Digital Water Works Incorporated	Delaware
E-ON Software SARL	France
Engineering Construction Strategies Limited	United Kingdom
Keynetix Ltd	United Kingdom
Orbit Geospatial Technologies NV	Belgium
Orbit GT Asia PTE. LTD,	Singapore
Plaxinvest BV	Netherlands
Plaxis bv	Netherlands
Plaxis Services bv	Netherlands
Professional Construction Strategies Group Limited	United Kingdom
Professional Construction Strategies Group Limited - Australia Branch	Australia
Professional Construction Strategies Group Limited - Hong Kong Branch	Hong Kong

Name of Subsidiary	Jurisdiction of Incorporation or Organization
Professional Construction Strategies Limited	United Kingdom
SRO Solutions Holdings Limited	United Kingdom
SRO Solutions Limited	United Kingdom
USAssets bv	Netherlands

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Bentley Systems, Incorporated:

We consent to the incorporation by reference in the registration statement on Form S-8 (No. 333-249004) of Bentley Systems, Incorporated of our report dated March 2, 2021, with respect to the consolidated balance sheets of Bentley Systems, Incorporated as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes, which report appears in the December 31, 2020 annual report on Form 10-K of Bentley Systems, Incorporated.

Our report refers to changes in accounting principle for revenue from contracts with customers, sales commissions, and leases.

/s/ KPMG LLP

Philadelphia, Pennsylvania
March 2, 2021

**Management Certification Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002**

I, Gregory S. Bentley, certify that:

1. I have reviewed this annual report on Form 10-K of Bentley Systems, Incorporated (the “registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) [Paragraph omitted in accordance with Exchange Act Rule 13a-14(a)];
 - c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: March 2, 2021

/s/ GREGORY S. BENTLEY

Gregory S. Bentley
Chief Executive Officer
(Principal Executive Officer)

**Management Certification Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002**

I, David J. Hollister, certify that:

1. I have reviewed this annual report on Form 10-K of Bentley Systems, Incorporated (the “registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) [Paragraph omitted in accordance with Exchange Act Rule 13a-14(a)];
 - c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: March 2, 2021

/s/ DAVID J. HOLLISTER

David J. Hollister
Chief Financial Officer
(Principal Financial Officer)

**Certification of CEO and CFO Pursuant to
18 U.S.C. Section 1350,
as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the Annual Report of Bentley Systems, Incorporated (the “Company”) on Form 10-K for the year ended December 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), each of the undersigned officers of the Company certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to his knowledge:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 2, 2021

/s/ GREGORY S. BENTLEY

Gregory S. Bentley
Chief Executive Officer
(Principal Executive Officer)

/s/ DAVID J. HOLLISTER

David J. Hollister
Chief Financial Officer
(Principal Financial Officer)