VERINT SYSTEMS INC
Form 10-K
March 28, 2019

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended January 31, 2019

Commission File No. 001-34807
Verint Systems Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware	11-3200514
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)

175 Broadhollow Road, Melville, New York	11747
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: (631) 962-9600
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, $.001 par value per share	The NASDAQ Stock Market, LLC (NASDAQ Global Select Market)

Securities registered pursuant to Section 12(g) of the Act:
None
(Title of Class)
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes þ No o
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes o No þ
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 þ No o
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 þ No o
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. þ
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 þ Accelerated filer o
Non-accelerated filer o Smaller reporting company o
Emerging growth company o

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. o

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

The aggregate market value of common stock held by non-affiliates of the registrant, based on the closing price for the registrant's common stock on the NASDAQ Global Select Market on the last business day of the registrant's most recently completed second fiscal quarter (July 31, 2018) was approximately $2,898,954,000.

There were 65,332,546 shares of the registrant's common stock outstanding on March 15, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this report, to the extent not set forth herein, is incorporated herein by reference from the registrant's definitive proxy statement relating to the Annual Meeting of Stockholders to be held in 2019, which definitive proxy statement shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

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As of and For the Year Ended January 31, 2019

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Cautionary Note on Forward-Looking Statements

This Annual Report on Form 10-K contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, the provisions of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Forward-looking statements include financial projections, statements of plans and objectives for future operations, statements of future economic performance, and statements of assumptions relating thereto. Forward-looking statements may appear throughout this report, including without limitation, in Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and are often identified by future or conditional words such as “will”, “plans”, “expects”, “intends”, “believes”, “seeks”, “estimates”, or “anticipates”, or by variati such words or by similar expressions. There can be no assurance that forward-looking statements will be achieved. By their very nature, forward-looking statements involve known and unknown risks, uncertainties, assumptions, and other important factors that could cause our actual results or conditions to differ materially from those expressed or implied by such forward-looking statements. Important risks, uncertainties, assumptions, and other factors that could cause our actual results or conditions to differ materially from our forward-looking statements include, among others:

- uncertainties regarding the impact of general economic conditions in the United States and abroad, particularly in information technology spending and government budgets, on our business;
- risks associated with our ability to keep pace with technological changes, evolving industry standards and challenges, to adapt to changing market potential from area to area within our markets, and to successfully develop, launch, and drive demand for new, innovative, high-quality products that meet or exceed customer needs, while simultaneously preserving our legacy businesses and migrating away from areas of commoditization;
- risks due to aggressive competition in all of our markets, including with respect to maintaining revenues, margins, and sufficient levels of investment in our business and operations;
- risks created by the continued consolidation of our competitors or the introduction of large competitors in our markets with greater resources than we have;
- risks associated with our ability to successfully compete for, consummate, and implement mergers and acquisitions, including risks associated with valuations, reputational considerations, capital constraints, costs and expenses, maintaining profitability levels, expansion into new areas, management distraction, post-acquisition integration activities, and potential asset impairments;
- risks relating to our ability to properly manage investments in our business and operations, execute on growth initiatives, and enhance our existing operations and infrastructure, including the proper prioritization and allocation of limited financial and other resources;
- risks associated with our ability to retain, recruit, and train qualified personnel in regions in which we operate, including in new markets and growth areas we may enter;
- risks that we may be unable to establish and maintain relationships with key resellers, partners, and systems integrators and risks associated with our reliance on third-party suppliers, partners, or original equipment manufacturers (“OEMs”) for certain components, products, or services, including companies that may compete with us or work with our competitors;
- risks associated with the mishandling or perceived mishandling of sensitive or confidential information, including information that may belong to our customers or other third parties, and with security vulnerabilities or lapses, including cyber-attacks, information technology system breaches, failures, or disruptions;
- risks that our products or services, or those of third-party suppliers, partners, or OEMs which we use in or with our offerings or otherwise rely on, including third-party hosting platforms, may contain defects, develop operational problems, or be vulnerable to cyber-attacks;
- risks associated with our significant international operations, including, among others, in Israel, Europe, and Asia, exposure to regions subject to political or economic instability, fluctuations in foreign exchange rates, and challenges associated with a significant portion of our cash being held overseas;

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- risks associated with political factors related to our business or operations, including reputational risks associated with our security solutions and our ability to maintain security clearances where required as well as risks associated with a significant amount of our business coming from domestic and foreign government customers;
- risks associated with complex and changing local and foreign regulatory environments in the jurisdictions in which we operate, including, among others, with respect to trade compliance, anti-corruption, information security, data privacy and protection, tax, labor, government contracts, relating to both our own operations as well as the use of our solutions by our customers;
- challenges associated with selling sophisticated solutions, including with respect to assisting customers in understanding and realizing the benefits of our solutions, and developing, offering, implementing, and maintaining a broad and sophisticated solution portfolio;
- challenges associated with pursuing larger sales opportunities, including with respect to longer sales cycles, transaction reductions, deferrals, or cancellations during the sales cycle, risk of customer concentration, our ability to accurately forecast when a sales opportunity will convert to an order, or to forecast revenue and expenses, and increased volatility of our operating results from period to period;
- risks that our intellectual property rights may not be adequate to protect our business or assets or that others may make claims on our intellectual property, claim infringement on their intellectual property rights, or claim a violation of their license rights, including relative to free or open source components we may use;
- risks that our customers or partners delay or cancel orders or are unable to honor contractual commitments due to liquidity issues, challenges in their business, or otherwise;
- risks that we may experience liquidity or working capital issues and related risks that financing sources may be unavailable to us on reasonable terms or at all;
- risks associated with significant leverage resulting from our current debt position or our ability to incur additional debt, including with respect to liquidity considerations, covenant limitations and compliance, fluctuations in interest rates, dilution considerations (with respect to our convertible notes), and our ability to maintain our credit ratings;
- risks arising as a result of contingent or other obligations or liabilities assumed in our acquisition of our former parent company, Comverse Technology, Inc. (“CTI”), or associated with formerly being consolidated with, and part of a consolidated tax group with, CTI, or as a result of the successor to CTI’s business operations, Mavenir Inc. (“Mavenir”), being unwilling or unable to provide us with certain indemnities to which we are entitled;
- risks relating to the adequacy of our existing infrastructure, systems, processes, policies, procedures, and personnel and our ability to successfully implement and maintain enhancements to the foregoing and adequate systems and internal controls for our current and future operations and reporting needs, including related risks of financial statement omissions, misstatements, restatements, or filing delays;
- risks associated with changing accounting principles or standards, tax laws and regulations, tax rates, and the continuing availability of expected tax benefits; and
- risks associated with market volatility in the prices of our common stock and convertible notes based on our performance, third-party publications or speculation, or other factors.

These risks, uncertainties, assumptions, and challenges, as well as other factors, are discussed in greater detail in “Risk Factors” under Item 1A of this report. You are cautioned not to place undue reliance on forward-looking statements, which reflect our management’s view only as of the date of this report. We make no commitment to revise or update any forward-looking statements in order to reflect events or circumstances after the date any such statement is made, except as otherwise required under the federal securities laws. If we were in any particular instance to update or correct a forward-looking statement, investors and others should not conclude that we would make additional updates or corrections thereafter except as otherwise required under the federal securities laws.

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PART I

Item 1. Business

Our Company

Verint® Systems Inc. (together with its consolidated subsidiaries, “Verint”, the “Company”, “we”, “us”, and “our”, unless the context indicates otherwise) is a global leader in Actionable Intelligence® solutions.

In a world of massive information growth, our solutions empower organizations with crucial, actionable insights and enable decision makers to anticipate, respond, and take action. Today, over 10,000 organizations in more than 180 countries, including over 85 percent of the Fortune 100, use Verint’s Actionable Intelligence solutions, deployed in the cloud and on premises, to make more informed, timely, and effective decisions.

Our Actionable Intelligence leadership is powered by innovative, enterprise-class software built with artificial intelligence, analytics, automation, and deep domain expertise established by working closely with some of the most sophisticated and forward-thinking organizations in the world. We believe we have one of the industry’s strongest research and development (“R&D”) teams focused on actionable intelligence consisting of approximately one-third of our approximately 6,100 professionals. Our innovative solutions are backed-up by a strong IP portfolio with close to 1,000 patents and patent applications worldwide across data capture, artificial intelligence, machine learning, unstructured data analytics, predictive analytics and automation.

Headquartered in Melville, New York, we support our customers around the globe directly and with an extensive network of selling and support partners.

Company Background

We were incorporated in Delaware in February 1994 and completed our initial public offering (“IPO”) in May 2002. Since our formation, we have consistently expanded our portfolio of Actionable Intelligence solutions, extended our market leadership, and scaled the business through focus on innovation via a combination of organic development and acquisitions.

Verint’s Actionable Intelligence strategy is focused on two use cases and the company has two operating segments: Customer Engagement Solutions™ (“Customer Engagement”) and Cyber Intelligence Solutions™ (“Cyber Intelligence”). Our two operating segments are described in greater detail below and in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under Item 7 of this report. See also Note 16 to our consolidated financial statements, “Segment, Geographic, and Significant Customer Information,” included under Item 8 of this report for additional information and financial data about each of our operating segments and geographic regions.

Through our website at www.verint.com, we make available our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, as well as amendments to those reports, filed or furnished by us pursuant to Section 13(a) or Section 15(d) of the Exchange Act, free of charge, as soon as reasonably practicable after we file such materials with, or furnish such materials to, the Securities and Exchange Commission (“SEC”). Our website address set forth above is not intended to be an active link, and information on our website is not incorporated in, and should not be construed to be a part of, this report.

Our Actionable Intelligence Strategy

We focus on two Actionable Intelligence use cases: Actionable Intelligence for a Smarter Enterprise and Actionable Intelligence for a Safer World. Our customers across both use cases are looking for innovative solutions that incorporate the most advanced technologies to empower them with actionable insights, critical to achieving their strategic objectives. Our strategy is to combine the latest artificial intelligence, analytics, and automation technology with the deep domain expertise that is unique to each of our markets. We have invested more than $1 billion in R&D over the last decade in our highly innovative Actionable Intelligence platform, which provides a foundation for our solution portfolio across both use cases. This platform can be described along three key pillars:

- Data Capture and Fusion. Enables the capture of a wide range of structured and unstructured data, such as operational, transactional, network, web, and social data. It also enables data fusion from multiple sources, different systems, and numerous environments.

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- Data Analysis and Artificial Intelligence. Facilitates a wide range of algorithms for data analytics and automation, including classification, correlation, anomaly detection, identity extraction, behavioral analysis, artificial intelligence, and predictive analytics. Artificial Intelligence plays an increasingly important role in automating the capture and analytics process to reveal actionable insights in the data.

- Data Visualization and Actionable Insights. Supports multiple use cases across Customer Engagement and Cyber Intelligence. Actionable insights are generated from massive amounts of data and are distributed to decision makers based on the specific use case and end-user operational scenarios.

Our strategy is to continue to grow our business across both Actionable Intelligence use cases, leveraging our investment in our Actionable Intelligence platform and continuing to invest in artificial intelligence and analytics to drive automation and to create technology differentiation. We will also continue to expand our broad portfolios through innovative technology, combined with further developing our domain expertise in both Customer Engagement and Cyber Intelligence. We believe that the combination of a strong technology platform and deep knowledge of our customers has been, and will continue to be, key to our leadership in the actionable intelligence market.

Customer Engagement Solutions

Overview

Organizations have cited effective customer engagement as a key to creating sustainable competitive advantage and as critical to their future success. As a result, many are making it a priority to invest in new customer engagement technologies that can elevate the customer experience, and at the same time reduce operating cost.

As The Customer Engagement Company,™ Verint is an established global leader in cloud and automation solutions for customer engagement with over two decades of experience helping organizations worldwide achieve their strategic objectives. Our strategy is to help organizations elevate customer experience and at the same time reduce operating cost by simplifying, modernizing, and automating customer engagement across the enterprise.

For most organizations, customer engagement is no longer just a contact center function. It has become a responsibility shared across many parts of the enterprise. To support the needs of our customers, we offer a broad portfolio of customer engagement solutions that address requirements throughout the enterprise, including contact centers, back-office and branch operations, self-service, ecommerce, customer experience, marketing, IT, and compliance.

Verint is a leader in cloud and automation solutions in Customer Engagement™ with one of the broadest portfolios available, including offerings for Workforce Engagement, Self-Service, Voice of the Customer, and Compliance and Fraud. We leverage the latest in artificial intelligence (AI) and advanced analytics technology to unlock the potential of automation and intelligence to drive real business impact across the enterprise. We offer organizations a smooth transition to the cloud, and through our hybrid models, organizations can deploy our solutions using a public cloud (SaaS), private cloud, and/or perpetual license approach, as well as combinations of these models. Independent industry experts, such as Forrester, Gartner, and Ventana Research, have all recognized Verint as a leader in customer engagement.

We have more than 10,000 customers and a large partner network globally, helping us drive ongoing innovation in our award-winning offerings. We focus on developing customers for life, and have been recognized as a "CRM Service Winner" for 11 consecutive years. Verint has also been named a winner on the 2019 CRM Watchlist, which recognizes companies that had the greatest impact in the world of customer-facing technology in the prior year.

Trends

Many organizations are facing complex, dated, and mostly disparate environments in their legacy customer engagement operations that make it challenging to deliver on the promise of an exceptional customer experience. Faced with higher customer expectations and the need for market differentiation, organizations view customer engagement and elevating the customer experience as essential to their future success. To elevate customer experience, many organizations are faced with the need to grow their workforce and find the resulting increase in operating cost unsustainable. As a result, they are looking to invest in new customer engagement technologies that can elevate the customer experience, while reducing operating cost. We believe the following trends are driving growth in our market as organizations seek to:

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- Reduce Complexity and Become More Agile to Adapt Faster. Many organizations have complex environments that were assembled over many years with multiple legacy systems from many different vendors deployed in silos across the enterprise. To reduce complexity and simplify operations, these organizations are looking for new solutions that are open and flexible and make it easier to address evolving requirements, while protecting their legacy investments. Organizations are also seeking open platforms that address their customer engagement needs across many enterprise functions, including the contact center, back-office and branch operations, self-service, ecommerce, customer experience, marketing, IT, and compliance.

- Modernize Customer Engagement IT Architectures. Many organizations are looking to modernize their legacy customer engagement operations by transitioning to the cloud, adopting modern architectures that facilitate the orchestration of disparate systems and the sharing of data across enterprise functions. Organizations which are at different stages of migrating to the cloud and other modernization initiatives are also looking for vendors that can help them evolve customer engagement at their own pace with minimal disruption to their operations.

- Automate Customer Engagement Operations. Many organizations are seeking solutions that incorporate artificial intelligence and analytics to reduce manual work and increase workforce efficiency through automation. They also seek to empower their customers with self-service backed by AI-powered bots, and human/bot collaboration, to elevate the customer experience in a fast, personalized way.

Our Strategy

Our strategy was designed working closely with our customers, which include more than 85 percent of the Fortune 100, as well as with our large global partner network. This strategy, as outlined below, is intended to enable organizations to simplify, modernize, and automate their customer engagement operations and turn customer engagement into a sustainable competitive advantage, while reducing complexity and cost in customer operations.

- Simplifying Customer Engagement. We offer solutions that are open, easy to deploy, and simple to use. Our open portfolio is designed to integrate into organizations' current and evolving technology environments and to share data seamlessly across the organization. This enables customers to protect their existing investments, as they can "start anywhere" within the Verint portfolio based on their business-specific requirements and expand over time. Our open portfolio is also compatible with leading providers of call center communications solutions, providing organizations flexibility to select the most suitable communications solution for their contact centers, while leveraging Verint's portfolio for elevating the customer experience and reducing cost. We believe this compatibility is particularly important now as the contact center communications market is going through change with new entrants offering disruptive approaches to communications.

- Modernizing Customer Engagement. We offer organizations a smooth transition to the cloud, and through our hybrid cloud model, they can deploy solutions from our portfolio in public cloud (SaaS), private cloud and perpetual license models, or combinations of these. Our API-rich portfolio provides organizations the ability to easily share data across the enterprise and integrate with third-party applications. Our modern and open portfolio also makes our solutions compatible with IT initiatives for modernizing enterprise architectures.

- Automating Customer Engagement. We enable organizations to draw on the power of automation to reduce repetitive, manual tasks, increase employee efficiency, and lower cost. Our strategy is to infuse automation capabilities throughout our solution portfolio to enable employees to focus on more strategic work, empower consumers with AI bots so they can serve themselves, and support human/bot collaboration. Our automation capabilities deliver intelligence and context in real-time, reduce errors in manual work, ensure adherence to compliance requirements, and enable customer experiences that are faster, personalized, and more enjoyable.

Our Offerings

For most organizations, customer engagement is no longer just a contact center function, it is a responsibility shared across the entire enterprise. To support the needs of our customers, we offer a broad portfolio across a wide spectrum of customer engagement functions. Our solutions address requirements across contact centers, back-office and branch operations, self-service, ecommerce, customer experience, marketing, IT, and compliance functions. Our offerings span the following categories: Workforce Engagement, Self-Service, Voice of the Customer, and Compliance and Fraud.

- Workforce Engagement

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Our Workforce Engagement offerings enable organizations to empower the workforce to engage with customers effectively in the contact center and in back-office and branch operations. These solutions empower employees and managers with modern tools to simplify their jobs, easily access and share knowledge, reduce costs, increase revenue, and orchestrate the delivery of exceptional experiences across all engagement channels.

- Self-Service

Our Self-Service offerings enable organizations to improve customer experiences and reduce costs by delivering automated help to their customers that's faster and requires less effort. These solutions help make customer self-service as simple and effective as assisted service. Leveraging the same intelligence that empowers employees, self-service bots enable customers to succeed at helping themselves, and create a modern, conversational experience that is consistent across voice and digital channels.

- Voice of the Customer

Our Voice of the Customer (VoC) offerings enable organizations to improve customer experiences and reduce costs by effectively listening, analyzing, and acting on customer intelligence to drive desired customer and business outcomes. These solutions measure and improve experiences, satisfaction, and loyalty, and they provide feedback to drive improvements in operational processes. Within our VoC solution set, we offer a unique science-driven methodology that helps business leaders make better decisions and prioritize where to invest limited resources across the customer journey. And with benchmarks across more than 800 industries and subcategories, we allow companies to benchmark their customer experience over time, against their peers, and against best in class. Our VoC offerings are deployed across the organization by functions including, customer support, marketing, customer experience, and others.

- Compliance and Fraud

Our Compliance and Fraud offerings enable organizations to avoid fines and minimize fraud. Our Compliance solutions support regulatory requirements, such as the General Data Protection Regulation (GDPR), in contact centers, financial trading compliance, emergency response operations, and other environments. Our Fraud solutions help investigate and mitigate the risk of contact center identity fraud, branch banking fraud, and self-service systems fraud.

All our products are available in the cloud and offered in a hybrid cloud model for maximum customer flexibility. Our cloud strategy is to help customers transition to the cloud at their own pace. Our cloud offering scales from SMB to very large enterprise customers with cloud deployments in many countries around the world.

We offer our customers solutions that are comprised of one or more of the following products (listed in alphabetical order):

Product Name	Description
Automated Quality Management	Automates the entire quality management (QM) process, from scoring evaluations to assigning coaching. Delivers consistent, calibrated scoring and new levels of employee performance and transparency, bringing a modern, employee-empowering, and cost-effective approach to QM.
Automated Verification	Automates testing and verification of systems across multiple applications (e.g., ACD, IVR, recording, desktop applications, routers, firewalls) to ensure optimum operation. Actively checks systems for issues and proactively simulates user transactions to validate performance. Provides enhanced control and awareness of system health, status, and performance to avoid issues with service availability, data integrity, and data breaches.
Branch Surveillance and	Helps financial institutions, retailers, and other organizations identify security threats and vulnerabilities, mitigate risk, ensure operational compliance, and improve fraud investigations.

Investigation	Offers real-time intelligence and protection to enhance the customer experience, while safeguarding people, property, and assets. Features video recording and analytics to heighten protection, improve performance, reduce costs, and provide rapid action/response when required.

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Case Management	Allows organizations to automate and adapt business processes rapidly in response to changing market and customer requirements. Tracks the progress of customer and internal issues as they are resolved between various parties in the organization, helping deliver end-to-end case lifecycle management using business rules and service level agreements (SLAs).
Chat Engagement	Enables employees to help online customers in real-time. Provides customers with a quick, easy way to communicate with customer service employees via a simple text interface, and helps employees rapidly address needs and decrease abandonment of online transactions. Guides customers through online processes using chat in conjunction with co-browsing.
Coaching/Learning	Provides a framework for consistent, performance-based mentoring of employees by supervisors and the automated delivery of training right to the employee desktop. Can be scheduled at the best times to minimize impact on service levels, and enable employees to engage and improve their skills on-demand.
Compliance Recording	Reliably and securely captures, encrypts, archives, searches, and replays interactions for compliance and liability protection. Enables organizations and employees to protect credit card data and personal information (data compliance), adhere to rules for recording and telemarketing practices (communications compliance), proactively address complaints, and help prevent identity theft.
Customer Communities	Enables organizations to establish and manage online communities for their customers and partners to support social customer service, digital marketing, and engagement. Fosters self-service, knowledge sharing, collaboration, and networking through peer-to-peer support forums, communications blogs, and online resources, such as discussion forums, product documentation, and how-to videos.
Desktop and Process Analytics	Provides organizations with visibility into how employees use different systems, applications, and processes to perform their functions. Helps identify opportunities to improve business processes, increase employee productivity and capacity, enhance compliance, and heighten the overall efficiency, cost, and quality of customer service.
Digital Feedback	Features an enterprise solution that captures customer-initiated feedback via web and mobile channels during key moments in the customer journey, and empowers organizations to analyze and act in real-time on that feedback to deliver demonstrable business value.
Email Engagement	Automates the process of capturing, documenting, interpreting, and routing emails, helping organizations respond to customers quickly and consistently. Routes messages to the most appropriate employee based on skills, entitlements, and availability, providing standard templates and responses, a central knowledge base, and unified customer history across channels. Features a secure web portal for customers to send/receive confidential information as needed.
Employee Desktop	Unifies the disparate applications on an employee’s desktop. Presents on one screen all of the contextual customer information, relevant knowledge, and business process guidance that an employee needs to handle interactions in any channel, without having to toggle between numerous screens and applications.
Enterprise Feedback	

	Provides an enterprise-class platform to help organizations gain a complete view of the voice of their customers and employees through company-initiated surveys delivered via mobile, email, web, IVR, and SMS channels, together with the ability to analyze and act on that feedback to achieve desired outcomes.
Financial Compliance	Improves compliance in trading room, contact center, and financial back-office operations by capturing voice, video, desktop, and text interactions across multiple channels, including collaboration tools (e.g., Skype for Business and Cisco Jabber). Delivers reliable, robust recording, indexing, archiving, and retrieval of interactions and transactions to address complex challenges, including MiFID II, trading floor compliance, collaboration compliance, legal hold, and more.

Full-Time Recording	Enables enterprise recording to support customer engagement. Reliably and securely captures, encrypts, indexes, archives, searches, and replays audio, screen, and other methods of interaction from different and mixed recording environments, and couples these capabilities with powerful speech analytics to provide greater value from recorded interactions.
Gamification	Applies automated game mechanics to energize employee engagement, communicate personal and organizational goals, measure and acknowledge achievements, inspire collaboration, and motivate teams. Delivers key performance indicator (KPI)-linked programs to transform the process of acquiring, maintaining, and improving the skills, knowledge, and behaviors necessary for employees to enhance quality, customer engagement, sales, and other expertise.
Identity Analytics	Combines automated recorder-embedded “passive” voice biometrics technology with multifactor metadata analytics to screen calls against the databases of both customer and known fraudster voiceprints. Offers “upstream fraud detection” functionality to identify suspicious caller behavior within voice self-service interactions, and helps improve experiences by authenticating legitimate customers faster, reducing call handling and fraud-related losses.
Interaction Analytics	Unifies data visualization of top categories, terms and themes from contact center interactions across voice-based and text-based channels, using purpose-built engines for each interaction type. Provides the ability to see high-level trends impacting the business, as well as drill down into specific interactions.
Internal Communities	Supports employee engagement, collaboration, and enterprise social networking through open and closed micro-communities, peer-to-peer support forums, communications blogs, wikis, activity streams, and online resources. Enables knowledge and best practice sharing in a high-value, low-effort manner, enhancing relationships, productivity, and efficiency.
Knowledge Management	Provides a central repository of up-to-date information to deliver the right knowledge to users in the contact center and to customers through self-service. Provides answers quickly by searching, browsing, or following guided processes, with personalized results tailored to the customer’s context. Helps increase first contact resolution, improve the consistency and quality of answers, enhance compliance with regulations and company processes, and reduce employee training time.
Mobile Workforce	Comprises a family of mobile applications, offering anytime, anywhere access to important operational information. Allows employees to access and change schedules and view performance information, and enables the convenient collection of in-the-moment feedback through device-friendly survey formats over the web, email, and SMS, as well as on site in retail stores and sporting venues.
Performance Management	Provides a complete, closed-loop solution to manage individual and departmental performance against goals. Provides a comprehensive view of KPIs using performance scorecards to report on customer interactions, customer experience trends, and contact center, branch, and back-office staff performance. Leverages scorecards, along with learning, coaching, and gamification as part of a broader capability.
Robotic Process Automation	Automates repetitive manual processes, allowing employees to focus on more complex and value-added customer-facing activities. Leverages software robots to execute specific tasks or entire multistep processes within a functional area, leading to improved quality and productivity.
Social Analytics	Collects, analyzes, and reports relevant insights derived from posts and content published to social media sites and messaging services. Reveals intelligence and trends related to sentiment, emerging

topics and themes, and locations, enabling organizations to understand the voice of the customer and giving employees the means and insight they need to respond to/address issues and concerns expressed through these channels.

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Speech Transcription	Enables the export of transcripts of 100% of contact center telephone interactions for use by big data, predictive and business insight teams. Transcripts are speaker-separated, time stamped, and available in over 60 languages and variants and in 3 different formats based on intended use.
Speech Analytics	Automatically analyzes and identifies trends, themes, and the root causes driving customer call volumes in order to proactively respond to issues and act on opportunities that enhance the customer experience and support business objectives.
Text Analytics	Performs root cause analysis on the drivers and trends driving customer interactions through text-based communications channels-including survey verbatims, email, and customer service chat sessions-to improve performance, optimize processes, and enhance the customer experience.
Virtual Assistant	Uses artificial intelligence (AI) and machine learning to provide conversational access to information, get answers to complex questions, and orchestrate self-service transactions across voice and digital channels. Predicts user intent based on context and initiates best next actions based on business rules in order to deliver successful outcomes.
Voice Self-Service	Provides natural language, speech-enabled voice self-service enhanced by real-time, contextual automation and analytics-driven personalization. Leverages business intelligence to analyze and adapt call flow and the pace of interactions based on caller behavior, and to continually improve performance over time.
Voice Self-Service Fraud Detection	Automates and provides upstream fraud detection based on real-time analysis of over 60 parameters of caller behavior in voice self-service across multiple calls and programs. Identifies and flags suspicious callers based on threat level, and alerts the enterprise so action can be taken to mitigate risk prior to account takeover.
Web/Mobile Self-Service	Enables customers to self-serve on the web or via their mobile devices. Unites knowledge management, case management, process management, and channel escalation to enable personalized web and mobile self-service experiences. Features advanced cross-channel messaging, enabling customers to start a digital interaction on one device and continue it on another, as well as seamlessly transition from self-service to live service within a mobile app, mobile web, or web application.
Work Manager	Helps increase productivity, meet service delivery goals, and enhance customer satisfaction by prioritizing the work of individual employees, helping ensure they focus on the right activities at the right time. Provides a practical approach to managing claims processing, loan production, and other blended and back-office functions by prioritizing work items to meet SLAs based on available employees with the right skills.
Workforce Management	Enables organizations to efficiently plan, forecast, and schedule employees to meet service level goals. Provides visibility into and a singular management tool for the work, the people, and the processes across customer touchpoints in contact center, branch and back-office operations.

Cyber Intelligence Solutions

Overview

Verint is a leading global provider of security and intelligence data mining software. Our solutions are deployed in over 100 countries, helping governments, critical infrastructure and enterprise organizations to neutralize and prevent terror, crime and cyber threats. Our data mining software helps security organizations capture and analyze data from multiple sources and turn that data into actionable insights. Verint has over two decades of cyber intelligence experience leveraging data mining software, deep domain expertise and advanced intelligence methodologies to address a broad range of security missions for intelligence, cyber and physical security organizations.

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We believe that security organizations face new kinds of sophisticated threats that are increasingly complex, and they seek to deploy data mining solutions that are powered by predictive intelligence and incorporate a higher level of automation using artificial intelligence and other advanced analytic technologies. Our significant experience serving leading security agencies around the world provides us with a unique perspective on our customers' evolving needs and allows us to respond quickly to new market trends.

Verint's growth strategy is to expand our portfolio to address market trends and to offer our solutions directly and through partners to our growing installed base and to new customers globally.

Trends

We believe that the following trends are driving demand for security and intelligence data mining software:

- Security Threats Becoming Increasingly Pervasive and Complex. Governments, critical infrastructure providers, and enterprises face many types of security threats from criminal and terrorist organizations and foreign governments. Some of these security threats come from well-organized and well-funded organizations that utilize new and increasingly sophisticated methods. As a result, security and intelligence organizations find it more difficult and complicated to detect, investigate and neutralize threats. Many of these organizations are seeking to deploy more advanced data mining solutions that can help them capture and analyze data from multiple sources to effectively and efficiently address the challenge of increased sophistication and complexity.

- Shortage of Security Analysts Increasing the Need for Automation. Security organizations are using data mining solutions to help conduct investigations and generate actionable insights. Typically, data mining solutions require security organizations to employ intelligence analysts and data scientists to operate them. However, there is a shortage of such qualified personnel globally leading to elongated investigations and increased risk that security threats go undetected or are not addressed. To overcome this challenge, many security organizations are seeking advanced data mining solutions that automate functions historically performed manually to improve the quality and speed of investigations and intelligence production. These organizations are also increasingly seeking artificial intelligence and other advanced data analysis tools to gain intelligence faster with fewer analysts and data scientists.

- Need for Predictive Intelligence as a Force Multiplier. Predictive intelligence is generated by correlating massive amounts of data from a wide range of disparate sources to uncover previously unknown connections, identify suspicious behaviors using advanced analytics, and predict future events. Predictive intelligence is a force multiplier, enabling security organizations to allocate resources more effectively to prioritize various operational tasks based on actionable intelligence. Security organizations are seeking advanced data mining solutions that can generate accurate and actionable predictive intelligence to shorten investigation times and empower their teams with greater insights.

Our Strategy

We believe we are well positioned to address these market trends. The key elements of our growth strategy include:

- Addressing the Increased Complexity of Security Threats with Advanced Data Mining Software, Proven Intelligence Methodologies and Deep Domain Expertise. Verint has a long history of working closely with leading security organizations around the world and has designed its data mining software portfolio based on a thorough understanding of our customers' needs, proven intelligence methodologies and deep domain expertise. We believe this experience positions us well to expand existing customer relationships, win new customers, and continue to grow our data mining software portfolio to address evolving and more complex security needs.

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Leveraging Automation Technologies to Reduce Dependency on Security Analysts and Data Scientists. Security analysts and data scientists are critical to conducting security investigations in an environment of growing complexity. However, given a shortage of these skilled resources, it is important to reduce the dependency on them by automating tedious and repetitive functions that previously required manual operation. Our strategy is to increase the use of automation and artificial intelligence technologies across our portfolio and introduce advanced data mining software that can further automate the intelligence and investigative processes for our customers, while reducing dependency on large numbers of intelligence analysts and data scientists.

- Improving the Effectiveness of Security Organizations with Predictive Intelligence Capabilities. Our data mining software portfolio provides our customers the capability to capture and analyze data and to generate predictive intelligence. Our strategy is to further enhance our software to empower security organizations with more accurate

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predictive intelligence by leveraging analytics and machine learning technologies that can correlate massive amounts of data from a wide range of disparate sources. Our solutions are engineered to collect and analyze vast amounts of data from multiple and diverse sources and leverage artificial intelligence, as well as other advanced analytic tools, to generate intelligence and predict future events, shortening the time to intelligence, reducing the number of routine tasks, and empowering our customers to execute their missions faster and more efficiently.

Our Products

Product Name	Description
Cyber Security	Our cyber security software captures cyber security data and applies machine learning and behavioral analytics to empower an organization's Security Operations Center. "Virtual Analysts" automate the process of detecting, investigating and responding to advanced cyber-attacks and driving intelligence to the security operations team.
Intelligence Fusion Center (IFC) and Web and Social Intelligence	Our Intelligence Fusion software enables security analysts to work more efficiently by fusing cross-organizational data sources, generating and surfacing valuable insights, and turning knowledge into actions and predictive intelligence. Our Web & Social Intelligence software enables the collection, fusion and analysis of data from the web, including the deep web and dark nets, from social media blogs, and from the media.
Network Intelligence Suite	Our network intelligence data mining software helps security organizations generate critical intelligence from large amounts of data captured from a variety of network, internal and external open sources.
Situational Intelligence	Our Situational Intelligence software delivers intelligence to help organizations increase situational awareness, improve security responsiveness and realize greater operational efficiency. It captures and fuses data from multiple systems and sensors, such as access control, video, intrusion, fire, public safety, weather, traffic, first responder, and other mobile device systems. It enables security organizations to quickly fuse, analyze, and report information, and take action on risks, alarms, and incidents.

Our Solutions: By Industry

Verint offers its broad portfolio of cyber intelligence solutions to government and enterprise customers.

- Government. National security and law enforcement agencies are using Verint solutions to prevent terrorism, collect intelligence and investigate security threats and to fight a wide range of criminal activity, such as arson, drug trafficking, homicides, human trafficking, identity theft, kidnapping, poaching, illegal immigration, financial crimes, and other organized crimes.

- Enterprise. Commercial organizations and critical infrastructure, such as airports, transportation systems, power plants, public and government facilities, are using Verint solutions to improve efficiency and effectiveness of physical security and to detect and respond to cyber threats. In addition, telecommunication carriers are using Verint solutions to comply with certain government regulations requiring them to assist the government in their evidence and intelligence collection processes.

Our Solutions: By Security Challenge

Below are examples of the challenges security organizations around the world are using Verint's Intelligence-Powered Security portfolio to address:

- Counter terrorism - Tracking terrorist organizations and generating actionable intelligence for detecting and preventing terror attacks.

- Fighting Transnational Drug Trafficking - Identifying local and international drug networks, running complex investigations, generating legal evidence, and taking action against traffickers.

- Crime Syndicate Investigations - Accelerating investigations through behavioral profiles and visual link analysis and revealing investigation clues.

- Cyber Security for Advanced Threats - Detecting breaches across attack chains and automating cyber investigations and threat hunting.

- Physical Security, Emergency Management & Response - Evaluating and responding more efficiently to incidents to ensure facility and asset protection, as well as employee safety.

- Financial Crime Investigations - Fusing data from financial databases, the web and other sources to identify and investigate suspicious financial transactions.

- Locating Natural Disaster Survivors - Empowering field teams with intelligence to quickly zero-in on areas of need and provide urgent help.

- Border Control - Tracking and preventing illegal border activity.

Customer Services

We offer a range of customer services, including implementation and training, consulting and managed services, and maintenance and support, to help our customers maximize their return on investment in our solutions.

Implementation and Training

Our solutions are implemented by our service organizations, authorized partners, resellers, or by our customers themselves. Our implementation services include project management, system installation, and commissioning, including integrating our solutions with our customers' environments and third-party solutions. Our training programs are designed to enable our customers to use our solutions effectively and to maximize the value of our solutions. Our Customer Engagement solutions business includes training programs designed to certify our partners to sell, install, and support our solutions. Customer and partner training is provided at the customer site, at our training centers around the world, and/or remotely online.

Consulting

Our management consulting capabilities include business strategy, process excellence, performance management, intelligence methodologies, and project and program management, and are designed to help our customers maximize the value of our solutions in their own environments.

Managed Services

We offer a range of managed services designed to help our customers effectively run their operations, and maximize business and intelligence insights. These managed services are recurring in nature and can be delivered in conjunction with Verint's technology or on a standalone basis and help to deepen our trusted partner relationships with our customers.

Maintenance and Support

We offer a range of customer maintenance and support plans to our customers and resellers, which may include phone and web access to technical personnel up to 24-hours-a-day, seven-days-a-week. Our support programs are designed to help ensure long-term, successful use of our solutions. We believe that customer support is critical to retaining and expanding our customer base. Our Customer Engagement solutions are generally sold with a warranty of one year for hardware and 90 days for software. Our Cyber Intelligence solutions are generally sold with warranties that typically range from 90 days to three years and, in some cases, longer. In addition, customers are typically provided the option to purchase maintenance plans that provide a range of services, such as telephone support, advanced replacement, upgrades when and if available, and on-site repair or replacement. Currently, the majority of our maintenance revenue is related to our Customer Engagement solutions.

Direct and Indirect Sales

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We sell our solutions through our direct sales teams and indirect channels, including distributors, systems integrators, value-added resellers ("VARs"), and OEM partners. Approximately half of our overall sales are made through partners, distributors, resellers, and system integrators.

Each of our solutions is sold by trained, dedicated, regionally-organized direct and indirect sales teams.

- Our direct sales teams are focused on large and mid-sized customers and, in many cases, co-sell with our other channels and sales agents.
- Our indirect sales teams are focused on developing and supporting relationships with our indirect channels, which provide us with broader market coverage, including access to their customer bases, integration services, and presence in certain geographies and vertical markets.

Our sales teams are supported by business consultants, solutions specialists, and pre-sales engineers who, during the sales process, help determine customer requirements and develop technical responses to those requirements. We sell directly and indirectly in both of our segments. See "Risk Factors—Risks Related to Our Business—Competition, Markets, and Operations—If we are unable to establish and maintain our relationships with third parties that market and sell our products, our business and ability to grow could be materially adversely affected" under Item 1A of this report for a more detailed discussion of certain sales and distribution risks that we face.

Customers

Our solutions are used by over 10,000 organizations in more than 180 countries. In the year ended January 31, 2019, we derived approximately 65% and 35% of our revenue from the sale of our Customer Engagement and Cyber Intelligence solutions, respectively. We are party to contracts with customers in both of our segments, the loss of which could have a material adverse effect on the segment.

In the year ended January 31, 2019, we derived approximately 54%, 26%, and 20% of our revenue from sales to end users in the Americas, in Europe, the Middle East and Africa ("EMEA"), and in the Asia-Pacific ("APAC") regions, respectively. See also Note 16, "Segment, Geographic, and Significant Customer Information" to our consolidated financial statements included under Item 8 of this report for additional information and financial data about each of our operating segments and geographic regions.

For the year ended January 31, 2019, approximately one third of our business was generated from contracts with various governments around the world, including local, regional, and national government agencies. Due to the unique nature of the terms and conditions associated with government contracts generally, our government contracts may be subject to renegotiation or termination at the election of the government customer. Some of our customer engagements require us to have security credentials or to participate in projects through an approved legal entity.

Seasonality and Cyclicality

As is typical for many software and technology companies, our business is subject to seasonal and cyclical factors. In most years, our revenue and operating income are typically highest in the fourth quarter and lowest in the first quarter (prior to the impact of unusual or nonrecurring items). Moreover, revenue and operating income in the first quarter of a new year may be lower than in the fourth quarter of the preceding year, in some years, potentially by a significant margin. In addition, we generally receive a higher volume of orders in the last month of a quarter, with orders concentrated in the later part of that month. We believe that these seasonal and cyclical factors primarily reflect customer spending patterns and budget cycles, as well as the impact of compensation incentive plans for our sales personnel. While seasonal and cyclical factors such as these are common in the software and technology industry, this pattern should not be considered a reliable indicator of our future revenue or financial performance. Many other factors, including general economic conditions, also have an impact on our business and financial results. See “Risk Factors” under Item 1A of this report for a more detailed discussion of factors which may affect our business and financial results.

Research and Development

We continue to enhance the features and performance of our existing solutions and to introduce new solutions through extensive R&D activities. In addition to the development of new solutions and the addition of capabilities to existing solutions, our R&D activities include quality assurance and advanced technical support for our customer services organization. In certain instances, primarily in our Cyber Intelligence segment, we may tailor our products to meet the particular requirements of our

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customers. R&D is performed primarily in the United States, Israel, the United Kingdom, Ireland, the Netherlands, Hungary, and Indonesia for our Customer Engagement segment; and in Israel, Germany, Brazil, Cyprus, Taiwan, the Netherlands, Romania, and Bulgaria for our Cyber Intelligence segment.

To support our research and development efforts, we make significant investments in R&D every year. We allocate our R&D resources in response to market research and customer demand for additional features and solutions. Our development strategy involves rolling out initial releases of our products and adding features over time. We incorporate product feedback received from our customers into our product development process. While the majority of our products are developed internally, in some cases, we also acquire or license technologies, products, and applications from third parties based on timing and cost considerations. See "Risk Factors—Risks Related to Our Business—Competition, Markets, and Operations—For certain products, components, or services, including our cloud hosting operations, we rely on third-party suppliers, manufacturers, and partners, and if these relationships are disrupted, lost, or must be terminated, we may not be able to obtain substitutes or may face other difficulties" under Item 1A of this report.

As noted above, a significant portion of our R&D operations is located outside the United States. We have derived benefits from participation in certain government-sponsored programs, including those of the Israel Innovation Authority ("IIA"), formerly the Office of the Chief Scientist ("OCS"), and in other jurisdictions for the support of R&D activities conducted in those locations. In the case of Israel, the Israeli law under which our IIA grants are made limits our ability to manufacture products, or transfer technologies, developed using these grants outside of Israel without permission from the IIA. See "Risk Factors—Risks Related to Our Business—Competition, Markets, and Operations—Because we have significant foreign operations and business, we are subject to geopolitical and other risks that could materially adversely affect our results" and "Risk Factors—Risks Related to Our Business—Competition, Markets, and Operations—Conditions in and our relationship to Israel may materially adversely affect our operations and personnel and may limit our ability to produce and sell our products or engage in certain transactions" under Item 1A of this report for a discussion of certain risks associated with our foreign operations.

Manufacturing, Suppliers, and Service Providers

While our primary focus is on developing and producing software, to accommodate customers' desire for turnkey solutions, we also deliver solutions that incorporate third-party hardware components. This applies mainly to our Cyber Intelligence segment, as the majority of the solutions from our Customer Engagement segment are comprised of software and do not incorporate hardware components. We utilize both unaffiliated manufacturing subcontractors, as well as our internal operations, to produce, assemble, and deliver solutions incorporating hardware components. These internal operations consist primarily of installing our software on externally purchased hardware components, final assembly, repair, and testing, which involves the application of extensive quality control procedures to materials, components, subassemblies, and systems. We also perform system integration functions prior to shipping turnkey solutions to our customers. Our internal operations are performed primarily in our German, Israeli, U.S. and Cypriot facilities for solutions in our Cyber Intelligence segment, and in our U.S. facility for certain solutions in our Customer Engagement segment. Although we have occasionally experienced delays and shortages in the supply of proprietary components in the past, we have typically been able to obtain adequate supplies of all material components in a timely manner from alternative sources, when necessary. We also rely on third parties to provide certain services to us or to our customers. We deploy our cloud solutions on third-party cloud computing and hosting platforms. We provide our customers with service level commitments with respect to uptime and accessibility for these hosted offerings. See "Risk Factors—Risks Related to Our Business—Competition, Markets, and Operations—For certain products, components, or services, including our cloud hosting operations, we rely on third-party suppliers, manufacturers, and partners, and if these relationships are disrupted, lost, or must be terminated, we may not be able to obtain substitutes or may face other difficulties" under Item 1A of this report for a discussion of risks associated with our manufacturing operations and suppliers.

Employees

As of January 31, 2019, we employed approximately 6,100 professionals, including certain contractors, with approximately 41%, 25%, 23%, and 11% of our employees and contractors located in the Americas, Israel, EMEA (excluding Israel), and APAC, respectively.

We consider our relationship with our employees to be good and a critical factor in our success. Our employees in the United States are not covered by any collective bargaining agreements. In some cases, our employees outside the United States are automatically subject to certain protections negotiated by organized labor in those countries directly with the government or trade unions, or are automatically entitled to severance or other benefits mandated under local laws. For example, while we are not a party to any collective bargaining or other agreement with any labor organization in Israel, certain provisions of the collective bargaining agreements between the Histadrut (General Federation of Laborers in Israel) and the Coordinating Bureau of Economic Organizations (including the Manufacturers' Association of Israel) are applicable to our Israeli employees by virtue of expansion orders of the Israeli Ministry of Industry, Trade and Labor.

Intellectual Property Rights

General

Our success depends to a significant degree on the legal protection of our software and other proprietary technology. We rely on a combination of patent, trade secret, copyright, and trademark laws, and confidentiality and non-disclosure agreements with employees and third parties to establish and protect our proprietary rights.

Patents

As of January 31, 2019, we had nearly 1,000 patents and patent applications worldwide, including more than 120 patent issuances or allowances during the past year. We regularly review new areas of technology related to our businesses to determine whether they can and should be patented.

Licenses

Our customer and partner license agreements prohibit the unauthorized use, copying, and disclosure of our software technology and contain customer restrictions and confidentiality terms. These agreements generally warrant that the software and proprietary hardware will materially comply with written documentation and assert that we own or have sufficient rights in the software we distribute and have not violated the intellectual property rights of others.

We license our products in a format that does not permit users to change the software code. See "Risk Factors—Risks Related to Our Business—Competition, Markets, and Operations—For certain products, components, or services, including our cloud hosting operations, we rely on third-party suppliers, manufacturers, and partners, and if these relationships are disrupted, lost, or must be terminated, we may not be able to obtain substitutes or may face other difficulties" under Item 1A of this report.

While we employ many of our innovations exclusively in our own products and services, we also engage in outbound and inbound licensing of specific patented technologies. While it may be necessary in the future to seek or renew licenses relating to various aspects of our products, we believe, based on industry practice, such licenses generally can be obtained on commercially reasonable terms.

Trademarks and Service Marks

We use various trademarks and service marks to protect the marks used in our business. We also claim common law protections for other marks we use in our business. Competitors and other companies could adopt similar marks or try to prevent us from using our marks, consequently impeding our ability to build brand identity and possibly leading to customer confusion. See "Risk Factors—Risks Related to Our Business—Information/Product Security and Intellectual Property—Our intellectual property may not be adequately protected" under Item 1A of this report for a more detailed discussion regarding the risks associated with the protection of our intellectual property.

Competition

We face strong competition in all of our markets, and we expect that competition will persist and intensify.

In our Customer Engagement segment, our competitors include Aspect Software, Inc., Genesys Telecommunications, Medallia Inc., NICE Systems Ltd., Nuance Communications, Inc., Pegasystems Inc., divisions of larger companies, including Microsoft Corporation, Oracle Corporation, SAP, and Salesforce.com, Inc., as well as many smaller companies, which can vary across regions. In our Cyber Intelligence segment, our competitors include BAE Systems plc, Elbit Systems Ltd., FireEye, Inc., Genetec Inc., IBM Corporation, JSI Telecom, Palantir Technologies, Inc., and Rohde & Schwarz GmbH & Co., KG, as well as a number of smaller companies and divisions of larger companies that compete with us in certain regions or only with respect to portions of our product portfolio.

In each of our operating segments, we believe that we compete principally on the basis of:

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- Product performance and functionality;
- Product quality and reliability;
- Breadth of product portfolio and pre-defined integrations;
- Global presence, reputation, and high-quality customer service and support;
- Specific domain expertise, industry knowledge, vision, and experience; and
- Price.

We believe that our competitive success depends primarily on our ability to provide technologically advanced and cost-effective solutions and services. Some of our competitors have superior brand recognition and significantly greater financial or other resources than we do. We expect that competition will increase as other established and emerging companies enter our markets or we enter theirs, and as new products, services, technologies, and delivery methods are introduced. In addition, consolidation is common in our markets and has in the past and may in the future improve the position of our competitors. See "Risk Factors—Risks Related to Our Business—Competition, Markets, and Operations—Intense competition in our markets and competitors with greater resources than us may limit our market share, profitability, and growth" under Item 1A of this report for a more detailed discussion of the competitive risks we face.

Export Regulations

We and our subsidiaries are subject to applicable export control regulations in countries from which we export goods and services. These controls may apply by virtue of the country in which the products are located or by virtue of the origin of the content contained in the products. If the controls of a particular country apply, the level of control generally depends on the nature of the goods and services in question. For example, our Cyber Intelligence solutions tend to be more highly controlled than our Customer Engagement solutions. Where controls apply, the export of our products generally requires an export license or authorization or that the transaction qualify for a license exception or the equivalent, and may also be subject to corresponding reporting requirements.

Item 1A. Risk Factors

Many of the factors that affect our business and operations involve risks and uncertainties. The factors described below are risks that could materially harm our business, financial condition, and results of operations. These are not all the risks we face and other factors currently considered immaterial or unknown to us may have a material adverse impact on our future operations.

Risks Related to Our Business

Competition, Markets, and Operations

Our business is impacted by changes in general economic conditions, and information technology and government spending in particular.

Our business is subject to risks arising from adverse changes in domestic and global economic conditions. Slowdowns, recessions, economic instability, political unrest, armed conflicts, or natural disasters around the world may cause companies and governments to delay, reduce, or even cancel planned spending. In particular, declines in information technology spending and limited or reduced government budgets have affected the markets for our solutions in both the Customer Engagement market and the Cyber Intelligence market in certain periods and in certain regions. For the year ended January 31, 2019, approximately one third of our business was generated from contracts with various governments around the world, including national, regional, and local government agencies. We expect that government contracts will continue to be a significant source of our revenue for the foreseeable future. Macroeconomic changes, such as rising interest rates, significant changes in commodity prices, actual or threatened trade wars, or the implementation of the United Kingdom's decision to exit the European Union (referred to as "Brexit") may also impact demand for our products. Brexit could, among other outcomes, also disrupt the free movement of goods, services, and people between the U.K. and the E.U., have a detrimental impact on the U.K. and E.U. economy, and provide some disruption to business activities in all sectors. Customers or partners who are facing business challenges, reduced budgets, liquidity issues, or other impacts from such macroeconomic changes are also more likely to defer purchase decisions or cancel or reduce orders, as well as to delay or default on payments. If customers or partners significantly reduce their spending with us or significantly delay or fail to make payments to us, our business, results of operations, and financial condition would be materially adversely affected.

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The industry in which we operate is characterized by rapid technological changes, evolving industry standards and challenges, and changing market potential from area to area, and if we cannot anticipate and react to such changes our results may suffer.

The markets for our products are characterized by rapidly changing technology and evolving industry standards and challenges. The introduction of products embodying new technology, new delivery platforms, the commoditization of older technologies, and the emergence of new industry standards and technological hurdles can exert pricing pressure on existing products and services and/or render them unmarketable or obsolete. For example, in our Cyber Intelligence business, the increasing complexity and sophistication of security threats and prevalence of encrypted communications have created significantly greater challenges for our customers and for our solutions to address. In our Customer Engagement business, we see a continued shift to cloud-based solutions as well as market saturation for more mature solutions. Moreover, the market potential and growth rates of the markets we serve are not uniform and are evolving. It is critical to our success that we are able to anticipate and respond to changes in technology and industry standards and new customer challenges by consistently developing new, innovative, high-quality products and services that meet or exceed the changing needs of our customers. We must also successfully identify, enter, and appropriately prioritize areas of growing market potential, including by launching, successfully executing, and driving demand for new and enhanced solutions and services, while simultaneously preserving our legacy businesses and migrating away from areas of commoditization. We must also develop and maintain the expertise of our employees as the needs of the market and our solutions evolve. If we are unable to execute on these strategic priorities, we may lose market share or experience slower growth, and our profitability and other results of operations may be materially adversely affected.

Intense competition in our markets and competitors with greater resources than us may limit our market share, profitability, and growth.

We face aggressive competition from numerous and varied competitors in all of our markets, making it difficult to maintain market share, remain profitable, invest, and grow. We are also encountering new competitors as we expand into new markets or as new competitors expand into ours. Our competitors may be able to more quickly develop or adapt to new or emerging technologies, better respond to changes in customer needs or preferences, better identify and enter into new areas of growth, or devote greater resources to the development, promotion, and sale of their products. Some of our competitors have, in relation to us, longer operating histories, larger customer bases, longer standing relationships with customers, superior brand recognition, superior margins, and significantly greater financial or other resources, especially in new markets we may enter. Consolidation among our competitors may also improve their competitive position. We also face competition from solutions developed internally by our customers or partners. To the extent that we cannot compete effectively, our market share and results of operations, would be materially adversely affected.

Because price and related terms are key considerations for many of our customers, we may have to accept less-favorable payment terms, lower the prices of our products and services, and/or reduce our cost structure, including reducing headcount or investment in R&D, in order to remain competitive. If we are forced to take these kinds of actions to remain competitive in the short-term, such actions may adversely impact our ability to execute and compete in the long-term.

Our future success depends on our ability to properly manage investments in our business and operations, execute on growth initiatives, and enhance our existing operations and infrastructure.

A key element of our long-term strategy is to continue to invest in and grow our business and operations, both organically and through acquisitions. Investments in, among other things, new markets, new products, solutions, and technologies, R&D, infrastructure and systems, geographic expansion, and headcount are critical components for achieving this strategy. However, such investments and efforts present challenges and risks and may not be successful, especially in new areas or new markets in which we have little or no experience, and even if successful, may negatively impact our profitability in the short-term. To be successful in such efforts, we must be able to properly allocate limited investment dollars and other resources, prioritize among opportunities, projects, and implementations, balance the extent and timing of investments with the associated impact on profitability, balance our focus between new areas or new markets and the operation and servicing of our legacy businesses and customers, capture efficiencies and economies of scale, and compete in the new areas or new markets, or with the new solutions, in which we have invested.

Our success also depends on our ability to execute on other growth initiatives we are pursuing. For example, in our Customer Engagement segment, in addition to the other factors described in this section, our revenue and profitability objectives are highly dependent on our ability to continue to expand our cloud business and cloud operations, including keeping pace with the market transition to cloud-based software, making new sales, and managing the conversion of our maintenance base. In our Cyber Intelligence segment, in addition to the other factors described in this section, our profitability objectives are highly

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dependent on our ability to continue to shift our product mix towards software and away from professional services and hardware resales.

Our success also depends on our ability to effectively and efficiently enhance our existing operations. Our existing infrastructure, systems, security, processes, and personnel may not be adequate for our current or future needs. System upgrades or new implementations can be complex, time-consuming, and expensive and we cannot assure you that we will not experience problems during or following such implementations, including among others, potential disruptions in our operations or financial reporting.

If we are unable to properly manage our investments, execute on growth initiatives, and enhance our existing operations and infrastructure, our results of operations and market share may be materially adversely affected.

We may not be able to identify suitable targets for acquisition or investment, or complete acquisitions or investments on terms acceptable to us, which could negatively impact our ability to implement our growth strategy.
As part of our long-term growth strategy, we have made a number of acquisitions and investments and expect to continue to make acquisitions and investments in the future. In many areas, we have seen the market for acquisitions become more competitive and valuations increase. Our competitors also continue to make acquisitions in or adjacent to our markets and may have greater resources than we do, enabling them to pay higher prices. As a result, it may be more difficult for us to identify suitable acquisition or investment targets or to consummate acquisitions or investments once identified on acceptable terms or at all. If we are not able to execute on our acquisition strategy, we may not be able to achieve our long-term growth strategy, may lose market share, or may lose our leadership position in one or more of our markets.
Our acquisition and investment activity presents certain risks to our business, operations, and financial position.

Acquisitions and investments are an important part of our growth strategy. Acquisitions and investments present significant challenges and risks to a buyer, including with respect to the transaction process, the integration of the acquired company or assets, and the post-closing operation of the acquired company or assets. If we are unable to successfully address these challenges and risks, we may experience both a loss on the investment and damage to our existing business, operations, financial results, and valuation.

The potential challenges and risks associated with acquisitions and investments include, among others:

- the effect of the acquisition on our strategic position and our reputation, including the impact of the market's reception of the transaction;

- the impact of the acquisition on our financial position and results, including our ability to maintain and/or grow our revenue and profitability;

- risk that we fail to successfully implement our business plan for the combined business, including plans to accelerate growth or achieve the anticipated benefits of the acquisition, such as synergies or economies of scale;

- risk of unforeseen or underestimated challenges or liabilities associated with an acquired company's business or operations;

- management distraction from our existing operations and priorities;

- risk that the market does not accept the integrated product portfolio;

-

challenges in reconciling business practices or in integrating product development activities, logistics, or information technology and other systems and processes;

- retention risk with respect to key customers, suppliers, and employees and challenges in integrating and training new employees;

- challenges in complying with newly applicable laws and regulations, including obtaining or retaining required approvals, licenses, and permits; and

- potential impact on our systems, processes, and internal controls over financial reporting.

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Acquisitions and/or investments may also result in potentially dilutive issuances of equity securities, the incurrence of debt and contingent liabilities, the expenditure of available cash, and amortization expenses or write-downs related to intangible assets such as goodwill, any of which could have a material adverse effect on our operating results or financial condition. Investments in immature businesses with unproven track records and technologies have an especially high degree of risk, with the possibility that we may lose our entire investment or incur unexpected liabilities. Transactions that are not immediately accretive to earnings may make it more difficult for us to maintain satisfactory profitability levels or compliance with the maximum leverage ratio covenant under the revolving credit facility under our senior credit agreement (the "2017 Credit Agreement"). Large or costly acquisitions or investments may also diminish our capital resources and liquidity or limit our ability to engage in additional transactions for a period of time.

The foregoing risks may be magnified as the cost, size, or complexity of an acquisition or acquired company increases, where the acquired company's products, market, or business are materially different from ours, or where more than one transaction or integration is occurring simultaneously or within a concentrated period of time. There can be no assurance that we will be successful in making additional acquisitions in the future or in integrating or executing on our business plan for existing or future acquisitions.

Sales processes for sophisticated solutions and a broad solution portfolio like ours present significant challenges.

We offer our customers a broad solution portfolio with the flexibility to purchase a single point solution, which can be expanded over time, or a larger more comprehensive system. Regardless of the size of a customer's purchase, many of our solutions are sophisticated and may represent a significant investment for our customers. As a result, our sales cycles can range in duration from as little as a few weeks to more than a year. Our larger sales typically require a minimum of a few months to consummate. As the length or complexity of a sales process increases, so does the risk of successfully closing the sale. Larger sales are often made by competitive bid, which also increases the time and uncertainty associated with such opportunities. Customers may also require education on the value and functionality of our solutions as part of the sales process, further extending the time frame and uncertainty of the process.

Longer sales cycles, competitive bid processes, and the need to educate customers means that:

- There is greater risk of customers deferring, scaling back, or canceling sales as a result of, among other things, their receipt of a competitive proposal, changes in budgets and purchasing priorities, or the introduction or anticipated introduction of new or enhanced products by us or our competitors during the process.

- We may make a significant investment of time and money in opportunities that do not come to fruition, which investments may not be usable or recoverable in future projects.

- We may be required to bid on a project in advance of the completion of its design or be required to begin working on a project in advance of finalizing a sale, in either case, increasing the risk of unforeseen technological difficulties or cost overruns.

- We face greater downside risks if we do not correctly and efficiently deploy limited personnel and financial resources and convert such sales opportunities into orders.

Larger solution sales also require greater expertise in sales execution and transaction implementation than more basic product sales, including in establishing and maintaining appropriate contacts and relationships with customers and partners, product development, project management and implementation, staffing, integration, services, and support. Our ability to develop, sell, implement, and support larger solutions and a broad solution portfolio is a competitive differentiator for us, which provides for diversification and more opportunities for growth, but also requires greater investment for us and presents challenges, including, among others, challenges associated with competition for limited internal resources, complex customer requirements, and project deadlines.

After the completion of a sale, our customers or partners may need assistance from us in making full use of the functionality of our solutions, in realizing all of their benefits, or in implementation generally. If we are unable to assist our customers and partners in realizing the benefits they expect from our solutions and products, demand for our solutions and products may decline and our operating results may suffer.

The extended time frame and uncertainty associated with many of our sales opportunities also makes it difficult for us to accurately forecast our revenues (and attendant budgeting and guidance decisions) and increases the volatility of our operating results from period to period. Our ability to forecast and the volatility of our operating results is also impacted by the fact that pricing, margins, and other deal terms may vary substantially from transaction to transaction, especially across business lines. The terms of our transactions, including with respect to pricing, future deliverables, delivery model (e.g., perpetual license versus SaaS), and termination clauses, also impact the timing of our ability to recognize revenue. We recognize SaaS revenue over the term of the SaaS subscription, so as our SaaS revenue continues to grow and becomes a more significant component of our overall revenue, we expect a greater amount of our revenue to be recognized over longer periods, in some cases several years, as compared to the way revenue is recognized for perpetual licenses. This change in the pattern of recognition also means that increases or decreases in SaaS subscription activity impacts the amount of revenue recognized in both current and future periods. Because these transaction-specific factors are difficult to predict in advance, this also complicates the forecasting of revenue and creates challenges in managing our cloud transition and revenue mix. The deferral or loss of one or more significant orders or a delay in a large implementation can also materially adversely affect our operating results, especially in a given quarter. Larger transactions also increase the risk that our revenue and profitability becomes concentrated in a given period or over time. As with other software-focused companies, a large amount of our quarterly business tends to come in the last few weeks, or even the last few days, of each quarter. This trend has also complicated the process of accurately predicting revenue and other operating results, particularly on a quarterly basis. Finally, our business is subject to seasonal factors that may also cause our results to fluctuate from quarter to quarter.

If we are unable to establish and maintain our relationships with third parties that market and sell our products, our business and ability to grow could be materially adversely affected.

Approximately half of our sales are made through partners, distributors, resellers, and systems integrators. To remain successful, we must maintain our existing relationships as well as identify and establish new relationships with such third parties. We must often compete with other suppliers for these relationships and our competitors often seek to establish exclusive relationships with these sales channels or to become a preferred partner for them. Our ability to establish and maintain these relationships is based on, among other things, factors that are similar to those on which we compete for end customers, including features, functionality, ease of use, installation and maintenance, and price. Even if we are able to secure such relationships on terms we find acceptable, there is no assurance that we will be able to realize the benefits we anticipate. Some of our channel partners may also compete with us or have affiliates that compete with us, or may also partner with our competitors or offer our products and those of our competitors as alternatives when presenting proposals to end customers. Our ability to achieve our revenue goals and growth depends to a significant extent on maintaining, enabling, and adding to these sales channels, and if we are unable to do so, our business and ability to grow could be materially adversely affected.

For certain products, components, or services, including our cloud hosting operations, we rely on third-party suppliers, manufacturers, and partners, which may create significant exposure for us.

Although we generally use standard parts and components in our products, we do rely on non-affiliated suppliers and OEM partners for certain non-standard products or components which may be critical to our products, including both hardware and software, and on manufacturers of assemblies that are incorporated into our products. We also purchase technology, license intellectual property rights, and oversee third-party development and localization of certain products or components, in some cases, by or from companies that may compete with us or work with our competitors. While we endeavor to use larger, more established suppliers, manufacturers, and partners wherever possible, in some cases, these providers may be smaller, less established companies, particularly in the case of new or unique technologies that we have not developed internally.

If any of these suppliers, manufacturers, or partners experience financial, operational, manufacturing, or quality assurance difficulties, cease production or sale, or there is any other disruption in our supply, including as a result of the acquisition of a supplier or partner by a competitor, we will be required to locate alternative sources of supply or manufacturing, to internally develop the applicable technologies, to redesign our products, and/or to remove certain features from our products, any of which would be likely to increase expenses, create delivery delays, and negatively impact our sales. Although we endeavor to establish contractual protections with key providers, including source code escrows (where needed), warranties, and indemnities, we may not be successful in obtaining adequate protections, these agreements may be short-term in duration, and the counterparties may be unwilling or unable to stand behind such protections. Moreover, these types of contractual protections offer limited practical benefits to us in the event our relationship with a key provider is interrupted.

We also rely on third parties to provide certain services to us or to our customers, including hosting partners and providers of other cloud-based services. We make contractual commitments to customers on the basis of these relationships and, in some cases, also entrust these providers with both our own sensitive data as well as the sensitive data of our customers (which may include sensitive end customer data). If these third-party providers do not perform as expected or encounter service disruptions, cyber-attacks, data breaches, or other difficulties, we or our customers may be materially and adversely affected, including, among other things, by facing increased costs, potential liability to customers, end customers, or other third parties, regulatory issues, and reputational harm. If it is necessary to migrate these services to other providers as a result of poor performance, security issues or considerations, or other financial or operational factors, it could result in service disruptions to our customers and significant time, expense, or exposure to us, any of which could materially adversely affect our business.

If we cannot retain and recruit qualified personnel, our ability to operate and grow our business may be impaired.

We depend on the continued services of our management and employees to run and grow our business. To remain successful and to grow, we need to retain existing employees and attract new qualified employees, including in new markets and growth areas we may enter. Retention is an industry issue given the competitive technology labor market and as the millennial workforce continues to value multiple company experience over long tenure. As we grow, we must also enhance and expand our management team to execute on new and larger agendas and challenges. The market for qualified personnel is competitive in the geographies in which we operate and may be limited especially in areas of emerging technology. We may be at a disadvantage to larger companies with greater brand recognition or financial resources or to start-ups or other emerging companies in trending market sectors. Work visa restrictions, especially in the U.S., have also become significantly tighter in recent years, making it difficult or impossible to source qualified personnel from other countries or even to hire those already in the U.S. on current visas. Efforts we engage in to establish operations in new geographies where additional talent may be available, potentially at a lower cost, may be unsuccessful or fail to result in the desired cost savings.
If we are unable to attract and retain qualified personnel when and where they are needed, our ability to operate and grow our business could be impaired. Moreover, if we are not able to properly balance investment in personnel with sales, our profitability may be adversely affected.

Because we have significant foreign operations and business, we are subject to geopolitical and other risks that could materially adversely affect our results.

We have significant operations and business outside the United States, including sales, research and development, manufacturing, customer services and support, and administrative services. The countries in which we have our most significant foreign operations include Israel, the United Kingdom, India, Cyprus, Indonesia, Australia, Brazil and the Netherlands. We also generate significant revenue from more than a dozen foreign countries, and smaller amounts of revenue from many more, including a number of emerging markets. We intend to continue to grow our business internationally.

Our foreign operations are, and any future foreign growth will be, subject to a variety of risks, many of which are beyond our control, including risks associated with:

- foreign currency fluctuations;

- political, security, and economic instability or corruption;

- changes in and compliance with both international and local laws and regulations, including those related to trade compliance, anti-corruption, information security, data privacy and protection, tax, labor, currency restrictions, and other requirements;

- differences in tax regimes and potentially adverse tax consequences of operating in foreign countries;

- product customization or localization issues;

- preferences for or policies and procedures that protect local suppliers;
- legal uncertainties regarding intellectual property rights or rights and obligations generally; and
- challenges or delays in collection of accounts receivable.

Any or all of these factors could materially adversely affect our business or results of operations.

Conditions in and our relationship to Israel may materially adversely affect our operations and personnel and may limit our ability to produce and sell our products or engage in certain transactions.

We have significant operations in Israel, including R&D, manufacturing, sales, and support. Conflicts and political, economic, and/or military conditions in Israel and the Middle East region have affected and may in the future affect our operations in

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Israel. Violence within Israel or the outbreak of violent conflicts between Israel and its neighbors, including the Palestinians or Iran, may impede our ability to manufacture, sell, and support our products or engage in R&D, or otherwise adversely affect our business or operations. Many of our employees in Israel are required to perform annual compulsory military service and are subject to being called to active duty at any time. Hostilities involving Israel may also result in the interruption or curtailment of trade between Israel and its trading partners or a significant downturn in the economic or financial condition of Israel and could materially adversely affect our results of operations.

Restrictive laws, policies, or practices in certain countries directed toward Israel, Israeli goods, or companies having operations in Israel may also limit our ability to sell some of our products in certain countries.

We receive grants from the IIA for the financing of a portion of our research and development expenditures in Israel. The availability in any given year of these IIA grants depends on IIA approval of the projects and related budgets that we submit to the IIA each year. The Israeli law under which these IIA grants are made limits our ability to manufacture products, or transfer technologies, developed using these grants outside of Israel. This may limit our ability to engage in certain outsourcing or business combination transactions involving these products or require us to pay significant royalties or fees to the IIA in order to obtain any IIA consent that may be required in connection with such transactions.

Israeli tax requirements may also place practical limitations on our ability to sell or engage in other transactions involving our Israeli companies or assets, to restructure our Israeli business, or to access funds in Israel.

Political factors related to our business or operations may adversely affect us.

We may experience negative publicity, reputational harm, or other adverse impacts on our business as a result of offering certain types of Cyber Intelligence solutions or if we sell such solutions to countries or customers that are considered disfavored by the media or political or social rights organizations, even where such activities or transactions are permissible under applicable law. The risk of these adverse impacts may also result in lost opportunities that impact our results of operations.

Some of our subsidiaries maintain security clearances domestically and abroad in connection with the development, marketing, sale, and/or support of our Cyber Intelligence solutions. These clearances are reviewed from time to time by these countries and could be deactivated, including for political reasons unrelated to the merits of our solutions, such as the list of countries we do business with or the fact that our local entity is controlled by or affiliated with an entity based in another country. If we lose our security clearances in a particular country, we may be unable to sell our Cyber Intelligence solutions for secure projects in that country and might also experience greater challenges in selling such solutions even for non-secure projects in that country. Even if we are able to obtain and maintain applicable security clearances, government customers may decline to purchase our Cyber Intelligence solutions if they were not developed or manufactured in that country or if they were developed or manufactured in other countries that are considered disfavored by such country.

Contracting with government entities exposes us to additional risks inherent in the government procurement process.

We provide products and services, directly and indirectly, to a variety of government entities, both domestically and internationally. Risks associated with licensing and selling products and services to government entities include more extended sales and collection cycles, varying governmental budgeting processes, adherence to complex procurement regulations, and other government-specific contractual requirements, including possible renegotiation or termination at the election of the government customer. We may be subject to audits and investigations relating to our government contracts and any violations could result in various civil and criminal penalties and administrative sanctions, including termination of contracts, payment of fines, and suspension or debarment from future government business, as well as harm to our reputation and financial results.

We are subject to complex, evolving regulatory requirements that may be difficult and expensive to comply with and that could negatively impact our business.

Our business and operations are subject to a variety of regulatory requirements in the United States and abroad, including, among other things, with respect to trade compliance, anti-corruption, information security, data privacy and protection, tax, labor, government contracts, and cyber intelligence. Compliance with these regulatory requirements may be onerous, time-consuming, and expensive, especially where these requirements are inconsistent from jurisdiction to jurisdiction or where the jurisdictional reach of certain requirements is not clearly defined or seeks to reach across national borders. Regulatory requirements in one jurisdiction may make it difficult or impossible to do business in another jurisdiction. We may also be unsuccessful in obtaining permits, licenses, or other authorizations required to operate our business, such as for the marketing or sale or import or export of our products and services.

While we endeavor to implement policies, procedures, and systems designed to achieve compliance with these regulatory requirements, we cannot assure you that these policies, procedures, or systems will be adequate or that we or our personnel will not violate these policies and procedures or applicable laws and regulations. Violations of these laws or regulations may harm our reputation and deter government agencies and other existing or potential customers or partners from purchasing our solutions. Furthermore, non-compliance with applicable laws or regulations could result in fines, damages, criminal sanctions against us, our officers, or our employees, restrictions on the conduct of our business, and damage to our reputation.

Regulatory requirements, such as laws requiring telecommunications providers to facilitate the monitoring of communications by law enforcement or governing the purchase and use of security solutions like ours, may also influence market demand for many of our products and/or customer requirements for specific functionality and performance or technical standards. The domestic and international regulatory environment is subject to constant change, often based on factors beyond our control or anticipation, including political climate, budgets, and current events, which could reduce demand for our products or require us to change or redesign products to maintain compliance or competitiveness.

Increasing regulatory focus on information security and data privacy issues and expanding laws in these areas may result in increased compliance costs, impact our business models, and expose us to increased liability.

As a global company, Verint is subject to global privacy and data security laws, and regulations. These laws and regulations may be inconsistent across jurisdictions and are subject to evolving and differing (sometimes conflicting) interpretations. Government regulators, privacy advocates and class action attorneys are increasingly scrutinizing how companies collect, process, use, store, share and transmit personal data. This increased scrutiny may result in additional compliance obligations or new interpretations of existing laws and regulations. Globally, new and emerging laws, such as the General Data Protection Regulation (“GDPR”) in Europe, state laws in the U.S. on privacy, data and related technologies, such as the California Consumer Privacy Act, as well as industry self-regulatory codes create new compliance obligations and expand the scope of potential liability, either jointly or severally with our customers and suppliers. While we have invested in readiness to comply with applicable requirements, these new and emerging laws, regulations and codes may affect our ability to reach current and prospective customers, to respond to both enterprise and individual customer requests under the laws (such as individual rights of access, correction, and deletion of their personal information), and to implement our business models effectively. These new laws may also impact our products and services as well as our innovation in new and emerging technologies. These requirements, among others, may impact demand for our offerings and force us to bear the burden of more onerous obligations in our contracts or otherwise increase our exposure to customers, regulators, or other third parties.

Transferring personal information across international borders is becoming increasingly complex. For example, European data transfers outside the European Economic Area are highly regulated. The mechanisms that we and many other companies rely upon for data transfers may be contested or invalidated. If the mechanisms for transferring personal information from certain countries or areas, including Europe to the United States, should be found invalid or if other countries implement more restrictive regulations for cross-border data transfers (or not permit data to leave the country of origin), such developments could harm our business, financial condition and results of operations.

Information / Product Security and Intellectual Property

The mishandling or the perceived mishandling of sensitive information could harm our business.

Some of our products are used by customers to compile and analyze highly sensitive or confidential information and data, including information or data used in intelligence gathering or law enforcement activities as well as personally identifiable information. While our customers' use of our products does not provide us access to the customer's sensitive or confidential information or data (or the information or data our customers may collect), we or our partners may receive or come into contact with such information or data, including personally identifiable information, when we are asked to perform services or support functions for our customers. We or our partners may also receive or come into contact with such information or data in connection with our SaaS or other hosted or managed services offerings. Customers are also increasingly focused on the security of our products and services and we continuously work to address these concerns, including through the use of encryption, access rights, and other customary security features, which vary based on the solution in question and customer requirements. We expect to receive, come into contact with, or become custodian of an increasing amount of customer data (including end customer data) as our cloud business and cloud operations expand, increasing our exposure if we or one of our hosting partners experiences an issue relating to the security or the proper handling of that information. We have implemented policies and procedures, and use information technology systems, to help ensure the proper handling of such information and data, including background screening of certain services personnel, non-disclosure agreements with employees and partners, access rules, and controls on our information technology systems. We also evaluate the information security of potential partners and vendors as part of our selection process and attempt to negotiate adequate protections from such third parties in our contracts. However, these policies, procedures, systems, and measures are designed to mitigate the risks associated with handling or processing sensitive data and cannot safeguard against all risks at all times. The improper handling of sensitive data, or even the perception of such mishandling (whether or not valid), or other security lapses or breaches affecting us, our partners, or our products or services, could reduce demand for our products or services or otherwise expose us to financial or reputational harm or legal liability.

Our solutions may contain defects or may be vulnerable to cyber-attacks, which could expose us to both financial and non-financial damages.

Our solutions may contain defects or may develop operational problems. This risk is amplified for our more sophisticated solutions. New products and new product versions, service models such as hosting, SaaS, and managed services, and the incorporation of third-party products or services into our solutions, also give rise to the risk of defects or errors. These defects or errors may relate to the operation or the security of our products or services, including third party components or services such as hosting. If we do not discover and remedy such defects, errors, or other operational or security problems until after a product has been released to customers or partners, we may incur significant costs to correct such problems and/or become liable for substantial damages for product liability claims or other liabilities.

Our solutions, including our cloud offerings, may be vulnerable to cyber-attacks even if they do not contain defects. If there is a successful cyber-attack on one of our products or services, even absent a defect or error, it may also result in questions regarding the integrity of our products or services generally, which could cause adverse publicity and impair their market acceptance and could have a material adverse effect on our results or financial condition.

We may be subject to information technology system breaches, failures, or disruptions that could harm our operations, financial condition, or reputation.

We rely extensively on information technology systems to operate and manage our business and to process, maintain, and safeguard information, including information belonging to our customers, partners, and personnel. This information may be processed and maintained on our internal information technology systems or on systems hosted by third-party service providers. These systems, whether internal or external, may be subject to breaches, failures, or disruptions as a result of, among other things, cyber-attacks, computer viruses, physical security breaches, natural disasters, accidents, power disruptions, telecommunications failures, new system implementations, or acts of terrorism or war. We have experienced cyber-attacks in the past and expect to continue to experience them in the future, potentially with greater frequency. While we are continually working to maintain secure and reliable systems, our security, redundancy, and business continuity efforts may be ineffective or inadequate. We must continuously improve our design and coordination of security controls across our business groups and geographies. Despite our efforts, it is possible that our security systems, controls, and other procedures that we follow or those employed by our third-party service providers, may not prevent breaches, failures, or disruptions. Such breaches, failures, or disruptions could subject us to the loss, compromise, destruction, or disclosure of sensitive or confidential information or intellectual property, either of our own information or IP or that of our customers (including end customers) or other third parties that may have been in our custody or in the custody of our third-party service providers, financial losses from remedial actions, litigation, regulatory issues, liabilities to customers or other third parties, damage to our reputation, delays in our ability to process orders, delays in our ability to provide products and services to customers, including SaaS or other hosted or managed services offerings, R&D or production downtimes, or delays or errors in financial reporting. Information system breaches or failures at one of our partners, including hosting providers or those who support other cloud-based offerings, may also result in similar adverse consequences. Any of the foregoing could harm our competitive position, result in a loss of customer confidence, and materially and adversely affect our results of operations or financial condition.

Our intellectual property may not be adequately protected.

While much of our intellectual property is protected by patents or patent applications, we have not and cannot protect all of our intellectual property with patents or other registrations. There can be no assurance that patents we have applied for will be issued on the basis of our patent applications or that, if such patents are issued, they will be, or that our existing patents are, sufficiently broad enough to protect our technologies, products, or services. Our intellectual property rights may not be successfully asserted in the future or may be invalidated, designed around, or challenged.

In order to safeguard our unpatented proprietary know-how, source code, trade secrets, and technology, we rely primarily upon trade secret protection and non-disclosure provisions in agreements with employees and other third parties having access to our confidential information. There can be no assurance that these measures will adequately protect us from improper disclosure or misappropriation of our proprietary information.

Preventing unauthorized use or infringement of our intellectual property rights is difficult even in jurisdictions with well-established legal protections for intellectual property such as the United States. It may be even more difficult to protect our intellectual property in other jurisdictions where legal protections for intellectual property rights are less established. If we are unable to adequately protect our intellectual property against unauthorized third-party use or infringement, our competitive position could be adversely affected.

Our products may infringe or may be alleged to infringe on the intellectual property rights of others, which could lead to costly disputes or disruptions for us and may require us to indemnify our customers and resellers for any damages they suffer.

The technology industry is characterized by frequent allegations of intellectual property infringement. In the past, third parties have asserted that certain of our products infringed on their intellectual property rights and similar claims may be made in the future. Any allegation of infringement against us could be time consuming and expensive to defend or resolve, result in substantial diversion of management resources, cause product shipment delays, or force us to enter into royalty or license agreements. If patent holders or other holders of intellectual property initiate legal proceedings against us, either with respect to our own intellectual property or intellectual property we license from third parties, we may be forced into protracted and costly litigation, regardless of the merits of these claims. We may not be successful in defending such litigation, in part due to the complex technical issues and inherent uncertainties in intellectual property litigation, and may not be able to procure any required royalty or license agreements on terms acceptable to us, or at all. Third parties may also assert infringement claims against our customers or partners. Subject to certain limitations, we generally indemnify our customers and partners with respect to infringement by our products on the proprietary rights of third parties, which, in some cases, may not be limited to a specified maximum amount and for which we may not have sufficient insurance coverage or adequate indemnification in the case of intellectual property licensed from a third party. If any of these claims succeed, we may be forced to pay damages, be required to obtain licenses for the products our customers or partners use or sell, or incur significant expenses in developing non-infringing alternatives. If we cannot obtain necessary licenses on commercially reasonable terms, our customers may be forced to stop using or, in the case of resellers and other partners, stop selling our products.

Use of free or open source software could expose our products to unintended restrictions and could materially adversely affect our business.

Some of our products contain free or open source software (together, “open source software”) and we anticipate making use of open source software in the future. Open source software is generally covered by license agreements that permit the user to use, copy, modify, and distribute the software without cost, provided that the users and modifiers abide by certain licensing requirements. The original developers of the open source software generally provide no warranties on such software or protections in the event the open source software infringes a third party’s intellectual property rights. Although we endeavor to monitor the use of open source software in our product development, we cannot assure you that past, present, or future products, including products inherited in acquisitions, will not contain open source software elements that impose unfavorable licensing restrictions or other requirements on our products, including the need to seek licenses from third parties, to re-engineer affected products, to discontinue sales of affected products, or to release all or portions of the source code of affected products. Any of these developments could materially adversely affect our business.

Risks Related to Our Finances and Capital Structure

We have a significant amount of indebtedness, which exposes us to leverage risks and subjects us to covenants which may adversely affect our operations.

At March 15, 2019, we had total outstanding indebtedness of approximately $817.6 million under our 2017 Credit Agreement and our 1.50% convertible senior notes due 2021 (the "Notes"), meaning that we are significantly leveraged. In addition, we have the ability to borrow additional amounts under our 2017 Credit Agreement, including the revolving credit facility, for a variety of purposes, including, among others, acquisitions and stock repurchases. Our leverage position may, among other things:

- limit our ability to obtain additional debt financing in the future for working capital, capital expenditures, acquisitions, or other general corporate purposes;

- require us to dedicate a substantial portion of our cash flow from operations to debt service, reducing the availability of our cash flow for other purposes;

- require us to repatriate cash for debt service from our foreign subsidiaries resulting in dividend tax costs or require us to adopt other disadvantageous tax structures to accommodate debt service payments; or

- increase our vulnerability to economic downturns, limit our ability to capitalize on significant business opportunities, and restrict our flexibility to react to changes in market or industry conditions.

In addition, because our indebtedness under our 2017 Credit Agreement bears interest at a variable rate, we are exposed to risk from fluctuations in interest rates. Interest rates on loans under the 2017 Credit Agreement are periodically reset, at our option, at either a Eurodollar Rate or an ABR rate (each as defined in the 2017 Credit Agreement), plus in each case a margin. The Financial Conduct Authority of the United Kingdom plans to phase out LIBOR by the end of 2021, and we have approached the administrative agent under this facility to discuss the impact of the planned phase out. However, it is currently uncertain what, if any. alternative reference interest rates or other reforms will be enacted in response to the planned phase out, and we cannot assure you that an alternative to LIBOR (on which the Eurodollar Rate is based) that we find acceptable will be available to us.

The revolving credit facility under our 2017 Credit Agreement contains a financial covenant that requires us to satisfy a maximum consolidated leverage ratio test. Our ability to comply with the leverage ratio covenant is dependent upon our ability to continue to generate sufficient earnings each quarter, or in the alternative, to reduce expenses and/or reduce the level of our outstanding debt, and we cannot assure that we will be successful in any or all of these regards.

Our 2017 Credit Agreement also includes a number of restrictive covenants which limit our ability to, among other things:

- incur additional indebtedness or liens or issue preferred stock;

- pay dividends or make other distributions or repurchase or redeem our stock or subordinated indebtedness;

- engage in transactions with affiliates;

- engage in sale-leaseback transactions;

- sell certain assets;

- change our lines of business;

- make investments, loans, or advances; and

- engage in consolidations, mergers, liquidations, or dissolutions.

These covenants could limit our ability to plan for or react to market conditions, to meet our capital needs, or to otherwise engage in transactions that might be considered beneficial to us.

If certain events of default occur under our 2017 Credit Agreement, our lenders could declare all amounts outstanding to be immediately due and payable. An acceleration of indebtedness under our 2017 Credit Agreement may also result in an event of default under the indenture governing the Notes. Additionally, if a change of control as defined in our 2017 Credit Agreement were to occur, the lenders under our credit facilities would have the right to require us to repay all of our outstanding obligations under the facilities.

If a fundamental change as defined in the indenture governing the Notes were to occur, the holders may require us to purchase for cash all or any portion of their Notes at 100% of the principal amount of the Notes, plus accrued and unpaid interest. Additionally, in the event the conditional conversion feature of the Notes is triggered, holders of the Notes will be entitled to convert their Notes during specified periods of time at their option. If one or more holders elect to convert their Notes, we may be required to settle all or a portion of our conversion obligation in cash, which could adversely affect our liquidity.

If any of the events described in the foregoing paragraphs were to occur, in order to satisfy our obligations we may be forced to seek an amendment of and/or waiver under our debt agreements, raise additional capital through securities offerings, asset sales, or other transactions, or seek to refinance or restructure our debt. In such a case, there can be no assurance that we will be able to consummate such a transaction on reasonable terms or at all.

We consider other financing and refinancing options from time to time, however, we cannot assure you that such options will be available to us on reasonable terms or at all. If one or more rating agencies were to downgrade our credit ratings, that could also impede our ability to refinance our existing debt or secure new debt, increase our future cost of borrowing, and create third-party concerns about our financial condition or results of operations.

If we are not able to generate sufficient cash domestically in order to fund our U.S. operations, strategic opportunities, and to service our debt, we may incur withholding taxes in order to repatriate certain overseas cash balances, or we may need to raise additional capital in the future.

On December 22, 2017 the Tax Cuts and Jobs Act (“2017 Tax Act”) was enacted in the United States. The 2017 Tax Act included significant changes to corporate taxation in the United States including a mandatory one-time tax on accumulated earnings of foreign subsidiaries. As a result, all deferred foreign earnings not previously subject to U.S. income tax have now been taxed and we therefore do not expect to incur any significant additional U.S. taxes related to such amounts. However, certain unremitted earnings may be subject to foreign withholding tax upon repatriation to the United States.

If the cash generated by our domestic operations, plus certain foreign cash which we would repatriate and for which we have accrued the related withholding tax, is not sufficient to fund our domestic operations, our broader corporate initiatives such as acquisitions, and other strategic opportunities, and to service our outstanding indebtedness, we may need to raise additional funds through public or private debt or equity financings, or we may need to obtain new credit facilities to the extent we choose not to repatriate additional overseas cash. Such additional financing may not be available on terms favorable to us, or at all, and any new equity financings or offerings would dilute our current stockholders’ ownership. Furthermore, lenders may not agree to extend us new, additional or continuing credit. If adequate funds are not available, or are not available on acceptable terms, we may be forced to repatriate foreign cash and incur a significant tax cost (in addition to amounts previously accrued) or we may not be able to take advantage of strategic opportunities, develop new products, respond to competitive pressures, repurchase outstanding stock or repay our outstanding indebtedness. In any such case, our business, operating results or financial condition could be adversely impacted.

We may be adversely affected by our acquisition of CTI or our historical affiliation with CTI and its former subsidiaries.

As a result of the February 2013 acquisition of our former parent company, CTI (the “CTI Merger”), CTI’s liabilities, including contingent liabilities, have been consolidated into our financial statements. If CTI’s liabilities are greater than represented, if the contingent liabilities we have assumed become fixed, or if there are obligations of CTI of which we were not aware at the time of completion of the CTI Merger, we may have exposure for those obligations and our business or financial condition could be materially and adversely affected. Adjustments to the CTI consolidated group’s tax liability for periods prior to the CTI Merger could also affect the net operating losses (“NOLs”) allocated to Verint as a result of the CTI Merger and cause us to incur additional tax liability in future periods. In addition, adjustments to the historical CTI consolidated group’s tax liability for periods prior to Verint’s IPO could affect the NOLs allocated to Verint in the IPO and cause us to incur additional tax liability in future periods.

We are entitled to certain indemnification rights from the successor to CTI’s business operations (Mavenir Inc.) under the agreements entered into in connection with the distribution by CTI to its shareholders of substantially all of its assets other than its interest in us (the “Comverse Share Distribution”) prior to the CTI Merger. However, there is no assurance that Mavenir will be willing and able to provide such indemnification if needed. If we become responsible for liabilities not covered by indemnification or substantially in excess of amounts covered by indemnification, or if Mavenir becomes unwilling or unable to stand behind such protections, our financial condition and results of operations could be materially and adversely affected.

Our financial results may be significantly impacted by changes in our tax position.

We are subject to taxes in the United States and numerous foreign jurisdictions. Our future effective tax rates could be affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in valuation allowance on deferred tax assets (including our NOL carryforwards), changes in unrecognized tax benefits, or changes in tax laws or their interpretation. Any of these changes could have a material adverse effect on our profitability. In addition, the tax authorities in the jurisdictions in which we operate, including the United States, may from time to time review the pricing arrangements between us and our foreign subsidiaries or among our foreign subsidiaries. An adverse determination by one or more tax authorities in this regard may have a material adverse effect on our financial results.

We have significant deferred tax assets which can provide us with significant future cash tax savings if we are able to use them, including significant NOLs inherited as a result of the CTI Merger. However, the extent to which we will be able to use these NOLs may be impacted, restricted, or eliminated by a number of factors, including changes in tax rates, laws or regulations, whether we generate sufficient future taxable income, and possible adjustments to the tax attributes of CTI or its non-Verint subsidiaries for periods prior to the CTI Merger. To the extent that we are unable to utilize our NOLs or other losses, our results of operations, liquidity, and financial condition could be materially adversely affected. When we cease to have NOLs available to us in a particular tax jurisdiction, either through their expiration, disallowance, or utilization, our cash tax liability will increase in that jurisdiction.

In addition, on December 22, 2017, the 2017 Tax Act was enacted in the United States. The 2017 Tax Act significantly revised the Internal Revenue Code of 1986, as amended, and it includes fundamental changes to taxation of U.S. multinational corporations. Compliance with the 2017 Tax Act requires significant complex computations not previously required by U.S. tax law.

The key provisions of the 2017 Tax Act, which may significantly impact our current and future effective tax rates, include new limitations on the tax deductions for interest expense and executive compensation, elimination of the alternative minimum tax ("AMT") and the ability to refund unused AMT credits over a four-year period, and new rules related to uses and limitations of NOL carryforwards. New international provisions add a new category of deemed income from our foreign operations, eliminate U.S. tax on foreign dividends (subject to certain restrictions), and add a minimum tax on certain payments made to foreign related parties.

Changes in accounting principles, or interpretations thereof, could adversely impact our financial condition or operating results.

We prepare our Consolidated Financial Statements in accordance with U.S. generally accepted accounting principles ("GAAP"). These principles are subject to interpretation by the SEC and other organizations that develop and interpret accounting principles. New accounting principles arise regularly, implementation of which can have a significant effect on and may increase the volatility of our reported operating results and may even retroactively affect previously reported operating results. In addition, the implementation of new accounting principles may require significant changes to our customer and vendor contracts, business processes, accounting systems, and internal controls over financial reporting. The costs and effects of these changes could adversely impact our operating results, and difficulties in implementing new accounting principles could cause us to fail to meet our financial reporting obligations.

Our internal controls over financial reporting may not prevent misstatements and material weaknesses or deficiencies could arise in the future which could lead to restatements or filing delays.

Our system of internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external reporting purposes in accordance with GAAP. Because of its inherent limitations, internal control over financial reporting may not prevent or detect every misstatement. An evaluation of effectiveness is subject to the risk that the controls may become inadequate because of changes in conditions, because the degree of compliance with policies or procedures decreases over time, or because of unanticipated circumstances or other factors. As a result, although our management has concluded that our internal controls are effective as of January 31, 2019, we cannot assure you that our internal controls will prevent or detect every misstatement, that material weaknesses or other deficiencies will not occur or be identified in the future, that this or future financial reports will not contain material misstatements or omissions, that future restatements will not be required, or that we will be able to timely comply with our reporting obligations in the future.

If our goodwill or other intangible assets become impaired, our financial condition and results of operations could be negatively affected.

Because we have historically acquired a significant number of companies, goodwill and other intangible assets have represented a substantial portion of our assets. Goodwill and other intangible assets totaled approximately $1.6 billion, or approximately 57% of our total assets, as of January 31, 2019. We test our goodwill for impairment at least annually, or more frequently if an event occurs indicating the potential for impairment, and we assess on an as-needed basis whether there have been impairments in our other intangible assets. We make assumptions and estimates in this assessment which are complex and often subjective. These assumptions and estimates can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors such as changes in our business strategy or our internal forecasts. To the extent that the factors described above change, we could be required to record additional non-cash impairment charges in the future, which could negatively affect our financial condition and results of operations.

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Our international operations subject us to currency exchange risk.

We earn revenue, pay expenses, own assets, and incur liabilities in countries using currencies other than the U.S. dollar, including the Israeli shekel, euro, British pound sterling, Singapore dollar, Brazilian real, and Australia dollar, among others. Because our consolidated financial statements are presented in U.S. dollars, we must translate revenue, expenses, assets, and liabilities of entities using non-U.S. dollar functional currencies into U.S. dollars using currency exchange rates in effect during or at the end of each reporting period, meaning that we are exposed to the impact of changes in currency exchange rates. In addition, our net income is impacted by the revaluation and settlement of monetary assets and liabilities denominated in currencies other than an entity's functional currency, gains or losses on which are recorded within other income (expense), net. We attempt to mitigate a portion of these risks through foreign currency hedging, based on our judgment of the appropriate trade-offs among risk, opportunity and expense. However, our hedging activities are limited in scope and duration and may not be effective at reducing the U.S. dollar cost of our global operations.

In addition, our financial outlooks do not assume fluctuations in currency exchange rates. Adverse fluctuations in currency exchange rates subsequent to providing our financial outlooks could cause our actual results to differ materially from those anticipated in our outlooks, which could negatively affect the price of our common stock.

The prices of our common stock and the Notes have been, and may continue to be, volatile and your investment could lose value.

The prices of our common stock and the Notes have been, and may continue to be, volatile. Those prices could be affected by any of the risk factors discussed in this Item. In addition, other factors that could impact the prices of our common stock and/or the Notes include:

- announcements by us or our competitors regarding, among other things, strategic changes, new products, product enhancements or technological advances, acquisitions, major transactions, significant litigation or regulatory matters, stock repurchases, or management changes;

- press or analyst publications, including with respect to changes in recommendations or earnings estimates or growth rates by financial analysts, changes in investors' or analysts' valuation measures for our securities, our credit ratings, our security solutions and customers, speculation regarding strategy or M&A, or market trends unrelated to our performance;

- stock sales by our directors, officers, or other significant holders, or stock repurchases by us;

- hedging or arbitrage trading activity by third parties, including by the counterparties to the note hedge and warrant transactions that we entered into in connection with the issuance of the Notes; and

- dilution that may occur upon any conversion of the Notes.

A significant drop in the price of our common stock or the Notes could also expose us to the risk of securities class action lawsuits, which could result in substantial costs and divert management's attention and resources, which could adversely affect our business.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The following describes our material properties as of the date of this report.
We lease a total of approximately 1,155,000 square feet of office space covering approximately 80 offices around the world and we own an aggregate of approximately 79,000 square feet of office space at three sites in Scotland, Germany, and Indonesia.

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Other than as described below, these properties are comprised of small and mid-sized facilities that are used to support our administrative, marketing, manufacturing, product development, sales, training, support, and services needs for our two operating segments.

Our corporate headquarters is located in a leased facility in Melville, New York, and consists of approximately 49,000 square feet of space under a lease that we entered into on February 13, 2015 and that expires in 2027. The Melville facility is used primarily by our executive management and corporate groups, including finance, legal, and human resources, as well as for customer support and services for our Customer Engagement operations.

We lease approximately 133,000 square feet of space at a facility in Alpharetta, Georgia under a lease that expires in 2026. The Alpharetta facility is used primarily by the administrative, marketing, product development, support, and sales groups for our Customer Engagement operations.

We also occupy approximately 176,000 square feet of space at our main facility in Herzliya, Israel under a lease that we renewed on October 1, 2015 and that expires in 2025. This Herzliya facility is used primarily for manufacturing, storage, development, sales, marketing, and support related to our Cyber Intelligence operations, as well as for product development related to our Customer Engagement solutions.

From time to time, we may lease or sublease portions of our owned or leased facilities to third parties based on our operational needs. For additional information regarding our lease obligations, see Note 15, “Commitments and Contingencies” to our consolidated financial statements included under Item 8 of this report.

We believe that our leased and owned facilities are in good operating condition and are adequate for our current requirements, although changes in our business may require us to acquire additional facilities or modify existing facilities. We believe that alternative locations are available on commercially reasonable terms in all areas where we currently do business.

Item 3. Legal Proceedings

In March 2009, one of our former employees, Ms. Orit Deutsch, commenced legal actions in Israel against our primary Israeli subsidiary, Verint Systems Limited (“VSL”), (Case Number 4186/09) and against our affiliate CTI (Case Number 1335/09). Also in March 2009, a former employee of Comverse Limited (CTI’s primary Israeli subsidiary at the time), Ms. Roni Katriel, commenced similar legal actions in Israel against Comverse Limited (Case Number 3444/09), and against CTI (Case Number 1334/09). In these actions, the plaintiffs generally sought to certify class action suits against the defendants on behalf of current and former employees of VSL and Comverse Limited who had been granted stock options in Verint and/or CTI and who were allegedly damaged as a result of a suspension on option exercises during an extended filing delay period that is discussed in our and CTI’s historical public filings. On June 7, 2012, the Tel Aviv District Court, where the cases had been filed or transferred, allowed the plaintiffs to consolidate and amend their complaints against the three defendants: VSL, CTI, and Comverse Limited.

On October 31, 2012, CTI completed the Comverse Share Distribution, in which it distributed all of the outstanding shares of common stock of Comverse, Inc., its principal operating subsidiary and parent company of Comverse Limited, to CTI’s shareholders. In the period leading up to the Comverse Share Distribution, CTI either sold or transferred substantially all of its business operations and assets (other than its equity ownership interests in Verint and in its then-subsidiary, Comverse, Inc.) to Comverse, Inc. or to unaffiliated third parties. As a result of these transactions, Comverse Inc. became an independent company and ceased to be affiliated with CTI, and CTI ceased to have any material assets other than its equity interests in Verint. Prior to the completion of the Comverse Share Distribution, the plaintiffs sought to compel CTI to set aside up to $150.0 million in assets to secure any future judgment, but the District Court did not rule on this motion. In February 2017, Mavenir Inc. became successor-in-interest to Comverse, Inc.

On February 4, 2013, Verint acquired the remaining CTI shell company in the CTI Merger. As a result of the CTI Merger, Verint assumed certain rights and liabilities of CTI, including any liability of CTI arising out of the foregoing legal actions. However, under the terms of a Distribution Agreement entered into in connection with the Comverse Share Distribution, we, as successor to CTI, are entitled to indemnification from Comverse, Inc. (now Mavenir) for any losses we may suffer in our capacity as successor to CTI related to the foregoing legal actions.

Following an unsuccessful mediation process, on August 28, 2016, the District Court (i) denied the plaintiffs' motion to certify the suit as a class action with respect to all claims relating to Verint stock options and (ii) approved the plaintiffs' motion to certify the suit as a class action with respect to claims of current or former employees of Comverse Limited (now part of

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Mavenir) or of VSL who held unexercised CTI stock options at the time CTI suspended option exercises. The court also ruled that the merits of the case would be evaluated under New York law. As a result of this ruling (which excluded claims related to Verint stock options from the case), one of the original plaintiffs in the case, Ms. Deutsch, was replaced by a new representative plaintiff, Mr. David Vaaknin. CTI appealed portions of the District Court’s ruling to the Israeli Supreme Court. On August 8, 2017, the Israeli Supreme Court partially allowed CTI’s appeal and ordered the case to be returned to the District Court to determine whether a cause of action exists under New York law based on the parties’ expert opinions.

Following a second unsuccessful round of mediation in mid to late 2018, the proceedings resumed. The plaintiffs have filed a motion to amend the class certification motion and CTI has filed a corresponding motion to dismiss and a response. The next court hearing is scheduled for April 2019.

From time to time we or our subsidiaries may be involved in legal proceedings and/or litigation arising in the ordinary course of our business. While the outcome of these matters cannot be predicted with certainty, we do not believe that the outcome of any current claims will have a material effect on our consolidated financial position, results of operations, or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

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PART II

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

Market Information

Our common stock trades on the NASDAQ Global Select Market under the symbol “VRNT”.

Holders

There were approximately 1,750 holders of record of our common stock at March 15, 2019. Such record holders include holders who are nominees for an undetermined number of beneficial owners.

Dividends

We have not declared or paid any cash dividends on our equity securities and have no current plans to pay any dividends on our equity securities. We intend to retain our earnings to finance the development of our business, repay debt, and for other corporate purposes. Any future determination as to the payment of dividends on our common stock will be made by our board of directors at its discretion, subject to the limitations contained in our 2017 Credit Agreement and will depend upon our earnings, financial condition, capital requirements, and other relevant factors.

For equity compensation plan information, please refer to Item 12 in Part III of this Annual Report.

Stock Performance Graph

The following table compares the cumulative total stockholder return on our common stock with the cumulative total return on the NASDAQ Composite Index and the NASDAQ Computer & Data Processing Services Index, assuming an investment of $100 on January 31, 2014 through January 31, 2019, and the reinvestment of any dividends. The comparisons in the graph below are based upon the closing sale prices on NASDAQ for our common stock from January 31, 2014 through January 31, 2019. This data is not indicative of, nor intended to forecast, future performance of our common stock.

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January 31,	2014	2015	2016	2017	2018	2019
Verint Systems Inc.	$100.00	$117.47	$80.57	$82.20	$91.88	$106.45
NASDAQ Composite Index	$100.00	$114.30	$115.10	$141.84	$189.26	$187.97
NASDAQ Computer & Data Processing Index	$100.00	$105.64	$132.80	$154.15	$223.67	$227.03

Note: This graph shall not be deemed “filed” for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section nor shall it be deemed incorporated by reference in any filing under the Securities Act or the Exchange Act, regardless of any general incorporation language in such filing.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

On March 29, 2016, we announced that our board of directors had authorized a common stock repurchase program of up to $150 million over two years. This program expired on March 29, 2018. We made a total of $46.9 million in repurchases under the program.

From time to time, we have purchased treasury stock from directors, officers, and other employees to facilitate income tax withholding and payment requirements upon vesting of equity awards during a Company-imposed trading blackout or lockup periods. There was no such activity during the three months ended January 31, 2019.

Item 6. Selected Financial Data

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The following selected consolidated financial data has been derived from our audited consolidated financial statements. The data below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" under Item 7 and our consolidated financial statements and notes thereto included under Item 8 of this report.

Our historical results should not be viewed as indicative of results expected for any future period.

Five-Year Selected Financial Highlights:

Consolidated Statements of Operations Data

	Year Ended January 31,				
(in thousands, except per share data)	2019	2018	2017	2016	2015
Revenue	$1,229,747	$1,135,229	$1,062,106	$1,130,266	$1,128,436
Operating income	$114,235	$48,630	$17,366	$67,852	$79,111
Net income (loss)	$70,220	$(3,454)	$(26,246)	$22,228	$36,402
Net income (loss) attributable to Verint Systems Inc.	$65,991	$(6,627)	$(29,380)	$17,638	$30,931
Net income (loss) attributable to Verint Systems Inc. common shares	$65,991	$(6,627)	$(29,380)	$17,638	$30,931
Net income (loss) per share attributable to Verint Systems Inc.:					
Basic	$1.02	$(0.10)	$(0.47)	$0.29	$0.53
Diluted	$1.00	$(0.10)	$(0.47)	$0.28	$0.52
Weighted-average shares:					
Basic	64,913	63,312	62,593	61,813	58,096
Diluted	66,245	63,312	62,593	62,921	59,374

We have never declared a cash dividend to common stockholders.

Consolidated Balance Sheet Data

	January 31,				
(in thousands)	2019	2018	2017	2016	2015
Total assets	$2,867,027	$2,580,620	$2,362,784	$2,355,735	$2,340,452
Long-term debt, including current maturities	$782,128	$772,984	$748,871	$738,087	$726,258
Capital lease obligations, including current portions	$4,282	$4,350	$68	$—	$—
Total stockholders' equity	$1,260,804	$1,132,336	$1,015,040	$1,068,164	$1,004,903

The consolidated financial data as of and for the year ended January 31, 2019 reflects our February 1, 2018 adoption of ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606), further details for which appear in Note 2, "Revenue Recognition" to our consolidated financial statements included under Item 8 of this report.

During the five-year period ended January 31, 2019, we acquired a number of businesses, the operating results of which have been included in our consolidated financial statements since their respective acquisition dates. Further details regarding our business combinations for the three years ended January 31, 2019 appear in Note 5, "Business Combinations" to our consolidated financial statements included under Item 8 of this report.

In addition to business combinations, our consolidated operating results and consolidated financial condition during the five-year period ended January 31, 2019 included the following other notable transactions and items:

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As of and for the year ended January 31,	Description
2018	• Losses on early retirements of debt of $2.2 million, associated with refinancing and amending our Credit Agreement.
	• Provisional deferred income tax expense of $15.0 million related to withholding on foreign earnings which may be repatriated.
2015	• An income tax benefit of $44.4 million resulting from the reduction of a valuation allowance on our deferred income tax assets recorded in connection with a business combination.
	• Losses on early retirements of debt of $12.5 million, primarily associated with an amendment to our Credit Agreement and the early partial retirement of our term loans.

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

The following management's discussion and analysis of our financial condition and results of operations should be read in conjunction with "Business" under Item 1, "Selected Financial Data" under Item 6, and our consolidated financial statements and the related notes thereto included under Item 8 of this report. This discussion contains a number of forward-looking statements, all of which are based on our current expectations and all of which could be affected by uncertainties and risks. Our actual results may differ materially from the results contemplated in these forward-looking statements as a result of many factors including, but not limited to, those described in "Risk Factors" under Item 1A of this report.

Overview

Our Business

Verint is a global leader in Actionable Intelligence solutions. In a world of massive information growth, our solutions empower organizations with crucial, actionable insights and enable decision makers to anticipate, respond, and take action. Today, over 10,000 organizations in more than 180 countries, including over 85 percent of the Fortune 100, use Verint's Actionable Intelligence solutions, deployed in the cloud and on premises, to make more informed, timely, and effective decisions.

Our Actionable Intelligence leadership is powered by innovative, enterprise-class software built with artificial intelligence, analytics, automation, and deep domain expertise established by working closely with some of the most sophisticated and forward-thinking organizations in the world. We believe we have one of the industry's strongest R&D teams focused on actionable intelligence consisting of 1,900 professionals. Our innovative solutions are backed-up by a strong IP portfolio with close to 1,000 patents and patent applications worldwide across data capture, artificial intelligence, unstructured data analytics, predictive analytics and automation.

Verint's Actionable Intelligence strategy is focused on two use cases and the company has two operating segments: Customer Engagement Solutions and Cyber Intelligence Solutions. For the years ended January 31, 2019, 2018, and 2017, our Customer Engagement segment represented approximately 65%, 65%, and 66% of our total revenue, respectively, while for those same years, our Cyber Intelligence segment represented approximately 35%, 35%, and 34% of our total revenue, respectively.

Key Trends and Factors That May Impact our Performance

We see the following trends and factors which may impact our performance:

Customer Engagement

- Reducing Complexity and Enhancing Agility. Many organizations have complex environments that were assembled over many years, with multiple legacy systems from many different vendors deployed in silos across the enterprise. To reduce complexity and simplify operations, these organizations are looking for new solutions that are open and flexible and make it easier to address evolving requirements, while protecting their legacy investments. Organizations are also seeking open platforms that address their customer engagement needs across many enterprise functions,

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including the contact center, back-office and branch operations, self-service, e-commerce, customer experience, marketing, IT, and compliance.

- Modernizing Customer Engagement IT Architectures. Many organizations are looking to modernize their legacy customer engagement operations by transitioning to the cloud, adopting modern architectures that facilitate the orchestration of disparate systems and the sharing of data across enterprise functions. Organizations which are at different stages of migrating to the cloud and other modernization initiatives are also looking for vendors that can help them evolve customer engagement at their own pace with minimal disruption to their operations.

- Automating Customer Engagement Operations. Many organizations are seeking solutions that incorporate machine learning and analytics to reduce manual work and increase workforce efficiency through automation. They also seek to empower their customers with self-service backed by AI-powered bots and human/bot collaboration, to elevate the customer experience in a fast, personalized way.

Cyber Intelligence

- Security Threats Becoming Increasingly Pervasive and Complex. Governments, critical infrastructure providers, and enterprises face many types of security threats from criminal and terrorist organizations and foreign governments. Some of these security threats come from well-organized and well-funded organizations that utilize new and increasingly sophisticated methods. As a result, security and intelligence organizations find it more difficult and complicated to detect, investigate and neutralize threats. Many of these organizations are seeking to deploy more advanced data mining solutions that can help them capture and analyze data from multiple sources to effectively and efficiently address the challenge of increased sophistication and complexity.

- Shortage of Security Analysts Increasing the Need for Automation. Security organizations are using data mining solutions to help conduct investigations and generate actionable insights. Typically, data mining solutions require security organizations to employ intelligence analysts and data scientists to operate them. However, there is a shortage of such qualified personnel globally leading to elongated investigations and increased risk that security threats go undetected or are not addressed. To overcome this challenge, many security organizations are seeking advanced data mining solutions that automate functions historically performed manually to improve the quality and speed of investigations and intelligence production. These organizations are also increasingly seeking artificial intelligence and other advanced data analysis tools to gain intelligence faster with fewer analysts and data scientists.

- Need for Predictive Intelligence as a Force Multiplier. Predictive intelligence is generated by correlating massive amounts of data from a wide range of disparate sources to uncover previously unknown connections, identify suspicious behaviors using advanced analytics, and predict future events. Predictive intelligence is a force multiplier, enabling security organizations to allocate resources more effectively to prioritize various operational tasks based on actionable intelligence. Security organizations are seeking advanced data mining solutions that can generate accurate and actionable predictive intelligence to shorten investigation times and empower their teams with greater insights.

See Item 1, “Business”, of this report for more information on key trends that we believe are driving demand for our solutions and “Risk Factors” under Item 1A of this report for a more complete description of risks that may impact future revenue and profitability.

Critical Accounting Policies and Estimates

An appreciation of our critical accounting policies is necessary to understand our financial results. The accounting policies outlined below are considered to be critical because they can materially affect our operating results and financial condition, as these policies may require us to make difficult and subjective judgments regarding uncertainties. The accuracy of these estimates and the likelihood of future changes depend on a range of possible outcomes and a number of underlying variables, many of which are beyond our control, and there can be no assurance that our estimates are accurate.

Revenue Recognition

We derive and report our revenue in two categories: (a) product revenue, including licensing of software products and sale of hardware products (which include software that works together with the hardware to deliver the product's essential functionality), and (b) service and support revenue, including revenue from installation services, post-contract customer support ("PCS"), project management, hosting services, SaaS, managed services, product warranties, business advisory consulting and training services. We recognize revenue when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration that we expect to receive in exchange for those goods or services. We generate all of our revenue from contracts with customers.

We account for revenue in accordance with Accounting Standards Update ("ASU") No. 2014-09, Revenue from Contracts with Customers (Topic 606). Our revenue recognition policies require us to make significant judgments and estimates. In applying our revenue recognition policy, we must determine which portions of our revenue are recognized at a point in time (generally product revenue) and which portions must be deferred and recognized over time (generally services and support revenue). We analyze various factors including, but not limited to, the selling price of undelivered services when sold on a stand-alone basis, our pricing policies, the creditworthiness of our customers, and contractual terms and conditions in helping us to make such judgments about revenue recognition. Changes in judgment on any of these factors could materially impact the timing and amount of revenue recognized in a given period.

Our contracts with customers often include promises to transfer multiple products and services to a customer. Typically, our customer contracts include perpetual or term-based licenses, professional services, and PCS. In contracts with multiple performance obligations, we identify each performance obligation and evaluate whether the performance obligations are distinct within the context of the contract at contract inception. Performance obligations that are not distinct at contract inception are combined. Contracts that include software customization may result in the combination of the customization services with the software license as one distinct performance obligation. The transaction price is generally in the form of a fixed fee at contract inception, and excludes taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, that are collected by us from a customer.

We allocate the transaction price to each distinct performance obligation based on the estimated standalone selling price ("SSP") for each performance 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 estimate the SSP of each performance obligation based on either a cost-plus-margin approach or an adjusted market assessment approach. We may have more than one SSP for individual products and services due to the stratification of those products and services by customers and circumstances. In these instances, we may use information such as the size of the customer and geographic region in determining the SSP.

We then look to how control transfers to the customer in order to determine the timing of revenue recognition. Software and product revenue is typically recognized when the software is delivered and/or made available for download as this is the point the user of the software can direct the use of, and obtain substantially all of the remaining benefits from the functional intellectual property. We do not recognize software revenue related to the renewal of software licenses earlier than the beginning of the renewal period. In contracts that include customer acceptance, we recognize revenue when we have delivered the software and received customer acceptance. We recognize revenue from PCS performance obligations, which includes software updates on a when-and-if-available basis, telephone support, and bug fixes or patches, over the term of the customer support agreement, which is typically one year. Revenue related to professional services and customer education services is typically recognized as the services are performed.

Some of our customer contracts require significant customization of the product to meet the particular requirements specified by each customer. The contract pricing is stated as a fixed amount and generally results in the transfer of control of the applicable performance obligation over time. We recognize revenue based on the proportion of labor hours expended to the total hours expected to complete the performance obligation. The determination of the total labor hours expected to complete the performance obligation on fixed fee contracts involves significant judgment. We incorporate revisions to hour and cost estimates when the causal facts become known. We measure our estimate of completion on fixed-price contracts, which in turn determines the amount of revenue we recognize, based primarily on actual hours incurred to date and our estimate of remaining hours necessary to complete the contract.

Our products are generally not sold with a right of return and credits and incentives granted have been minimal in both amount and frequency. Shipping and handling activities that are billed to customers and occur after control over a product has transferred to a customer are accounted for as fulfillment costs and are included in cost of revenue. Historically, these expenses have not been material.

Accounting for Business Combinations

We allocate the purchase price of acquired companies to the tangible and intangible assets acquired, including in-process research and development assets, and liabilities assumed, based upon their estimated fair values at the acquisition date. These fair values are typically estimated with assistance from independent valuation specialists. The purchase price allocation process

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requires us to make significant estimates and assumptions, especially at the acquisition date with respect to intangible assets, contractual support obligations assumed, contingent consideration arrangements, and pre-acquisition contingencies.

Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, 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 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 software license sales, support agreements, consulting contracts, other customer contracts, and acquired developed technologies;

- expected costs to develop in-process research and development into commercially viable products and estimated cash flows from the projects when completed;

- the acquired company's brand and competitive position, as well as assumptions about the period of time the acquired brand will continue to be used in the combined company's product portfolio;

- cost of capital and discount rates; and

- estimating the useful lives of acquired assets as well as the pattern or manner in which the assets will amortize.

In connection with the purchase price allocations for applicable acquisitions, we estimate the fair value of the contractual support obligations we are assuming from the acquired business. The estimated fair value of the support obligations is determined utilizing a cost build-up approach, which determines fair value by estimating the costs related to fulfilling the obligations plus a reasonable profit margin. The estimated costs to fulfill the support obligations are based on the historical direct costs related to providing the support services. The sum of these costs and operating profit represents an approximation of the amount that we would be required to pay a third party to assume the support obligations.

Impairment of Goodwill and Other Intangible Assets

We test goodwill for impairment at the reporting unit level, which can be an operating segment or one level below an operating segment, on an annual basis as of November 1, or more frequently if changes in facts and circumstances indicate that impairment in the value of goodwill may exist. As of January 31, 2019, our reporting units are Customer Engagement, Cyber Intelligence (excluding situational intelligence solutions), and Situational Intelligence, which is a component of our Cyber Intelligence operating segment.

In testing for goodwill impairment, we may elect to utilize a qualitative assessment to evaluate whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we elect to bypass a qualitative assessment, or if our qualitative assessment indicates that goodwill impairment is more likely than not, we perform quantitative impairment testing. For quantitative impairment testing performed prior to February 1, 2018, we performed a two-step test by first comparing the carrying value of the reporting unit to its fair value. If the carrying value exceeded the fair value, a second step was performed to compute the goodwill impairment. Effective with our February 1, 2018 adoption of ASU No. 2017-04, Intangibles-Goodwill and Other (Topic 350) - Simplifying the Test for Goodwill Impairment, if our quantitative testing determines that the carrying value of a reporting unit exceeds its fair value, goodwill impairment is recognized in an amount equal to that excess, limited to the total goodwill allocated to that reporting unit, eliminating the need for the second step.

For reporting units where we decide to perform a qualitative assessment, we assess and make judgments regarding a variety of factors which potentially impact the fair value of a reporting unit, including general economic conditions, industry and market-specific conditions, customer behavior, cost factors, our financial performance and trends, our strategies and business plans, capital requirements, management and personnel issues, and our stock price, among others. We then consider the totality of these and other factors, placing more weight on the events and circumstances that are judged to most affect a reporting unit's fair value or the carrying amount of its net assets, to reach a qualitative conclusion regarding whether it is more likely than not that the fair value of a reporting unit exceeds its carrying amount.

For reporting units where we perform quantitative impairment testing, we utilize one or more of three primary approaches to assess fair value: (a) an income-based approach, using projected discounted cash flows, (b) a market-based approach, using valuation multiples of comparable companies, and (c) a transaction-based approach, using valuation multiples for recent acquisitions of similar businesses made in the marketplace.

Our estimate of fair value of each reporting unit is based on a number of subjective factors, including: (a) appropriate consideration of valuation approaches (income approach, comparable public company approach, and comparable transaction approach), (b) estimates of future growth rates, (c) estimates of our future cost structure, (d) discount rates for our estimated cash flows, (e) selection of peer group companies for the comparable public company and the comparable transaction approaches, (f) required levels of working capital, (g) assumed terminal value, and (h) time horizon of cash flow forecasts.

The determination of reporting units also requires judgment. We assess whether a reporting unit exists within a reportable segment by identifying the unit, determining whether the unit qualifies as a business under GAAP, and assessing the availability and regular review by segment management of discrete financial information for the unit.

We review intangible assets that have finite useful lives and other long-lived assets when an event occurs indicating the potential for impairment. If any indicators are present, we perform a recoverability test by comparing the sum of the estimated undiscounted future cash flows attributable to the assets in question to their carrying amounts. If the undiscounted cash flows used in the test for recoverability are less than the long-lived assets carrying amount, we determine the fair value of the long-lived asset and recognize an impairment loss if the carrying amount of the long-lived asset exceeds its fair value. The impairment loss recognized is the amount by which the carrying amount of the long-lived asset exceeds its fair value.

For all of our goodwill and other intangible asset impairment reviews, the assumptions and estimates used in the process are complex and often subjective. They can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors such as changes in our business strategy or our internal forecasts. Although we believe the assumptions, judgments, and estimates we have used in our assessments are reasonable and appropriate, a material change in any of our assumptions or external factors could lead to future goodwill or other intangible asset impairment charges.

Based upon our November 1, 2018 qualitative goodwill impairment review of each reporting unit, we determined that it is more likely than not that the fair value of each of our reporting units substantially exceeds the respective carrying amounts. Accordingly, there was no indication of impairment and a quantitative goodwill impairment test was not performed. Based on our November 1, 2017 quantitative goodwill impairment reviews, we concluded that the estimated fair values of all of our reporting units significantly exceeded their carrying values. Our Customer Engagement, Cyber Intelligence, and Situational Intelligence reporting units carried goodwill of $1.3 billion, $124.9 million, and $22.3 million, respectively, at January 31, 2019.

Income Taxes

We account for income taxes under the asset and liability method, which includes the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in our consolidated financial statements. Under this approach, deferred taxes are recorded for the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid. The provision for income taxes represents income taxes paid or payable for the current year plus deferred taxes. Deferred taxes result from differences between the financial statement and tax bases of our assets and liabilities, and are adjusted for changes in tax rates and tax laws when changes are enacted. The effects of future changes in income tax laws or rates are not anticipated.

We are subject to income taxes in the United States and numerous foreign jurisdictions. The calculation of our income tax provision involves the application of complex tax laws and requires significant judgment and estimates. On

December 22, 2017, the 2017 Tax Act was enacted in the United States. The 2017 Tax Act significantly revised the Internal Revenue Code of 1986, as amended, and it included fundamental changes to taxation of U.S. multinational corporations. Compliance with the 2017 Tax Act requires significant complex computations not previously required by U.S. tax law.

We evaluate the realizability of our deferred tax assets for each jurisdiction in which we operate at each reporting date, and we establish a valuation allowance when it is more likely than not that all or a portion of our deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income of the same character and in the same jurisdiction. We consider all available positive and negative evidence in making this assessment, including, but not limited to, the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies. In circumstances where there is sufficient negative evidence indicating that our deferred tax assets are not more likely than not realizable, we establish a valuation allowance.

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We use a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate tax positions taken or expected to be taken in a tax return by assessing whether they are more likely than not sustainable, based solely on their technical merits, upon examination, and including resolution of any related appeals or litigation process. The second step is to measure the associated tax benefit of each position as the largest amount that we believe is more likely than not realizable. Differences between the amount of tax benefits taken or expected to be taken in our income tax returns and the amount of tax benefits recognized in our financial statements represent our unrecognized income tax benefits, which we either record as a liability or as a reduction of deferred tax assets. Our policy is to include interest (expense and/or income) and penalties related to unrecognized income tax benefits as a component of the provision for income taxes.

Contingencies

We recognize an estimated loss from a claim or loss contingency when and if information available prior to issuance of the financial statements indicates that it is probable that an asset has been impaired or a liability has been incurred at the date of the financial statements and the amount of the loss can be reasonably estimated. Accounting for claims and contingencies requires the use of significant judgment and estimates. One notable potential source of loss contingencies is pending or threatened litigation. Legal counsel and other advisors and experts are consulted on issues related to litigation as well as on matters related to contingencies occurring in the ordinary course of business.

Accounting for Stock-Based Compensation

We recognize the cost of employee services received in exchange for awards of equity instruments based on the grant-date fair value of the award.

During the three-year period ended January 31, 2019, restricted stock units were our predominant stock-based payment award. The fair value of these awards is equivalent to the market value of our common stock on the grant date.

We periodically award restricted stock units to executive officers and certain employees that vest upon the achievement of specified performance goals or market conditions. The recognition of the compensation costs of the performance-based awards with performance goals requires an assessment of the probability that the specified performance criteria will be achieved. At each reporting date, we update our assessment of the probability that the specified performance criteria will be achieved and adjust our estimate of the fair value of the award, if necessary. For the performance-based awards with market conditions, the condition is incorporated into the grant date fair value valuation of the award and compensation costs are recognized even if the market condition is not satisfied.

Changes in assumptions can materially affect the estimate of fair value of stock-based compensation and, consequently, the related expense recognized. The assumptions we use in calculating the fair value of stock-based payment awards represent our best estimates, which involve inherent uncertainties and the application of judgment. As a result, if factors change and we use different assumptions, our stock-based compensation expense could be materially different in the future.

Results of Operations

Seasonality and Cyclicality

As is typical for many software and technology companies, our business is subject to seasonal and cyclical factors. In most years, our revenue and operating income are typically highest in the fourth quarter and lowest in the first quarter (prior to the impact of unusual or nonrecurring items). Moreover, revenue and operating income in the first quarter of a new year may be lower than in the fourth quarter of the preceding year, in some years, by a significant margin. In addition, we generally receive a higher volume of orders in the last month of a quarter, with orders concentrated in the later part of that month. We believe that these seasonal and cyclical factors primarily reflect customer spending patterns and budget cycles, as well as the impact of incentive compensation plans for our sales personnel. While seasonal and cyclical factors such as these are common in the software and technology industry, this pattern should not be considered a reliable indicator of our future revenue or financial performance. Many other factors, including general economic conditions, may also have an impact on our business and financial results.

Overview of Operating Results

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The following table sets forth a summary of certain key financial information for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,		
(in thousands, except per share data)	2019	2018	2017
Revenue	$1,229,747	$1,135,229	$1,062,106
Operating income	$114,235	$48,630	$17,366
Net income (loss) attributable to Verint Systems Inc.	$65,991	$(6,627)	$(29,380)
Net income (loss) per common share attributable to Verint Systems Inc.:			
Basic	$1.02	$(0.10)	$(0.47)
Diluted	$1.00	$(0.10)	$(0.47)

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Our revenue increased approximately $94.5 million, or 8%, from $1,135.2 million in the year ended January 31, 2018 to $1,229.7 million in the year ended January 31, 2019. The increase consisted of a $55.0 million increase in product revenue and a $39.5 million increase in service and support revenue. In our Customer Engagement segment, revenue increased approximately $56.2 million, or 8%, from $740.1 million in the year ended January 31, 2018 to $796.3 million in the year ended January 31, 2019. The increase consisted of a $37.5 million increase in product revenue and an $18.7 million increase in service and support revenue. In our Cyber Intelligence segment, revenue increased approximately $38.3 million, or 10%, from $395.2 million in the year ended January 31, 2018 to $433.5 million in the year ended January 31, 2019. The increase consisted of a $20.8 million increase in service and support revenue and $17.5 million increase in product revenue. For additional details on our revenue by segment, see "—Revenue by Operating Segment". Revenue in the Americas, EMEA, and APAC represented approximately 54%, 26%, and 20% of our total revenue, respectively, in the year ended January 31, 2019, compared to approximately 53%, 31%, and 16%, respectively, in the year ended January 31, 2018. Further details of changes in revenue are provided below.

Operating income was $114.2 million in the year ended January 31, 2019 compared to $48.6 million in the year ended January 31, 2018. This increase in operating income was primarily due to a $92.1 million increase in gross profit, reflecting increased gross profit in both of our segments and a decrease in amortization of acquired technology intangible assets, partially offset by a $26.5 million increase in operating expenses, which primarily consisted of an $18.5 million increase in net research and development expenses and an $11.2 million increase in selling, general and administrative expenses, partially offset by a $3.2 million decrease in amortization of other acquired intangible assets. Further details of changes in operating income are provided below.

Net income attributable to Verint Systems Inc. was $66.0 million, and diluted net income per common share was $1.00, in the year ended January 31, 2019, compared to a net loss attributable to Verint Systems Inc. of $6.6 million, and net loss per common share of $0.10, in the year ended January 31, 2018. These improved operating results in the year ended January 31, 2019 were primarily due to a $65.6 million increase in operating income, as described above, and a $14.9 million decrease in our provision for income taxes primarily resulting from a decrease in accrued withholding taxes and the release of certain valuation allowances, partially offset by a $6.8 million increase in total other expense, net, and a $1.1 million increase in net income attributable to our noncontrolling interests. Further details of these changes are provided below.

A portion of our business is conducted in currencies other than the U.S. dollar, and therefore our revenue and operating expenses are affected by fluctuations in applicable foreign currency exchange rates. When comparing average exchange rates for the year ended January 31, 2019 to average exchange rates for the year ended January 31, 2018, the U.S. dollar strengthened relative to the Brazilian real and Australian dollar resulting in an overall decrease in our revenue on a U.S. dollar-denominated basis. Furthermore, the U.S. dollar weakened relative to our hedged Israeli shekel rate, euro, and British pound sterling, resulting in an overall increase in operating expenses on a U.S. dollar-denominated basis. For the year ended January 31, 2019, had foreign exchange rates remained unchanged from rates in effect for the year ended January 31, 2018, our revenue would have been approximately $0.7 million higher and our cost of revenue and operating expenses on a combined basis would have been approximately $7.8 million lower, which would have resulted in a $8.5 million increase in operating income.

As of January 31, 2019, we employed approximately 6,100 professionals, including part-time employees and certain contractors, compared to approximately 5,200 at January 31, 2018.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Our revenue increased approximately $73.1 million, or 7%, from $1,062.1 million in the year ended January 31, 2017 to $1,135.2 million in the year ended January 31, 2018. The increase consisted of a $52.0 million increase in service and support revenue and a $21.1 million increase in product revenue.

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In our Cyber Intelligence segment, revenue increased approximately $39.0 million, or 11%, from $356.2 million in the year ended January 31, 2017 to $395.2 million in the year ended January 31, 2018. The increase consisted of a $20.9 million increase in service and support revenue and $18.1 million increase in product revenue. In our Customer Engagement segment, revenue increased approximately $34.2 million, or 5%, from $705.9 million in the year ended January 31, 2017 to $740.1 million in the year ended January 31, 2018. The increase consisted of a $31.1 million increase in service and support revenue and a $3.1 million increase in product revenue. For additional details on our revenue by segment, see "—Revenue by Operating Segment". Revenue in the Americas, EMEA, and APAC represented approximately 53%, 31%, and 16% of our total revenue, respectively, in the year ended January 31, 2018, compared to approximately 54%, 30%, and 16%, respectively, in the year ended January 31, 2017. Further details of changes in revenue are provided below.

Operating income was $48.6 million in the year ended January 31, 2018 compared to $17.4 million in the year ended January 31, 2017. This increase in operating income was primarily due to a $48.9 million increase in gross profit, reflecting increased gross profit in both of our segments, partially offset by an $17.7 million increase in operating expenses, which primarily consisted of a $19.6 million increase in net research and development expenses and an $8.0 million increase in selling, general and administrative expenses, partially offset by a $9.9 million decrease in amortization of other acquired intangible assets. Further details of changes in operating income are provided below.

Net loss attributable to Verint Systems Inc. was $6.6 million, and net loss per common share was $0.10, in the year ended January 31, 2018, compared to a net loss attributable to Verint Systems Inc. of $29.4 million, and net loss per common share of $0.47, in the year ended January 31, 2017. The decrease in net loss attributable to Verint Systems Inc. and net loss per common share in the year ended January 31, 2018 was primarily due to a $31.2 million increase in operating income, as described above, a $1.5 million increase in interest income, and a $12.8 million increase in other income. These were partially offset by a $1.0 million increase in interest expense, a $2.1 million loss on extinguishment of debt, and a $19.6 million increase in our provision for income taxes primarily resulting from a $15.0 million accrual for withholding taxes on foreign cash we may repatriate in the future.

A portion of our business is conducted in currencies other than the U.S. dollar, and therefore our revenue and operating expenses are affected by fluctuations in applicable foreign currency exchange rates. When comparing average exchange rates for the year ended January 31, 2018 to average exchange rates for the year ended January 31, 2017, the U.S. dollar weakened relative to the euro, Australian dollar and the Singapore dollar, resulting in an overall increase in our revenue on a U.S. dollar-denominated basis. Furthermore, the U.S. dollar weakened relative to our Israeli shekel rate (hedged and unhedged), resulting in an overall increase in operating expenses on a U.S. dollar-denominated basis. For the year ended January 31, 2018, had foreign exchange rates remained unchanged from rates in effect for the year ended January 31, 2017, our revenue would have been approximately $4.8 million lower and our cost of revenue and operating expenses on a combined basis would have been approximately $10.7 million lower, which would have resulted in a $5.9 million increase in operating income.

As of January 31, 2018, we employed approximately 5,200 professionals, including part-time employees and certain contractors, compared to approximately 5,100 at January 31, 2017.

Revenue by Operating Segment

As described in Note 2, "Revenue Recognition" to our consolidated financial statements under Item 8 of this report, calculated revenue for the year ended January 31, 2019 without the adoption of ASU No. 2014-09 would have been lower than the revenue we are reporting under the new accounting guidance. However, the lower calculated revenue results not only from the impact of the new accounting guidance, but also from changes we made to our business practices in anticipation, and as a result, of the new accounting guidance. These business practice changes adversely impact the calculation of revenue under the prior accounting guidance and include, among other things, the way we manage our professional services projects, offer and deploy our solutions, structure certain customer contracts, and make pricing decisions. While the many variables, required assumptions, and other complexities associated with these business practice changes make it impractical to precisely quantify the impact of these changes, we believe that calculated revenue under the prior accounting guidance, but absent these business practice changes, would have been closer to the revenue we are reporting under the new accounting guidance.

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The following table sets forth revenue for each of our operating segments for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,			% Change	
(in thousands)	2019	2018	2017	2019 - 2018	2018 - 2017
Customer Engagement	$796,287	$740,067	$705,897	8%	5%
Cyber Intelligence	433,460	395,162	356,209	10%	11%
Total revenue	$1,229,747	$1,135,229	$1,062,106	8%	7%

Customer Engagement Segment

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Customer Engagement revenue increased approximately $56.2 million, or 8%, from $740.1 million in the year ended January 31, 2018 to $796.3 million in the year ended January 31, 2019. The increase consisted of a $37.5 million increase in product revenue and an $18.7 million increase in service and support revenue. The application of ASU No. 2014-09 primarily resulted in differences in the timing and amount of revenue recognition for term-based licenses, which under the new accounting standard are recognized at a point in time similar to perpetual licenses rather than over time, minimum guaranteed amounts related to usage-based licenses, and professional services for which payment is contingent upon the achievement of milestones. Excluding the impact of ASU No. 2014-09, Customer Engagement revenue increased approximately $26.2 million, or 4%, from $740.1 million in the year ended January 31, 2018 to $766.3 million in the year ended January 31, 2019, consisting of a $19.2 million increase in product revenue and a $7.0 million increase in service and support revenue. As noted at the top of this section, as a result of the adoption of ASU No. 2014-09, we made certain changes to our Customer Engagement contracting and business processes that would have otherwise not occurred under the prior revenue recognition guidance and we believe that absent these changes, revenue under the prior accounting guidance would have been closer to the revenue we are reporting under the new accounting guidance. Under either accounting standard, the increase in product revenue primarily reflects a higher aggregate value of executed perpetual and term-based license arrangements, which comprises the majority of our product revenue and which can fluctuate from period to period. The increase in service and support revenue was primarily attributable to an increase in our customer installed base, and the related support and SaaS revenue generated from this customer base. We continue to experience steady growth in services and support revenue, while product revenue growth is less predictable as the timing of our software license revenue can create significant fluctuations in our results as some large contracts can represent a significant share of our product revenue for a given period. Our business combinations can also affect our revenue mix depending on the nature of the underlying business acquired.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Customer Engagement revenue increased approximately $34.2 million, or 5%, from $705.9 million in the year ended January 31, 2017 to $740.1 million in the year ended January 31, 2018. The increase consisted of a $31.1 million increase in service and support revenue and a $3.1 million increase in product revenue. The increase in service and support revenue was primarily attributable to growth in sales of our cloud-based solutions during the year ended January 31, 2018. The increase in product revenue primarily reflects a modest increase in product deliveries during the year ended January 31, 2018. During the year ended January 31, 2018, we continued to experience a shift in our revenue mix from product revenue to service and support revenue as a result of several factors, including a higher component of service offerings in our standard arrangements (including licenses sold through cloud deployment), an increase in services associated with customer product upgrades, and growth in our customer installed base, both organically and as a result of business combinations.

Cyber Intelligence Segment

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Cyber Intelligence revenue increased approximately $38.3 million, or 10%, from $395.2 million in the year ended January 31, 2018 to $433.5 million in the year ended January 31, 2019. The increase consisted of a $20.8 million increase in service and support revenue and an $17.5 million increase in product revenue. The increase in service and support revenue was primarily attributable to an increase in support revenue from existing customers and an increase in revenue from our SaaS offerings, partially offset by a decrease in progress realized during the current year on long-term projects for which revenue is recognized over time using the percentage of completion (“POC”) method. The increase in product revenue was primarily due to the adoption of ASU No. 2014-09 which resulted in differences in the timing and amount of revenue recognition for software licenses and a long-term customization project that was accepted by the customer during the year ended January 31, 2019, which had been previously recognized under prior revenue recognition accounting standards and an increase in product deliveries, including software licenses recognized over time, partially offset by a decrease in progress realized during the current period on long-term projects with revenue recognized over time using the POC method. Excluding the impact of ASU No. 2014-09, Cyber Intelligence revenue increased approximately

$20.5 million, or 5%, from $395.2 million in the year ended January 31, 2018 to $415.7 million in the year ended January 31, 2019. The increase consisted of a $20.8 million increase in service and support revenue, partially offset by a $0.3 million decrease in product revenue. As noted at the top of this section, as a result of the adoption of ASU No. 2014-09, we made certain changes to our Cyber Intelligence software licensing offerings that would have otherwise not occurred under the prior revenue recognition guidance and we believe that absent these changes, revenue under the prior accounting guidance would have been closer to the revenue we are reporting under the new accounting guidance.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Cyber Intelligence revenue increased approximately $39.0 million, or 11%, from $356.2 million in the year ended January 31, 2017 to $395.2 million in the year ended January 31, 2018. The increase consisted of a $20.9 million increase in service and support revenue and an $18.1 million increase in product revenue. The increase in service and support revenue was primarily attributable to an increase in progress realized during the year on projects with revenue recognized using the POC method, some of which commenced in previous years, an increase in support services revenue from new and existing customers, and an increase in revenue from our SaaS offerings. The increase in product revenue was primarily due to an increase in product deliveries and, to a lesser extent, an increase in progress realized during the year on projects with revenue recognized using the POC method, some of which commenced in previous years.

Volume and Price

We sell products in multiple configurations, and the price of any particular product varies depending on the configuration of the product sold. Due to the variety of customized configurations for each product we sell, we are unable to quantify the amount of any revenue increase attributable to a change in the price of any particular product and/or a change in the number of products sold.

Product Revenue and Service and Support Revenue

We derive and report our revenue in two categories: (a) product revenue, including licensing of software products and sale of hardware products (which include software that works together with the hardware to deliver the product's essential functionality), and (b) service and support revenue, including revenue from installation services, post-contract customer support, project management, hosting services, cloud deployments, SaaS, managed services, product warranties, and business advisory consulting and training services.

The following table sets forth product revenue and service and support revenue for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,			% Change	
(in thousands)	2019	2018	2017	2019 - 2018	2018 - 2017
Product revenue	$454,650	$399,662	$378,504	14%	6%
Service and support revenue	775,097	735,567	683,602	5%	8%
Total revenue	$1,229,747	$1,135,229	$1,062,106	8%	7%

Product Revenue

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Product revenue increased approximately $55.0 million, or 14%, from $399.7 million for the year ended January 31, 2018 to $454.7 million for the year ended January 31, 2019, resulting from a $37.5 million increase in our Customer Engagement segment and a $17.5 million increase in our Cyber Intelligence segment.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Product revenue increased approximately $21.2 million, or 6%, from $378.5 million for the year ended January 31, 2017 to $399.7 million for the year ended

January 31, 2018, resulting from an $18.1 million increase in our Cyber Intelligence segment and a $3.1 million increase in our Customer Engagement segment.

For additional information see "—Revenue by Operating Segment".

Service and Support Revenue

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Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Service and support revenue increased approximately $39.5 million, or 5%, from $735.6 million for the year ended January 31, 2018 to $775.1 million for the year ended January 31, 2019, resulting from a $20.8 million increase in our Cyber Intelligence segment and an $18.7 million increase in our Customer Engagement segment.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Service and support revenue increased approximately $52.0 million, or 8%, from $683.6 million for the year ended January 31, 2017 to $735.6 million for the year ended January 31, 2018, resulting from a $31.1 million increase in our Customer Engagement segment and a $20.9 million increase in our Cyber Intelligence segment.

For additional information see "— Revenue by Operating Segment".

Cost of Revenue

The following table sets forth cost of revenue by product and service and support, as well as amortization of acquired technology for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,			% Change	
(in thousands)	2019	2018	2017	2019 - 2018	2018 - 2017
Cost of product revenue	$129,922	$131,989	$123,279	(2)%	7%
Cost of service and support revenue	293,888	276,582	261,978	6%	6%
Amortization of acquired technology	25,403	38,216	37,372	(34)%	2%
Total cost of revenue	$449,213	$446,787	$422,629	1%	6%

We exclude certain costs of both product revenue and service and support revenue, including shared support costs, stock-based compensation, and asset impairment charges, among others, when calculating our operating segment gross margins.

Cost of Product Revenue

Cost of product revenue primarily consists of hardware material costs and royalties due to third parties for software components that are embedded in our software solutions. Cost of product revenue also includes amortization of capitalized software development costs, employee compensation and related expenses associated with our global operations, facility costs, and other allocated overhead expenses. In our Cyber Intelligence segment, cost of product revenue also includes employee compensation and related expenses, contractor and consulting expenses, and travel expenses, in each case for resources dedicated to project management and associated product delivery.

As with many other technology companies, our software products tend to have higher gross margins than our hardware products, so the mix of products we sell in a particular period can have a significant impact on our gross margins in that period.

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Cost of product revenue decreased approximately $2.1 million, or 2%, from $132.0 million for the year ended January 31, 2018 to $129.9 million for the year ended January 31, 2019, primarily due to a decrease in third-party hardware costs and travel expenses related to on-site deliveries in our Cyber Intelligence segment. Our overall product gross margins increased from 67% in the year ended January 31, 2018 to 71% in the year ended January 31, 2019. Product gross margins in our Customer Engagement segment increased from 81% in the year ended January 31, 2018 to 84% in the year ended January 31, 2019 primarily due to a change in product mix. Product gross margins in our Cyber Intelligence segment increased from 57% in the year ended January 31, 2018 to 61% in the year ended January 31, 2019 primarily due to a decrease in third-party hardware costs as a result of a change in product mix and the implementation of a hardware cost reduction initiative for certain products. This decrease in third-party hardware costs was partially offset by the adoption of ASU No. 2014-09, which impacted product gross margins primarily due to a change in the timing of cost of product revenue recognition for certain customer contracts requiring significant customization, because unlike prior guidance, the new guidance precludes the deferral of costs simply to obtain an even profit margin over the contract term. Excluding the impact of the adoption of ASU No. 2014-09, our overall product gross margins increased to 70% in the year ended January 31, 2019 from 67% in the year ended January 31, 2018.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Cost of product revenue increased approximately $8.7 million, or 7%, from $123.3 million for the year ended January 31, 2017 to $132.0 million for the year ended January 31, 2018, primarily due to increased contractor expenses and, to a lesser extent, an increase in material costs in our Cyber Intelligence segment, driven primarily by increased revenue activity as discussed above. Our overall product gross margins were 67% in each of the years ended January 31, 2018 and 2017. Product gross margins in our Customer Engagement segment decreased slightly from 82% in the year ended January 31, 2017 to 81% in the year ended January 31, 2018 primarily due to a change in product mix. Product gross margins in our Cyber Intelligence segment were 57% in each of the years ended January 31, 2018 and 2017.

Cost of Service and Support Revenue

Cost of service and support revenue primarily consists of employee compensation and related expenses, contractor costs, hosting infrastructure costs, and travel expenses relating to installation, training, consulting, and maintenance services. Cost of service and support revenue also includes stock-based compensation expenses, facility costs, and other overhead expenses. In accordance with GAAP and our accounting policy, the cost of service and support revenue is generally expensed as incurred in the period in which the services are performed.

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Cost of service and support revenue increased approximately $17.3 million, or 6%, from $276.6 million in the year ended January 31, 2018 to $293.9 million in the year ended January 31, 2019. The increase was primarily due to increased employee compensation and related expenses in both our Customer Engagement and Cyber Intelligence segments as a result of additional services employee headcount to support the delivery of our services and support revenue, and an increase in costs associated with providing our cloud-based solutions, which corresponds with growth in cloud-based revenue. Our overall service and support gross margins were 62% in each of the years ended January 31, 2019 and 2018. Cost of service and support revenue under the prior revenue recognition guidance did not differ materially from cost of service and support revenue under ASU No. 2014-09 in the year ended January 31, 2019.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Cost of service and support revenue increased approximately $14.6 million, or 6%, from $262.0 million in the year ended January 31, 2017 to $276.6 million in the year ended January 31, 2018. Cost of service and support revenue increased in our Customer Engagement segment primarily due to costs associated with providing our cloud-based solutions, which corresponds with growth in cloud-based revenue, and an increase in costs attributable to the use of contractors during the year ended January 31, 2018. Cost of service and support revenue increased in our Cyber Intelligence segment primarily due to costs associated with increased use of contractors as a result of increased revenue activity as discussed above. Our overall service and support gross margins were 62% in each of the years ended January 31, 2018 and 2017.

Amortization of Acquired Technology

Amortization of acquired technology consists of amortization of technology assets acquired in connection with business combinations.

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Amortization of acquired technology decreased approximately $12.8 million, or 34%, from $38.2 million in the year ended January 31, 2018 to $25.4 million in the year ended January 31, 2019. The decrease was attributable to acquired technology intangible assets from historical business combinations becoming fully amortized during the year ended January 31, 2019, partially offset by amortization expense of acquired technology-based intangible assets associated with recent business combinations.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Amortization of acquired technology increased approximately $0.8 million, or 2%, from $37.4 million in the year ended January 31, 2017 to $38.2 million in the year ended January 31, 2018. The increase was attributable to amortization expense of acquired technology-based intangible assets associated with business combinations that closed during the year ended January 31, 2018, as well as business combinations that closed during the year ended January 31, 2017 for which a full year of amortization expense is reflected in the year ended January 31, 2018. This increase was partially offset by a decrease in amortization expense as a result of acquired technology intangible assets from historical business combinations becoming fully amortized during the year ended January 31, 2018.

Further discussion regarding our business combinations appears in Note 5, “Business Combinations” to our consolidated financial statements included under Item 8 of this report.

Research and Development, Net

Research and development expenses consist primarily of personnel and subcontracting expenses, facility costs, and other allocated overhead, net of certain software development costs that are capitalized, as well as reimbursements under government programs. Software development costs are capitalized upon the establishment of technological feasibility and continue to be capitalized through the general release of the related software product.

The following table sets forth research and development, net for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,			% Change	
(in thousands)	2019	2018	2017	2019 - 2018	2018 - 2017
Research and development, net	$209,106	$190,643	$171,070	10%	11%

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Research and development, net increased approximately $18.5 million, or 10%, from $190.6 million in the year ended January 31, 2018 to $209.1 million in the year ended January 31, 2019. The increase was primarily due to a $14.0 million increase in employee compensation and related expenses and a $4.1 million increase in allocated overhead costs as a result of increased R&D headcount, and a $5.7 million increase in contractor expenses primarily in our Cyber Intelligence segment, partially offset by a $3.3 million decrease in stock-based compensation expenses as a result of a change in bonus payment structure, a $1.7 million decrease in capitalized software development costs, and a $0.5 million decrease in R&D reimbursements received from government programs in the year ended January 31, 2019 compared to the year ended January 31, 2018.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Research and development, net increased approximately $19.5 million, or 11%, from $171.1 million in the year ended January 31, 2017 to $190.6 million in the year ended January 31, 2018. The increase was primarily due to a $12.7 million increase in employee compensation and related expenses as a result of increased R&D headcount, a $3.6 million increase in contractor expenses primarily in our Cyber Intelligence segment, and a $1.5 million increase in stock-based compensation expenses for R&D employees.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of personnel costs and related expenses, professional fees, sales and marketing expenses, including travel costs, sales commissions and sales referral fees, facility costs, communication expenses, and other administrative expenses.

The following table sets forth selling, general and administrative expenses for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,			% Change	
(in thousands)	2019	2018	2017	2019 - 2018	2018 - 2017
Selling, general and administrative	$426,183	$414,960	$406,952	3%	2%

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Selling, general and administrative expenses increased approximately $11.2 million, or 3%, from $415.0 million in the year ended January 31, 2018 to $426.2 million in the year ended January 31, 2019. This increase was primarily attributable to a $10.6 million increase in employee compensation expenses due to increased headcount as a result of recent business combinations, a $3.3 million increase in stock-based compensation expense as a result of a change in bonus payment structure, a $2.9 million increase in travel related expenses due primarily to increased travel expenses in our Customer Engagement segment, and a $1.9 million increase in depreciation expense on fixed assets used for general administration purposes. Additionally, selling, general and administrative expenses increased by $4.7 million due to the change in the fair value of our obligations under contingent consideration arrangements, from a net benefit of $8.3 million in the year ended January 31, 2018 to a net benefit of $3.6 million during the year ended January 31, 2019, as the result of revised outlooks for several unrelated arrangements. These increases were partially offset by a $6.8 million decrease in allocated overhead costs, a $3.4 million decrease in facility expenses primarily due to the early termination of a facility lease in the EMEA region during the prior year, and a $2.7 million decrease in contractor expenses primarily due to the substantial completion of certain business agility initiatives in the prior year.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Selling, general and administrative expenses increased approximately $8.0 million, or 2%, from $407.0 million in the year ended January 31, 2017 to $415.0 million in the year ended January 31, 2018. This increase was primarily attributable to the following:

- $8.5 million increase in employee compensation and related expenses attributed primarily to additional personnel driven by business combinations;
- $5.0 million increase in professional fees resulting primarily from legal services provided in connection with business combinations;

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- $4.7 million increase in contractor expenses due primarily to business agility initiatives, including upgrading our business information systems;
- $3.3 million charge for impairments of certain acquired customer-related intangible assets in our Customer Engagement segment;
- $2.4 increase in stock-based compensation expense due primarily to business combinations that closed during the year ended January 31, 2018, as well as business combinations that closed during the year ended January 31, 2017 for which a full year of stock-based compensation expense is reflected in the year ended January 31, 2018;
- $2.0 million increase in software subscription expenses related to internal-use software; and
- $1.8 million increase in rent expense associated with business combinations that closed during the year ended January 31, 2018, as well as business combinations that closed during the year ended January 31, 2017 for which a full year of rent expense is reflected in the year ended January 31, 2018.

These increases were partially offset by a $15.6 million decrease in selling, general, and administrative expenses resulting from changes in fair value of our obligations under contingent consideration arrangements from a net expense of $7.3 million during the year ended January 31, 2017 to net benefit of $8.3 million in the year ended January 31, 2018. The impact of contingent consideration arrangements on our operating results can vary over time as we revise our outlook for achieving the performance targets underlying the arrangements. This impact on our operating results may be more significant in some periods than in others, depending on a number of factors, including the magnitude of the change in the outlook for each arrangement separately as well as the number of contingent consideration arrangements in place, the liabilities requiring adjustment in that period, and the net effect of those adjustments. Additionally, selling, general, and administrative expenses decreased by $4.6 million as a result of increased capitalization of costs associated with development of internal-use software during the year ended January 31, 2018 compared to the prior year.

Amortization of Other Acquired Intangible Assets

Amortization of other acquired intangible assets consists of amortization of certain intangible assets acquired in connection with business combinations, including customer relationships, distribution networks, trade names and non-compete agreements.
The following table sets forth amortization of other acquired intangible assets for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,			% Change	
(in thousands)	2019	2018	2017	2019 - 2018	2018 - 2017
Amortization of other acquired intangible assets	$31,010	$34,209	$44,089	(9)%	(22)%

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Amortization of other acquired intangible assets decreased approximately $3.2 million, or 9%, from $34.2 million in the year ended January 31, 2018 to $31.0 million in the year ended January 31, 2019 as a result of acquired customer-related intangible assets from historical business combinations becoming fully amortized, partially offset by an increase in amortization expense from acquired intangible assets from business combinations that closed during the year ended January 31, 2019, as well as business combinations that closed during the prior year, for which a full year of amortization expense is reflected in the current year.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Amortization of other acquired intangible assets decreased approximately $9.9 million, or 22%, from $44.1 million in the year ended January 31, 2017 to $34.2 million in the year ended January 31, 2018 as a result of acquired customer-related intangible assets from historical business combinations becoming fully amortized, partially offset by an increase in amortization expense from acquired intangible assets from business combinations that closed during the year ended January 31, 2018, as well as business combinations that closed during the prior year, for which a full year of amortization expense is reflected in the year ended January 31, 2018.

Further discussion regarding our business combinations appears in Note 5, “Business Combinations” to our consolidated financial statements included under Item 8 of this report.

Other Expense, Net

The following table sets forth total other expense, net for the years ended January 31, 2019, 2018, and 2017:

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	Year Ended January 31,			% Change	
(in thousands)	2019	2018	2017	2019 - 2018	2018 - 2017
Interest income	$4,777	$2,477	$1,048	93%	136%
Interest expense	(37,344)	(35,959)	(34,962)	4%	3%
Losses on early retirements of debt	—	(2,150)	—	—%	*
Other (expense) income:					
Foreign currency (losses) gains	(5,519)	6,760	(2,743)	(182)%	(346)%
Gains (losses) on derivatives	2,511	(17)	(322)	*	*
Other, net	(898)	(841)	(3,861)	7%	*
Total other (expense) income, net	(3,906)	5,902	(6,926)	(166)%	(185)%
Total other expense, net	$(36,473)	$(29,730)	$(40,840)	23%	(27)%

* Percentage is not meaningful.

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Total other expense, net, increased by $6.8 million from $29.7 million in the year ended January 31, 2018 to $36.5 million in the year ended January 31, 2019.

Interest expense increased to $37.3 million in the year ended January 31, 2019 from $36.0 million in the year ended January 31, 2018 primarily due to higher interest rates on outstanding borrowings during the year ended January 31, 2019, partially offset by a $1.0 million reversal of accrued interest related to a legal matter which was settled in the year ended January 31, 2019.

During the year ended January 31, 2018, we entered into a new credit agreement (the “2017 Credit Agreement”), which was subsequently amended, and terminated our Prior Credit Agreement (as defined in Note 7, “Long-Term Debt” to our consolidated financial statements included under Item 8 of this report). In connection with these transactions, we recorded $2.2 million of losses on early retirements of debt. There were no comparable charges in the year ended January 31, 2019.

We recorded $5.5 million of net foreign currency losses in the year ended January 31, 2019 compared to $6.8 million of net foreign currency gains in the year ended January 31, 2018. Foreign currency losses in the year ended January 31, 2019 resulted primarily from the strengthening of the U.S. dollar against the euro from January 31, 2018 to January 31, 2019, resulting in foreign currency losses on euro denominated net assets in certain entities which use a U.S. dollar functional currency and foreign currency losses on U.S. dollar-denominated net liabilities in certain entities which use a euro functional currency, the strengthening of the U.S. dollar against the Singapore dollar, resulting in foreign currency losses on Singapore dollar-denominated net assets in certain entities which use a U.S. dollar functional currency, the strengthening of the U.S. dollar against the British pound sterling, resulting in foreign currency losses on U.S. dollar-denominated net liabilities in certain entities which use a British pound sterling functional currency, and the strengthening of the U.S. dollar against the Australian dollar, resulting in foreign currency losses on U.S. dollar-denominated net liabilities in certain entities which use an Australian dollar functional currency.

In the year ended January 31, 2019, there were net gains on derivative financial instruments (not designated as hedging instruments) of $2.5 million, compared to insignificant net losses on such instruments for the year ended January 31, 2018. The net gains in the current period primarily reflected gains on an interest rate swap and contracts executed to hedge movements in the exchange rate between the U.S. dollar and the Singapore dollar.

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Total other expense, net, decreased by $11.1 million from $40.8 million in the year ended January 31, 2017 to $29.7 million in the year ended January 31, 2018.

Interest expense increased to $36.0 million in the year ended January 31, 2018 from $35.0 million in the year ended January 31, 2017 primarily due to higher interest rates on outstanding borrowings during the year ended January 31, 2018.

During the year ended January 31, 2018 we entered into the 2017 Credit Agreement with certain lenders and terminated our Prior Credit Agreement. In connection with these transactions, we recorded a $2.2 million loss on early retirement of debt. There were no comparable charges in the year ended January 31, 2017.

We recorded $6.8 million of net foreign currency gains in the year ended January 31, 2018 compared to $2.7 million of net losses in the year ended January 31, 2017. Foreign currency gains in the year ended January 31, 2018 resulted primarily from the weakening of the U.S. dollar against the euro, resulting in foreign currency gains on euro denominated net assets in certain entities which use a U.S. dollar functional currency, the weakening of the U.S. dollar against the Singapore dollar, resulting in

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foreign currency gains on Singapore dollar-denominated net assets in certain entities which use a U.S. dollar functional currency, and the weakening of the U.S. dollar against the British pound sterling, resulting in foreign currency gains on U.S. dollar-denominated net liabilities in certain entities which use a British pound sterling functional currency.

In the year ended January 31, 2018, there were insignificant net losses on derivative financial instruments (not designated as hedging instruments), compared to net losses of $0.3 million on such instruments for the year ended January 31, 2017. The net losses in the prior year reflected losses on contracts executed to hedge movements in the exchange rate between the U.S. dollar and the Brazilian real.

Other net expenses decreased to $0.8 million in the year ended January 31, 2018 from $3.9 million in the year ended January 31, 2017. In the year ended January 31, 2017, we recorded a write-off of a $2.4 million cost-basis investment in our Cyber Intelligence segment, with no comparable charges in the year ended January 31, 2018. Also contributing to the decrease in other net expenses was resolution of a previously accrued sales tax contingency in our APAC region during the year ended January 31, 2018.

Provision for Income Taxes

The following table sets forth our provision for income taxes for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,		
(in thousands)	2019	2018	2017
Provision for income taxes	$7,542	$22,354	$2,772

Year Ended January 31, 2019 compared to Year Ended January 31, 2018. Our effective income tax rate was 9.7% for the year ended January 31, 2019, compared to an effective income tax rate of 118.3% for the year ended January 31, 2018. For the year ended January 31, 2019, our effective income tax rate was lower than the U.S. federal statutory income tax rate of 21.0% due to a net reduction in valuation allowances of $24.1 million, the mix and levels of income and losses among taxing jurisdictions, and changes in unrecognized income tax benefits. The net reduction in valuation allowance is primarily related to reductions in U.S. valuation allowances as a result of deferred tax liabilities recorded in connection with business combinations, and the utilization of significant NOLs, which reduced our deferred tax assets. As a result, we ended the year in a net federal deferred tax liability position in the U.S. The deferred income tax liabilities recorded in connection with business combinations were primarily attributable to acquired intangible assets to the extent the amortization will not be deductible for income tax purposes. Under accounting guidelines, because the amortization of the intangible assets in future periods provides a source of taxable income, we expect to realize a portion of our existing deferred income tax assets. As such, we reduced the valuation allowance recorded on our deferred income tax assets to the extent of the deferred income tax liabilities recorded. Because the valuation allowance related to existing Verint deferred income tax assets, the impact of the release was reflected as a discrete income tax benefit and not as a component of the business combination accounting.

In accordance with the provisions of SAB No. 118, as of January 31, 2018 we considered amounts related to the 2017 Tax Act to be reasonably estimated. During the year ended January 31, 2019, we refined and completed the accounting for the 2017 Tax Act as we obtained, prepared, and analyzed additional information and as additional legislative, regulatory, and accounting guidance and interpretations became available, resulting in no adjustment under SAB No. 118.

For the year ended January 31, 2018, our effective income tax rate was higher than the U.S. federal statutory income tax rate of 33.8% due to withholding tax expense of $15.0 million, a benefit of $5.4 million related to the revaluation of U.S. deferred tax items resulting from the 2017 Tax Act, the mix and levels of income and losses among taxing jurisdictions, and changes in unrecognized income tax benefits. Our statutory rate for the year ended January 31, 2018 was 33.8% due to the 2017 Tax Act, which included a reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%. Section 15 of the Internal Revenue Code stipulates that our fiscal year ending January 31, 2018 had a blended corporate tax rate of 33.8% which is based on the applicable tax rates before and after the 2017 Tax Act and the number of days in the period. As a result of the 2017 Tax Act, we recorded a Transition Tax on previously untaxed foreign earnings. The Transition tax resulted in no impact to the tax provision as we used a portion of the NOL carryforward and released valuation allowances on the associated deferred tax assets resulting in a net impact of $0 to the tax provision. Foreign earnings subject to the Transition Tax will not be subject to further U.S. taxation upon repatriation. Therefore, we may repatriate certain foreign cash, a portion of which will be subject to a withholding tax. As such, withholding tax of $15 million was recorded. Also, we remeasured U.S. deferred tax items to reflect the reduced rate under the 2017 Tax Act resulting in the $5.4 million benefit. In addition, pre-tax income in our profitable jurisdictions, where we recorded income tax provisions at rates lower than the U.S. federal statutory income tax rate, was greater than the pre-tax losses in our domestic and foreign jurisdictions where we maintained valuation allowances and did not record the related income tax benefits. The result was an income tax provision of $22.4 million on a pre-tax income of

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$18.9 million, which represented an effective income tax rate of 118.3%. Excluding the net impact of the 2017 Tax Act, the result was an income tax provision of $12.7 million on pre-tax income of $18.9 million, resulting in an effective income tax rate of 67.3%

Year Ended January 31, 2018 compared to Year Ended January 31, 2017. Our effective income tax rate was 118.3% for the year ended January 31, 2018, compared to a negative effective income tax rate of 11.8% for the year ended January 31, 2017. For the year ended January 31, 2018, our effective income tax rate was higher than the U.S. federal statutory income tax rate of 33.8% due to withholding tax expenses of $15 million, a benefit of $5.4 million related to the revaluation of U.S. deferred tax items, the mix and levels of income and losses among taxing jurisdictions, and changes in unrecognized income tax benefits. Our statutory rate for the year ended January 31, 2018 is 33.8% due to the 2017 Tax Act as discussed above.

For the year ended January 31, 2017, our effective income tax rate was lower than the U.S. federal statutory income tax rate of 35% due to the release of $10.4 million of valuation allowances, and the mix and levels of income and losses among taxing jurisdictions, offset by changes in unrecognized income tax benefits. We maintain valuation allowances on our net U.S. deferred income tax assets related to federal and certain state jurisdictions. In connection with business combinations during the year ended January 31, 2017, we recorded deferred income tax liabilities primarily attributable to acquired intangible assets to the extent the amortization will not be deductible for income tax purposes. Pre-tax income in our profitable jurisdictions, where we recorded income tax provisions at rates lower than the U.S. federal statutory income tax rate, was lower than the pre-tax losses in our domestic and foreign jurisdictions where we maintain valuation allowances and did not record the related income tax benefits. The result was an income tax provision of $2.8 million on a pre-tax loss of $23.5 million, which represented a negative effective income tax rate of 11.8%.

Liquidity and Capital Resources

Overview

Our primary recurring source of cash is the collection of proceeds from the sale of products and services to our customers, including cash periodically collected in advance of delivery or performance.

Our primary recurring use of cash is payment of our operating costs, which consist primarily of employee-related expenses, such as compensation and benefits, as well as general operating expenses for marketing, facilities and overhead costs, and capital expenditures. We also utilize cash for debt service and periodically for business acquisitions. Cash generated from operations, along with our existing cash, cash equivalents, and short-term investments, are our primary sources of operating liquidity, and we believe that our operating liquidity is sufficient to support our current business operations, including debt service and capital expenditure requirements.

On June 29, 2017, we entered into the 2017 Credit Agreement with certain lenders, and terminated our Prior Credit Agreement. The 2017 Credit Agreement was amended on January 31, 2018 (the “2018 Amendment”). Further discussion of our 2017 Credit Agreement and 2018 Amendment appears below, under “Financing Arrangements”.

We have historically expanded our business in part by investing in strategic growth initiatives, including acquisitions of products, technologies, and businesses. We may finance such acquisitions using cash, debt, stock, or a combination of the foregoing, however, we have used cash as consideration for substantially all of our historical business acquisitions, including approximately $90 million and $103 million of net cash expended for business acquisitions during the years ended January 31, 2019 and 2018, respectively.

We continually examine our options with respect to terms and sources of existing and future short-term and long-term capital resources to enhance our operating results and to ensure that we retain financial flexibility, and may from time to time elect to raise capital through the issuance of additional equity or the incurrence of additional debt.

A considerable portion of our operating income is earned outside the United States. Cash, cash equivalents, short-term investments, and restricted cash, cash equivalents, and bank time deposits (excluding any long-term portions) held by our subsidiaries outside of the United States were $399.4 million and $346.2 million as of January 31, 2019 and 2018, respectively, and are generally used to fund the subsidiaries' operating requirements and to invest in growth initiatives, including business acquisitions. These subsidiaries also held long-term restricted cash and cash equivalents, and restricted bank time deposits of $23.1 million and $28.4 million at January 31, 2019 and 2018, respectively.

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We currently intend to continue to indefinitely reinvest a portion of the earnings of our foreign subsidiaries, which, as a result of the 2017 Tax Act, may now be repatriated without incurring additional U.S. federal income taxes.

Should other circumstances arise whereby we require more capital in the United States than is generated by our domestic operations, or should we otherwise consider it in our best interests, we could repatriate future earnings from foreign jurisdictions, which could result in higher effective tax rates. As noted above, we currently intend to indefinitely reinvest a portion of the earnings of our foreign subsidiaries to finance foreign activities. Except to the extent of the U.S. tax provided on earnings of our foreign subsidiaries as of January 31, 2019, and withholding taxes of $15.0 million accrued as of January 31, 2019, with respect to certain identified cash that may be repatriated to the U.S., we have not provided tax on the outside basis difference of foreign subsidiaries nor have we provided for any additional withholding or other tax that may be applicable should a future distribution be made from any unremitted earnings of foreign subsidiaries. Due to complexities in the laws of the foreign jurisdictions and the assumptions that would have to be made, it is not practicable to estimate the total amount of income and withholding taxes that would have to be provided on such earnings.

The following table summarizes our total cash and cash equivalents, restricted cash and cash equivalents, restricted bank time deposits, and short-term investments, as well as our total debt, as of January 31, 2019 and 2018:

	January 31,	
(in thousands)	2019	2018
Cash and cash equivalents	$369,975	$337,942
Restricted cash and cash equivalents, and restricted bank time deposits (excluding long term portions)	42,262	33,303
Short-term investments	32,329	6,566
Total cash, cash equivalents, restricted cash and cash equivalents, restricted bank time deposits, and short-term investments	$444,566	$377,811
Total debt, including current portions	$782,128	$772,984

Consolidated Cash Flow Activity

The following table summarizes selected items from our consolidated statements of cash flows for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,		
(in thousands)	2019	2018	2017
Net cash provided by operating activities	$215,251	$176,327	$172,415
Net cash used in investing activities	(175,723)	(146,194)	(116,442)
Net cash used in financing activities	(21,881)	(5,503)	(56,919)
Effect of foreign currency exchange rate changes on cash and cash equivalents	(3,158)	4,251	(4,167)
Net increase (decrease) in cash, cash equivalents, restricted cash, and restricted cash equivalents	$14,489	$28,881	$(5,113)

Our operating activities generated $215.3 million of cash during the year ended January 31, 2019, which was partially offset by $197.6 million of net cash used in combined investing and financing activities during this period. Further discussion of these items appears below.

Net Cash Provided by Operating Activities

Net cash provided by operating activities is driven primarily by our net income or loss, as adjusted for non-cash items, and working capital changes. Operating activities generated $215.3 million of net cash during the year ended January 31, 2019, compared to $176.3 million generated during the year ended January 31, 2018. Our improved operating cash flow in the current year was primarily due to higher operating income, partially offset by the net effect of changes in operating assets and liabilities and the net effect of non-cash items, as compared to the prior year.

Operating activities generated $176.3 million of net cash during the year ended January 31, 2018, compared to $172.4 million generated during the year ended January 31, 2017. Our improved operating cash flow in the year ended January 31, 2018 reflected, in part, $3.6 million of lower combined interest and net income tax payments, compared to the prior year.

Our cash flow from operating activities can fluctuate from period to period due to several factors, including the timing of our billings and collections, the timing and amounts of interest, income tax and other payments, and our operating results.

Net Cash Used in Investing Activities

During the year ended January 31, 2019, our investing activities used $175.7 million of net cash, including $90.0 million of net cash utilized for business acquisitions, $39.0 million of payments for property, equipment, and capitalized software development costs, $25.9 million of net purchases of short-term investments, and a $21.3 million increase in restricted bank time deposits during the period. Restricted bank time deposits are typically short-term deposits used to secure bank guarantees in connection with sales contracts, the amounts of which will fluctuate from period to period. The cash used by these investing activities was partially offset by proceeds from settlements of our derivative financial instruments not designated as hedges.

During the year ended January 31, 2018, our investing activities used $146.2 million of net cash, including $103.0 million of net cash utilized for business acquisitions, $38.7 million of payments for property, equipment, and capitalized software development costs, $3.2 million of net purchases of short-term investments, and $1.7 million of net cash used by other investing activities.

During the year ended January 31, 2017, our investing activities used $116.4 million of net cash, including $141.8 million of net cash utilized for business acquisitions, and $29.9 million of payments for property, equipment, and capitalized software development costs. Partially offsetting those uses were $52.6 million of net proceeds from sales, maturities, and purchases of short-term investments and a $3.0 million decrease in restricted bank time deposits during the period associated with several large sales contracts.

We had no significant commitments for capital expenditures at January 31, 2019.

Net Cash Used in Financing Activities

For the year ended January 31, 2019, our financing activities used $21.9 million of net cash, the most significant portions of which were $10.7 million for the financing portion of payments under contingent consideration arrangements related to prior business combinations, $6.0 million for repayments of borrowings and other financing obligations, dividend payments of $4.4 million to the noncontrolling interest holders in our joint venture, which serves as a systems integrator for certain Asian markets, and $0.2 million paid for costs related to the 2017 Credit Agreement.

For the year ended January 31, 2018, our financing activities used $5.5 million of net cash. Under the 2017 Credit Agreement, we received net proceeds of $424.5 million from the 2017 Term Loan, the majority of which was used to repay all $406.9 million that remained outstanding under the 2014 Term Loans (both the 2017 Term Loan and the 2014 Term Loans are as defined in Note 7, “Long-Term Debt” to our consolidated financial statements included under Item 8 of this report) at June 29, 2017 upon termination of the Prior Credit Agreement. In addition, under the 2018 Amendment, $19.9 million of the 2017 Term Loan was considered extinguished and replaced by new loans. We also used $5.1 million for repayments of borrowings and other financing obligations during the year. Other financing activities during the year included payments of $7.5 million for the financing portion of payments under contingent consideration arrangements related to prior business combinations, $7.1 million paid for debt issuance costs related to the 2017 Credit Agreement, and dividend payments of $3.3 million to the noncontrolling interest holders in our joint venture.

For the year ended January 31, 2017, our financing activities used $56.9 million of net cash, the most significant portions of which were payments of $46.9 million for stock repurchases under our share repurchase program, $3.3 million for repayments of borrowings and other financing obligations, $3.2 million for the financing portion of payments under contingent consideration arrangements related to prior business combinations, and dividend payments of $2.4 million to the noncontrolling interest holders in our joint venture.

Liquidity and Capital Resources Requirements

Based on past performance and current expectations, we believe that our cash, cash equivalents, short-term investments and cash generated from operations will be sufficient to meet anticipated operating costs, required payments of principal and interest, working capital needs, ordinary course capital expenditures, research and development spending, and other commitments for at least the next 12 months. Currently, we have no plans to pay any cash dividends on our common stock, which are not permitted under our 2017 Credit Agreement.

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Our liquidity could be negatively impacted by a decrease in demand for our products and service and support, including the impact of changes in customer buying behavior due to circumstances over which we have no control. If we determine to make additional business acquisitions or otherwise require additional funds, we may need to raise additional capital, which could involve the issuance of additional equity or debt securities or increase our borrowings under our credit facility.

On March 29, 2016, we announced that our board of directors had authorized a common stock repurchase program of up to $150 million over two years following the date of announcement. This program expired on March 29, 2018. We made a total of $46.9 million in repurchases and we did not acquire any shares of treasury stock during the year ended January 31, 2019 under the program.

Financing Arrangements

1.50% Convertible Senior Notes

On June 18, 2014, we issued $400.0 million in aggregate principal amount of 1.50% convertible senior notes due June 1, 2021, unless earlier converted by the holders pursuant to their terms. Net proceeds from the Notes after underwriting discounts were $391.9 million. The Notes pay interest in cash semiannually in arrears at a rate of 1.50% per annum.

The Notes were issued concurrently with our public issuance of 5,750,000 shares of common stock, the majority of the combined net proceeds of which were used to partially repay certain indebtedness under the Prior Credit Agreement.

The Notes are unsecured and rank senior in right of payment to our indebtedness that is expressly subordinated in right of payment to the Notes; equal in right of payment to our indebtedness that is not so subordinated; effectively subordinated in right of payment to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally subordinated to indebtedness and other liabilities of our subsidiaries.

The Notes are convertible into, at our election, cash, shares of common stock, or a combination of both, subject to satisfaction of specified conditions and during specified periods, as described below. If converted, we currently intend to pay cash in respect of the principal amount of the Notes.

The Notes have a conversion rate of 15.5129 shares of common stock per $1,000 principal amount of Notes, which represents an effective conversion price of approximately $64.46 per share of common stock and would result in the issuance of approximately 6,205,000 shares if all of the Notes were converted. The conversion rate has not changed since issuance of the Notes, although throughout the term of the Notes, the conversion rate may be adjusted upon the occurrence of certain events.

Holders may surrender their Notes for conversion at any time prior to the close of business on the business day immediately preceding December 1, 2020, only under the following circumstances:

- during any calendar quarter commencing after the calendar quarter which ended on September 30, 2014, if the closing sale price of our common stock, for at least 20 trading days (whether or not consecutive) in the period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter, is more than 130% of the conversion price of the Notes in effect on each applicable trading day;

- during the ten consecutive trading-day period following any five consecutive trading-day period in which the trading price for the Notes for each such trading day was less than 98% of the closing sale price of our common stock on such date multiplied by the then-current conversion rate; or

- upon the occurrence of specified corporate events, as described in the indenture governing the Notes, such as a consolidation, merger, or binding share exchange.

On or after December 1, 2020 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may surrender their Notes for conversion regardless of whether any of the foregoing conditions have been satisfied. Holders of the Notes may require us to purchase for cash all or any portion of their Notes upon the occurrence of a “fundamental change” at a price equal to 100% of the principal amount of the Notes being purchased, plus accrued and unpaid interest.

As of January 31, 2019, the Notes were not convertible.

Note Hedges and Warrants

Concurrently with the issuance of the Notes, we entered into convertible note hedge transactions (the “Note Hedges”) and sold warrants (the “Warrants”). The combination of the Note Hedges and the Warrants serves to increase the effective initial conversion price for the Notes to $75.00 per share. The Note Hedges and Warrants are each separate instruments from the Notes.

Note Hedges

Pursuant to the Note Hedges, we purchased call options on our common stock, under which we have the right to acquire from the counterparties up to approximately 6,205,000 shares of our common stock, subject to customary anti-dilution adjustments, at a price of $64.46, which equals the initial conversion price of the Notes. Our exercise rights under the Note Hedges generally trigger upon conversion of the Notes and the Note Hedges terminate upon maturity of the Notes, or the first day the Notes are no longer outstanding. The Note Hedges may be settled in cash, shares of our common stock, or a combination thereof, at our option, and are intended to reduce our exposure to potential dilution upon conversion of the Notes. We paid $60.8 million for the Note Hedges, which was recorded as a reduction to additional paid-in capital. As of January 31, 2019, we had not purchased any shares of our common stock under the Note Hedges.

Warrants

We sold the Warrants to several counterparties. The Warrants provide the counterparties rights to acquire from us up to approximately 6,205,000 shares of our common stock at a price of $75.00 per share. The Warrants expire incrementally on a series of expiration dates beginning in August 2021. At expiration, if the market price per share of our common stock exceeds the strike price of the Warrants, we will be obligated to issue shares of our common stock having a value equal to such excess. The Warrants could have a dilutive effect on net income per share to the extent that the market value of our common stock exceeds the strike price of the Warrants. Proceeds from the sale of the Warrants were $45.2 million and were recorded as additional paid-in capital. As of January 31, 2019, no Warrants had been exercised and all Warrants remained outstanding.

Credit Agreements

On June 29, 2017, we entered into the 2017 Credit Agreement with certain lenders, and terminated the Prior Credit Agreement.

The 2017 Credit Agreement provides for $725.0 million of senior secured credit facilities, comprised of a $425.0 million term loan maturing on June 29, 2024 (the “2017 Term Loan”) and a $300.0 million revolving credit facility maturing on June 29, 2022 (the “2017 Revolving Credit Facility”), subject to increase and reduction from time to time according to the terms of the 2017 Credit Agreement. The majority of the proceeds from the 2017 Term Loan were used to repay all $406.9 million that remained outstanding under the 2014 Term Loans at June 29, 2017 upon termination of the Prior Credit Agreement. There were no borrowings under our Prior Revolving Credit Facility (as defined in Note 7, “Long-Term Debt” to our consolidated financial statements included under Item 8 of this report) at June 29, 2017.

The maturity dates of the 2017 Term Loan and 2017 Revolving Credit Facility will be accelerated to March 1, 2021, if on such date any Notes remain outstanding.

The 2017 Term Loan was subject to an original issuance discount of approximately $0.5 million. This discount is being amortized as interest expense over the term of the 2017 Term Loan using the effective interest method.

Interest rates on loans under the 2017 Credit Agreement are periodically reset, at our option, at either a Eurodollar Rate or an ABR rate (each as defined in the 2017 Credit Agreement), plus in each case a margin.
We are required to pay a commitment fee with respect to unused availability under the 2017 Revolving Credit Facility at a rate per annum determined by reference to our Consolidated Total Debt to Consolidated EBITDA (each as defined in the 2017 Credit Agreement) leverage ratio (the “Leverage Ratio”).

The 2017 Term Loan requires quarterly principal payments of approximately $1.1 million, which commenced on August 1, 2017, with the remaining balance due on June 29, 2024. Optional prepayments of loans under the 2017 Credit Agreement are generally permitted without premium or penalty.

On January 31, 2018, we entered into the 2018 Amendment to our 2017 Credit Agreement, providing for, among other things, a reduction of the interest rate margins on the 2017 Term Loan from 2.25% to 2.00% for Eurodollar loans, and from 1.25% to 1.00% for ABR loans. The vast majority of the impact of the 2018 Amendment was accounted for as a debt modification. For the portion of the 2017 Term Loan which was considered extinguished and replaced by new loans, we wrote off $0.2 million of unamortized deferred debt issuance costs as a loss on early retirement of debt during the three months ended January 31, 2018. The remaining unamortized deferred debt issuance costs and discount are being amortized over the remaining term of the 2017 Term Loan.

For loans under the 2017 Revolving Credit Facility, the margin is determined by reference to our Leverage Ratio. As of January 31, 2019, the interest rate on the 2017 Term Loan was 4.52%. Taking into account the impact of the original issuance discount and related deferred debt issuance costs, the effective interest rate on the 2017 Term Loan was approximately 4.70% at January 31, 2019.

In February 2016, we executed a pay-fixed, receive-variable interest rate swap agreement with a multinational financial institution to partially mitigate risks associated with the variable interest rate on the term loans under our Prior Credit Agreement, under which we pay interest at a fixed rate of 4.143% and receive variable interest of three-month LIBOR (subject to a minimum of 0.75%), plus a spread of 2.75%, on a notional amount of $200.0 million (the "2016 Swap"). Although the Prior Credit Agreement was terminated on June 29, 2017, the 2016 Swap remains in effect, and serves as an economic hedge to partially mitigate the risk of higher borrowing costs under the 2017 Credit Agreement resulting from increases in market interest rates. The 2016 Swap is no longer formally designated as a cash flow hedge for accounting purposes, and therefore settlements are reported within other (expense) income, net on the consolidated statement of operations, not within interest expense.

In April 2018, we executed a pay-fixed, receive-variable interest rate swap agreement with a multinational financial institution to partially mitigate risks associated with the variable interest rate on our 2017 Term Loan for periods following the termination of the 2016 Swap, under which we will pay interest at a fixed rate of 2.949% and receive variable interest of three-month LIBOR (subject to a minimum of 0.00%), on a notional amount of $200.0 million (the "2018 Swap"). The effective date of the 2018 Swap is September 6, 2019, and settlements with the counterparty will occur on a quarterly basis, beginning on November 1, 2019. The 2018 Swap will terminate on June 29, 2024.

During the operating term of the 2018 Swap, if we elect three-month LIBOR at the periodic interest rate reset dates for at least $200.0 million of our 2017 Term Loan, the annual interest rate on that amount of the 2017 Term Loan will be fixed at 4.949% (including the impact of our current 2.00% interest rate margin on Eurodollar loans) for the applicable interest rate period.

The 2018 Swap is designated as a cash flow hedge and as such, changes in its fair value are recognized in accumulated other comprehensive income (loss) in the consolidated balance sheet and are reclassified into the statement of operations within interest expense in the period in which the hedged transaction affects earnings.

Our obligations under the 2017 Credit Agreement are guaranteed by each of our direct and indirect existing and future material domestic wholly owned restricted subsidiaries, and are secured by a security interest in substantially all of our assets and the assets of the guarantor subsidiaries, subject to certain exceptions.

The 2017 Credit Agreement contains certain customary affirmative and negative covenants for credit facilities of this type. The 2017 Credit Agreement also contains a financial covenant that, solely with respect to the 2017 Revolving Credit Facility, requires us to maintain a Leverage Ratio of no greater than 4.50 to 1. At January 31, 2019, our Leverage Ratio was approximately 2.3 to 1. The limitations imposed by the covenants are subject to certain exceptions as detailed in the 2017 Credit Agreement.

The 2017 Credit Agreement provides for events of default with corresponding grace periods that we believe are customary for credit facilities of this type. Upon an event of default, all of our obligations owed under the 2017 Credit Agreement may be declared immediately due and payable, and the lenders' commitments to make loans under the

2017 Credit Agreement may be terminated.

Contractual Obligations

At January 31, 2019, our contractual obligations were as follows:

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	Payments Due by Period				
(in thousands)	Total	< 1 year	1-3 years	3-5 years	> 5 years
Long-term debt obligations, including interest	$938,966	$29,098	$455,189	$45,308	$409,371
Operating lease obligations	129,379	22,769	41,099	32,034	33,477
Capital lease obligations	4,597	1,343	2,382	872	—
Purchase obligations	158,712	120,349	22,332	16,031	—
Other long-term obligations	286	47	94	94	51
Total contractual obligations	$1,231,940	$173,606	$521,096	$94,339	$442,899

The long-term debt obligations reflected above include projected interest payments over the term of our outstanding debt as of January 31, 2019, assuming interest rates consistent with those in effect for our 2017 Term Loan as of January 31, 2019.

Operating lease obligations reflected above exclude future sublease income from certain space we have subleased to third parties. As of January 31, 2019, total expected future sublease income was $4.5 million and will range from $0.6 million to $0.9 million on an annual basis through February 2025.

We entered into leases for infrastructure equipment that qualify as capital leases during the years ended January 31, 2019 and 2018.

Our purchase obligations are associated with agreements for purchases of goods or services generally including agreements that are enforceable and legally binding and that specify all significant terms, including fixed or minimum quantities to be purchased; fixed, minimum, or variable price provisions; and the approximate timing of the transactions. Agreements to purchase goods or services that have cancellation provisions with no penalties are excluded from these purchase obligations.

Our consolidated balance sheet at January 31, 2019 included $33.1 million of non-current tax reserves, net of related benefits (including interest and penalties of $4.6 million) for uncertain tax positions. However, these amounts are not included in the table above because we are unable to reasonably estimate the timing of payments for these obligations. We do not expect to make any significant payments for these uncertain tax positions within the next 12 months.

Contingent Payments Associated with Business Combinations

In connection with certain of our business combinations, we have agreed to make contingent cash payments to the former owners of the acquired companies based upon achievement of performance targets following the acquisition dates.

For the year ended January 31, 2019, we made $13.6 million of payments under contingent consideration arrangements. As of January 31, 2019, potential future cash payments under contingent consideration arrangements, including consideration earned in completed performance periods which is still to be paid, total $150.1 million, the estimated fair value of which was $61.3 million, including $28.4 million reported in accrued expenses and other current liabilities, and $32.9 million reported in other liabilities. The performance periods associated with these potential payments extend through January 2022.

Off-Balance Sheet Arrangements

As of January 31, 2019, we did not have any off-balance sheet arrangements that we believe have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenue or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors.

Recent Accounting Pronouncements

See also Note 1, “Summary of Significant Accounting Policies” to our consolidated financial statements included under Item 8 of this report for additional information about recent accounting pronouncements recently adopted and those not yet effective.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the risk of loss that may impact our financial condition due to adverse changes in financial market prices and rates. We are exposed to market risk related to changes in interest rates and foreign currency exchange rate fluctuations. To manage the volatility relating to interest rate and foreign currency risks, we periodically enter into derivative instruments

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including foreign currency forward exchange contracts and interest rate swap agreements. It is our policy to use derivative instruments only to the extent considered necessary to meet our risk management objectives. We use derivative instruments solely to reduce the financial impact of these risks and do not use derivative instruments for speculative purposes.

Interest Rate Risk on Our Debt

In June 2014, we issued $400.0 million in aggregate principal amount of 1.50% convertible senior notes due June 1, 2021. Holders may convert the Notes prior to maturity upon the occurrence of certain conditions. Upon conversion, we would be required to pay the holders, at our election, cash, shares of common stock, or a combination of both. Concurrent with the issuance of the Notes, we entered into the Note Hedges and sold the Warrants. These separate transactions were completed to reduce our exposure to potential dilution upon conversion of the Notes.

The Notes have a fixed annual interest rate of 1.50% and therefore do not have interest rate risk exposure. However, the fair values of the Notes are subject to interest rate risk, market risk, and other factors due to the convertible feature. The fair values of the Notes are also affected by our common stock price. Generally, the fair values of Notes will increase as interest rates fall and/or our common stock price increases, and decrease as interest rates rise and/or our common stock price decreases. Changes in the fair values of the Notes do not impact our financial position, cash flows, or results of operations due to the fixed nature of the debt obligations. We do not carry the Notes at fair value on our consolidated balance sheet, but we report the fair value of the Notes for disclosure purposes.

On June 29, 2017, we entered into the 2017 Credit Agreement with certain lenders and terminated our Prior Credit Agreement. The 2017 Credit Agreement provides for $725.0 million of senior secured credit facilities, comprised of the $425.0 million 2017 Term Loan maturing on June 29, 2024 and the $300.0 million 2017 Revolving Credit Facility maturing on June 29, 2022, subject to increase and reduction from time to time according to the terms of the 2017 Credit Agreement.

Interest rates on loans under the 2017 Credit Agreement are periodically reset, at our option, at either a Eurodollar Rate or an ABR rate (each as defined in the 2017 Credit Agreement), plus in each case a margin. The margin for the 2017 Term loan is fixed at 2.00% for Eurodollar loans, and 1.00% for ABR loans. For loans under the Revolving Credit Facility, the margin is determined by reference to our Consolidated Total Debt to Consolidated EBITDA (each defined in the 2017 Credit Agreement) leverage ratio. As of January 31, 2019, we have $418.6 million of outstanding term loan borrowings and no outstanding borrowings under the revolving credit facility. As of January 31, 2019, the interest rate on our term loan borrowings was 4.52%.

Because the interest rates applicable to borrowings under the 2017 Credit Agreement are variable, we are exposed to market risk from changes in the underlying index rates, which affect our cost of borrowing. To partially mitigate risks associated with the variable interest rates on the term loan borrowings under the Prior Credit Agreement, in February 2016, we executed a pay-fixed, receive-variable interest rate swap agreement with a multinational financial institution under which we pay interest at a fixed rate of 4.143% and receive variable interest of three-month LIBOR (subject to a minimum of 0.75%), plus a spread of 2.75%, on a notional amount of $200.0 million (the “2016 Swap”). Although the Prior Credit Agreement was terminated on June 29, 2017, the 2016 Swap remains in effect, and serves as an economic hedge to partially mitigate the risk of higher borrowing costs under the 2017 Credit Agreement resulting from increases in market interest rates. Settlements with the counterparty under the 2016 Swap occur quarterly, and the agreement will terminate on September 6, 2019.

Prior to June 29, 2017, the 2016 Swap was designated as a cash flow hedge for accounting purposes. On June 29, 2017, concurrent with the execution of the 2017 Credit Agreement and termination of the Prior Credit Agreement, the 2016 Swap was no longer designated as a cash flow hedge for accounting purposes and, because occurrence of the specific forecasted variable cash flows which had been hedged by the 2016 Swap agreement was no longer probable, the $0.9 million fair value of the 2016 Swap at that date was reclassified from accumulated other comprehensive income (loss) into the consolidated statement of operations as income within other income (expense), net. Ongoing changes in the fair value of the 2016 Swap agreement are now recognized within other income (expense), net in the consolidated statement of operations, not within interest expense. As of January 31, 2019, the fair value of the 2016 Swap was a gain of $2.1 million.

In April 2018, we executed a pay-fixed, receive-variable interest rate swap agreement with a multinational financial institution to partially mitigate risks associated with the variable interest rate on our 2017 Term Loan for periods following the termination of the 2016 Swap in September 2019, under which we will pay interest at a fixed rate of 2.949% and receive variable interest of three-month LIBOR (subject to a minimum of 0.00%), on a notional amount of $200.0 million (the “2018 Swap”). The effective date of the 2018 Swap is September 6, 2019, and settlements with the counterparty will occur on a quarterly basis, beginning on November 1, 2019. The 2018 Swap is designated as a cash flow hedge for accounting purposes and will terminate on June 29, 2024. As of January 31, 2019, the fair value of the 2018 Swap was a loss of $4.0 million.

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During the operating term of the 2018 Swap, if we elect three-month LIBOR at the periodic interest rate reset dates for at least $200.0 million of our 2017 Term Loan, the annual interest rate on that amount of the 2017 Term Loan will be fixed at 4.949% (including the impact of our current 2.00% interest rate margin on Eurodollar loans) for the applicable interest rate period.

The periodic interest rates on borrowings under the 2017 Credit Agreement are currently a function of several factors, the most important of which is LIBOR, which is the rate we elect for the vast majority of our periodic interest rate reset events.

The Financial Conduct Authority of the United Kingdom plans to phase out LIBOR by the end of 2021, and we have approached the administrative agent under this facility to discuss the impact of the planned phase out. However, it is currently uncertain what, if any, alternative reference interest rates or other reforms will be enacted in response to the planned phase out, and we cannot assure you that an alternative to LIBOR (on which the Eurodollar Rate is based) that we find acceptable will be available to us.

Excluding the impact of the interest swap agreement, upon our borrowings as of January 31, 2019, for each 1.00% increase in the applicable LIBOR rate, our annual interest expense would increase by approximately $4.2 million.

Interest Rate Risk on Our Investments

We invest in cash, cash equivalents, bank time deposits, and marketable debt securities. Market interest rate changes increase or decrease the interest income we generate from these interest-bearing assets. Our cash, cash equivalents, and bank time deposits are primarily maintained at high credit-quality financial institutions around the world, and our marketable debt security investments are restricted to highly rated corporate debt securities. We have not invested in marketable debt securities with remaining maturities in excess of twelve months or in marketable equity securities during the three-year period ended January 31, 2019.

The primary objective of our investment activities is the preservation of principal while maximizing investment income and minimizing risk. We have investment guidelines relative to diversification and maturities designed to maintain safety and liquidity.

As of January 31, 2019 and 2018, we had cash and cash equivalents totaling approximately $370.0 million and $337.9 million, respectively, consisting of demand deposits, bank time deposits with maturities of 90 days or less, money market accounts, and marketable debt securities with remaining maturities of 90 days or less. At such dates we also held $65.5 million and $61.7 million, respectively, of restricted cash, cash equivalents, and restricted bank time deposits (including long-term portions) which were not available for general operating use. These restricted balances primarily represent deposits to secure bank guarantees in connection with customer sales contracts. The amounts of these deposits can vary depending upon the terms of the underlying contracts. We also had short-term investments of $32.3 million and $6.6 million at January 31, 2019 and 2018, respectively, consisting of bank time deposits and marketable debt securities of corporations, all with remaining maturities in excess of 90 days, but less than one year, at the time of purchase.

To provide a meaningful assessment of the interest rate risk associated with our investment portfolio, we performed a sensitivity analysis to determine the impact a change in interest rates would have on the value of the investment portfolio assuming, during the year ending January 31, 2019, average short-term interest rates increase or decrease by 50 basis points relative to average rates realized during the year ended January 31, 2018. Such a change would cause our projected interest income from cash, cash equivalents, restricted cash and cash equivalents, bank time deposits, and short-term investments to increase or decrease by approximately $2.3 million, assuming a similar level of investments in the year ending January 31, 2020 as in the year ended January 31, 2019.

Due to the short-term nature of our cash and cash equivalents, time deposits, money market accounts, and marketable debt securities, their carrying values approximate their market values and are not generally subject to price risk due to fluctuations in interest rates.

Foreign Currency Exchange Risk

The functional currency for most of our foreign subsidiaries is the applicable local currency, although we have several subsidiaries with functional currencies that differ from their local currency, of which the most notable exceptions are our subsidiaries in Israel, whose functional currencies are the U.S. dollar. We are exposed to foreign exchange rate fluctuations as we convert the financial statements of our foreign subsidiaries into U.S. dollars for consolidated reporting purposes. If there are changes in foreign currency exchange rates, the conversion of the foreign subsidiaries' financial statements into U.S. dollars results in an unrealized gain or loss which is recorded as a component of accumulated other comprehensive loss within stockholders' equity.

For the year ended January 31, 2019, a significant portion of our operating expenses, primarily labor expenses, were denominated in the local currencies where our foreign operations are located, primarily Israel, the United Kingdom, Germany, Australia, and Singapore. We also generate some portion of our revenue in foreign currencies, mainly the euro, British pound sterling, Singapore dollar, and Australian dollar. As a result, our consolidated U.S. dollar operating results are subject to potential material adverse impact from fluctuations in foreign currency exchange rates between the U.S. dollar and the other currencies in which we transact.

In addition, we have certain monetary assets and liabilities that are denominated in currencies other than the respective entity's functional currency. Changes in the functional currency value of these assets and liabilities result in gains or losses which are reported within other income (expense), net in our consolidated statement of operations. We recorded net foreign currency losses of $5.5 million and $2.7 million, for the years ended January 31, 2019, and 2017, respectively, and gains of $6.8 million, for the year ended January 31, 2018.

From time to time, we enter into foreign currency forward contracts in an effort to reduce the volatility of cash flows primarily related to forecasted payroll and payroll-related expenses denominated in Israeli shekels. These contracts are generally limited to durations of approximately 12 months or less. We have also periodically entered into foreign currency forward contracts to manage exposures resulting from forecasted customer collections denominated in currencies other than the respective entity's functional currency and exposures from cash, cash equivalents, and short-term investments and accounts payable denominated in currencies other than the applicable functional currency.

During the year ended January 31, 2019, we recorded $1.9 million of net gains on foreign currency forward contracts not designated as hedges for accounting purposes. For the year ended January 31, 2018, net losses on foreign currency forward contracts not designated as hedges for accounting purposes were $2.5 million, and we recorded net losses of $0.3 million on such contracts for the year ended January 31, 2017. We had $0.7 million of net unrealized losses on outstanding foreign currency forward contracts as of January 31, 2019, with notional amounts totaling $123.0 million. We had $2.4 million of net unrealized gains on outstanding foreign currency forward contracts as of January 31, 2018, with notional amounts totaling $153.5 million.

A sensitivity analysis was performed on all of our foreign exchange derivatives as of January 31, 2019. This sensitivity analysis was based on a modeling technique that measures the hypothetical market value resulting from a 10% shift in the value of exchange rates relative to the U.S. dollar, and assumes no changes in interest rates. A 10% increase in the relative value of the U.S. dollar would decrease the estimated fair value of our foreign exchange derivatives by approximately $4.1 million. Conversely, a 10% decrease in the relative value of the U.S. dollar would increase the estimated the fair value of these financial instruments by approximately $5.1 million.

The counterparties to our foreign currency forward contracts are multinational commercial banks. While we believe the risk of counterparty nonperformance is not material, past disruptions in the global financial markets have impacted some of the financial institutions with which we do business. A sustained decline in the financial stability of financial institutions as a result of disruption in the financial markets could affect our ability to secure creditworthy counterparties for our foreign currency hedging programs.

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Item 8. Financial Statements and Supplementary Data

VERINT SYSTEMS INC. AND SUBSIDIARIES
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Verint Systems Inc.
Melville, New York

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Verint Systems Inc. and subsidiaries (the "Company") as of January 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income (loss), shareholders' equity, and cash flows, for each of the three years in the period ended January 31, 2019, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of January 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended January 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of January 31, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 27, 2019, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the 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 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 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ DELOITTE & TOUCHE LLP

New York, New York
March 27, 2019

We have served as the Company's auditor since 2001.

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VERINT SYSTEMS INC. AND SUBSIDIARIES
Consolidated Balance Sheets

	January 31,	
(in thousands, except share and per share data)	2019	2018
Assets		
Current Assets:		
Cash and cash equivalents	$369,975	$337,942
Restricted cash and cash equivalents, and restricted bank time deposits	42,262	33,303
Short-term investments	32,329	6,566
Accounts receivable, net of allowance for doubtful accounts of $3.8 million and $2.2 million, respectively	375,663	296,324
Contract assets	63,389	—
Inventories	24,952	19,871
Deferred cost of revenue	10,302	6,096
Prepaid expenses and other current assets	87,474	82,090
Total current assets	1,006,346	782,192
Property and equipment, net	100,134	89,089
Goodwill	1,417,481	1,388,299
Intangible assets, net	225,183	226,093
Capitalized software development costs, net	13,342	9,228
Long-term deferred cost of revenue	4,630	2,804
Deferred income taxes	21,040	30,878
Other assets	78,871	52,037
Total assets	$2,867,027	$2,580,620
Liabilities and Stockholders' Equity		
Current Liabilities:		
Accounts payable	$71,621	$84,639
Accrued expenses and other current liabilities	208,481	220,265
Current maturities of long-term debt	4,343	4,500
Contract liabilities	377,376	196,107
Total current liabilities	661,821	505,511
Long-term debt	777,785	768,484
Long-term contract liabilities	30,094	24,519
Deferred income taxes	43,171	35,305
Other liabilities	93,352	114,465
Total liabilities	1,606,223	1,448,284
Commitments and Contingencies		
Stockholders' Equity:		
Preferred stock - $0.001 par value; authorized 2,207,000 shares at January 31, 2019 and 2018, respectively; none issued.	—	—
Common stock - $0.001 par value; authorized 120,000,000 shares. Issued 66,998,000 and 65,497,000 shares; outstanding 65,333,000 and 63,836,000 shares at January 31, 2019 and 2018, respectively	67	65
Additional paid-in capital	1,586,266	1,519,724
Treasury stock, at cost - 1,665,000 and 1,661,000 shares at January 31, 2019 and 2018, respectively	(57,598)	(57,425)
Accumulated deficit	(134,274)	(238,312)
Accumulated other comprehensive loss	(145,225)	(103,460)

Total Verint Systems Inc. stockholders' equity	1,249,236	1,120,592
Noncontrolling interests	11,568	11,744
Total stockholders' equity	1,260,804	1,132,336
Total liabilities and stockholders' equity	$2,867,027	$2,580,620

See notes to consolidated financial statements.

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VERINT SYSTEMS INC. AND SUBSIDIARIES
Consolidated Statements of Operations

	Year Ended January 31,		
(in thousands, except per share data)	2019	2018	2017
Revenue:			
Product	$454,650	$399,662	$378,504
Service and support	775,097	735,567	683,602
Total revenue	1,229,747	1,135,229	1,062,106
Cost of revenue:			
Product	129,922	131,989	123,279
Service and support	293,888	276,582	261,978
Amortization of acquired technology	25,403	38,216	37,372
Total cost of revenue	449,213	446,787	422,629
Gross profit	780,534	688,442	639,477
Operating expenses:			
Research and development, net	209,106	190,643	171,070
Selling, general and administrative	426,183	414,960	406,952
Amortization of other acquired intangible assets	31,010	34,209	44,089
Total operating expenses	666,299	639,812	622,111
Operating income	114,235	48,630	17,366
Other income (expense), net:			
Interest income	4,777	2,477	1,048
Interest expense	(37,344)	(35,959)	(34,962)
Losses on early retirements of debt	—	(2,150)	—
Other (expense) income, net	(3,906)	5,902	(6,926)
Total other expense, net	(36,473)	(29,730)	(40,840)
Income (loss) before provision for income taxes	77,762	18,900	(23,474)
Provision for income taxes	7,542	22,354	2,772
Net income (loss)	70,220	(3,454)	(26,246)
Net income attributable to noncontrolling interests	4,229	3,173	3,134
Net income (loss) attributable to Verint Systems Inc.	$65,991	$(6,627)	$(29,380)
Net income (loss) per common share attributable to Verint Systems Inc.:			
Basic	$1.02	$(0.10)	$(0.47)
Diluted	$1.00	$(0.10)	$(0.47)
Weighted-average common shares outstanding:			
Basic	64,913	63,312	62,593
Diluted	66,245	63,312	62,593

See notes to consolidated financial statements.

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VERINT SYSTEMS INC. AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income (Loss)

	Year Ended January 31,		
(in thousands)	2019	2018	2017
Net income (loss)	$70,220	$(3,454)	$(26,246)
Other comprehensive (loss) income, net of reclassification adjustments:			
Foreign currency translation adjustments	(34,485)	49,810	(42,130)
Net increase from available-for-sale securities	—	—	110
Net (decrease) increase from foreign exchange contracts designated as hedges	(4,774)	3,042	2,750
Net (decrease) increase from interest rate swap designated as a hedge	(4,028)	(1,021)	1,021
Benefit (provision) for income taxes on net (decrease) increase from foreign exchange contracts and interest rate swap designated as hedges	1,466	85	(693)
Other comprehensive (loss) income	(41,821)	51,916	(38,942)
Comprehensive income (loss)	28,399	48,462	(65,188)
Comprehensive income attributable to noncontrolling interests	4,173	3,693	2,854
Comprehensive income (loss) attributable to Verint Systems Inc.	$24,226	$44,769	$(68,042)

See notes to consolidated financial statements.

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VERINT SYSTEMS INC. AND SUBSIDIARIES
Consolidated Statements of Stockholders' Equity

	Verint Systems Inc. Stockholders' Equity								
	Common Stock								
(in thousands)	Shares	Par Value	Additional Paid-in Capital	Treasury Stock	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Verint Systems Inc. Stockholders' Equity	Non-controlling Interests	Total Stockholders' Equity
Balances as of January 31, 2016	62,266	$63	$1,387,955	$(10,251)	$(201,436)	$(116,194)	$1,060,137	$8,027	$1,068,164
Net (loss) income	—	—	—	—	(29,380)	—	(29,380)	3,134	(26,246)
Other comprehensive loss	—	—	—	—	—	(38,662)	(38,662)	(280)	(38,942)
Stock-based compensation - equity-classified awards	—	—	55,123	—	—	—	55,123	—	55,123
Exercises of stock options	1	—	7	—	—	—	7	—	7
Common stock issued for stock awards and stock bonuses	1,458	1	6,952	—	—	—	6,953	—	6,953
Treasury stock acquired	(1,306)	—	—	(46,896)	—	—	(46,896)	—	(46,896)
Dividends to noncontrolling interest	—	—	—	—	—	—	—	(2,421)	(2,421)
Tax effects from stock award plans	—	—	(702)	—	—	—	(702)	—	(702)
Balances as of January 31, 2017	62,419	64	1,449,335	(57,147)	(230,816)	(154,856)	1,006,580	8,460	1,015,040
Net (loss) income	—	—	—	—	(6,627)	—	(6,627)	3,173	(3,454)
Other comprehensive income	—	—	—	—	—	51,396	51,396	520	51,916
Stock-based compensation - equity-classified awards	—	—	57,414	—	—	—	57,414	—	57,414
Common stock issued for stock awards and stock bonuses	1,424	1	12,975	—	—	—	12,976	—	12,976
Treasury stock acquired	(7)	—	—	(278)	—	—	(278)	—	(278)
	—	—	—	—	—	—	—	2,300	2,300

Initial noncontrolling interest related to business combination									
Capital contributions by noncontrolling interest	—	—	—	—	—	—	—	595	595
Dividends to noncontrolling interest	—	—	—	—	—	—	—	(3,304)	(3,304)
Cumulative effect of adoption of ASU No. 2016-16	—	—	—	—	(869)	—	(869)	—	(869)
Balances as of January 31, 2018	63,836	65	1,519,724	(57,425)	(238,312)	(103,460)	1,120,592	11,744	1,132,336
Net income	—	—	—	—	65,991	—	65,991	4,229	70,220
Other comprehensive loss	—	—	—	—	—	(41,765)	(41,765)	(56)	(41,821)
Stock-based compensation - equity-classified awards	—	—	57,659	—	—	—	57,659	—	57,659
Common stock issued for stock awards and stock bonuses	1,501	2	8,883	—	—	—	8,885	—	8,885
Treasury stock acquired	(4)	—	—	(173)	—	—	(173)	—	(173)
Capital contributions by noncontrolling interest	—	—	—	—	—	—	—	60	60
Dividends to noncontrolling interest	—	—	—	—	—	—	—	(4,409)	(4,409)
Cumulative effect of adoption of ASU No. 2014-09	—	—	—	—	38,047	—	38,047	—	38,047
Balances as of January 31, 2019	65,333	$67	$1,586,266	$(57,598)	$(134,274)	$(145,225)	$1,249,236	$11,568	$1,260,804

See notes to consolidated financial statements.

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VERINT SYSTEMS INC. AND SUBSIDIARIES
Consolidated Statements of Cash Flows

	Year Ended January 31,		
(in thousands)	2019	2018	2017
Cash flows from operating activities:			
Net income (loss)	$70,220	$(3,454)	$(26,246)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	88,915	105,730	114,257
Provision for doubtful accounts	2,746	559	1,791
Stock-based compensation, excluding cash-settled awards	66,657	69,296	65,421
Amortization of discount on convertible notes	11,850	11,243	10,668
Benefit from deferred income taxes	(3,017)	(7,533)	(16,941)
Excess tax benefits from stock award plans	—	—	(6)
Non-cash (gains) losses on derivative financial instruments, net	(2,511)	17	323
Losses on early retirements of debt	—	2,150	—
Other non-cash items, net	(2,328)	(428)	7,666
Changes in operating assets and liabilities, net of effects of business combinations:			
Accounts receivable	(21,520)	(23,512)	(353)
Contract assets	5,751	—	—
Inventories	(8,208)	(2,865)	(286)
Deferred cost of revenue	1,400	282	7,124
Prepaid expenses and other assets	(6,153)	(2,030)	4,941
Accounts payable and accrued expenses	(15,648)	10,158	(9,521)
Contract liabilities	32,919	9,686	8,705
Other liabilities	(7,328)	8,599	4,987
Other, net	1,506	(1,571)	(115)
Net cash provided by operating activities	215,251	176,327	172,415
Cash flows from investing activities:			
Cash paid for business combinations, including adjustments, net of cash acquired	(90,022)	(102,978)	(141,803)
Purchases of property and equipment	(31,686)	(35,530)	(27,540)
Purchases of investments	(59,065)	(11,875)	(36,761)
Maturities and sales of investments	33,118	8,721	89,342
Settlements of derivative financial instruments not designated as hedges	1,335	(1,558)	(349)
Cash paid for capitalized software development costs	(7,320)	(3,126)	(2,338)
Change in restricted bank time deposits, including long-term portion	(21,304)	362	3,007
Other investing activities	(779)	(210)	—
Net cash used in investing activities	(175,723)	(146,194)	(116,442)
Cash flows from financing activities:			
Proceeds from borrowings, net of original issuance discount	—	444,341	—
Repayments of borrowings and other financing obligations	(5,983)	(431,888)	(3,308)
Payments of equity issuance, debt issuance, and other debt-related costs	(206)	(7,137)	(249)
Proceeds from exercises of stock options	4	—	7
Dividends paid to noncontrolling interest	(4,409)	(3,304)	(2,421)
Purchases of treasury stock	(173)	—	(46,896)
Excess tax benefits from stock award plans	—	—	6
	(11,114)	(7,515)	(4,058)

Payments of contingent consideration for business combinations (financing portion) and other financing activities			
Net cash used in financing activities	(21,881)	(5,503)	(56,919)
Foreign currency effects on cash, cash equivalents, restricted cash, and restricted cash equivalents	(3,158)	4,251	(4,167)
Net increase (decrease) in cash, cash equivalents, restricted cash, and restricted cash equivalents	14,489	28,881	(5,113)
Cash, cash equivalents, restricted cash, and restricted cash equivalents, beginning of year	398,210	369,329	374,442

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Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of year	$412,699	$398,210	$369,329
Reconciliation of cash, cash equivalents, restricted cash, and restricted cash equivalents at end of period to the condensed consolidated balance sheets:			
Cash and cash equivalents	$369,975	$337,942	$307,363
Restricted cash and cash equivalents included in restricted cash and cash equivalents, and restricted bank time deposits	40,152	32,955	8,237
Restricted cash and cash equivalents included in other assets	2,572	27,313	53,729
Total cash, cash equivalents, restricted cash, and restricted cash equivalents	$412,699	$398,210	$369,329

See notes to consolidated financial statements.

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VERINT SYSTEMS INC. AND SUBSIDIARIES
Notes to Consolidated Financial Statements

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Description of Business

Unless the context otherwise requires, the terms “Verint”, “we”, “us”, and “our” in these notes to consolidated financial statements refer to Verint Systems Inc. and its consolidated subsidiaries.

Verint is a global leader in Actionable Intelligence solutions. In a world of massive information growth, our solutions empower organizations with crucial, actionable insights and enable decision makers to anticipate, respond, and take action. Today, over 10,000 organizations in more than 180 countries, including over 85 percent of the Fortune 100, use Verint’s Actionable Intelligence solutions, deployed in the cloud and on premises, to make more informed, timely, and effective decisions.

Our Actionable Intelligence leadership is powered by innovative, enterprise-class software built with artificial intelligence, analytics, automation, and deep domain expertise established by working closely with some of the most sophisticated and forward-thinking organizations in the world. Our research and development (“R&D”) team is focused on actionable intelligence and is comprised of approximately 1,900 professionals. Our innovative solutions are backed-up by a strong IP portfolio with close to 1,000 patents and patent applications worldwide across data capture, artificial intelligence, unstructured data analytics, predictive analytics and automation.

Headquartered in Melville, New York, we support our customers around the globe directly and with an extensive network of selling and support partners.

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of Verint Systems Inc., our wholly owned or otherwise controlled subsidiaries, and a joint venture in which we hold a 50% equity interest. The joint venture is a variable interest entity in which we are the primary beneficiary. Noncontrolling interests in less than wholly owned subsidiaries are reflected within stockholders’ equity on our consolidated balance sheet, but separately from our stockholders’ equity. We hold an option to acquire the noncontrolling interests in two majority owned subsidiaries and we account for the option as an in-substance investment in the noncontrolling common stock of each such subsidiary. We include the fair value of the option within other liabilities and do not recognize noncontrolling interests in these subsidiaries.

We include the results of operations of acquired companies from the date of acquisition. All significant intercompany transactions and balances are eliminated.

Equity investments in companies in which we have less than a 20% ownership interest and cannot exercise significant influence, and which do not have readily determinable fair values, are accounted for at cost, adjusted for changes resulting from observable price changes in orderly transactions for an identical or similar investment of the same issuer, less any impairment.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (“GAAP”) requires our management to make estimates and assumptions, which may affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Restricted Cash and Cash Equivalents, and Restricted Bank Time Deposits

Restricted cash and cash equivalents, and restricted bank time deposits are pledged as collateral or otherwise restricted as to use for vendor payables, general liability insurance, workers’ compensation insurance, warranty programs, and other obligations.

Investments

Our investments generally consist of bank time deposits, and marketable debt securities of corporations, the U.S. government, and agencies of the U.S. government, all with remaining maturities in excess of 90 days at the time of purchase. As of

January 31, 2019 we held no marketable debt securities. As of January 31, 2018, we held $2.0 million of marketable debt securities. Investments with maturities in excess of one year are included in other assets.

Accounts Receivable, Net

Trade accounts receivable are comprised of invoiced amounts due from customers for which we have an unconditional right to collect and are not interest-bearing. Credit is extended to customers based on an evaluation of their financial condition and other factors. We generally do not require collateral or other security to support accounts receivable.

Please refer to Note 2, “Revenue Recognition” under the heading “Financial Statement Impact of Adoption” for a description of the presentation changes made to accounts receivable on our consolidated balance sheet as of February 1, 2018, with the adoption of the new revenue accounting standard.

Concentrations of Credit Risk

Financial instruments that potentially subject us to concentrations of credit risk consist principally of cash and cash equivalents, bank time deposits, short-term investments, trade accounts receivable, and contract assets (unbilled amounts previously included in accounts receivable). We invest our cash in bank accounts, certificates of deposit, and money market accounts with major financial institutions, in U.S. government and agency obligations, and in debt securities of corporations. By policy, we seek to limit credit exposure on investments through diversification and by restricting our investments to highly rated securities.

We grant credit terms to our customers in the ordinary course of business. Concentrations of credit risk with respect to trade accounts receivable and contract assets are generally limited due to the large number of customers comprising our customer base and their dispersion across different industries and geographic areas. There are two customers in our Cyber Intelligence segment that combined accounted for $84.3 million and $99.7 million of our aggregated accounts receivable and contract assets, at January 31, 2019 and 2018, respectively. These customers are governmental agencies outside of the U.S. which we believe present insignificant credit risk.

Allowance for Doubtful Accounts

We estimate the collectability of our accounts receivable balances each accounting period and adjust our allowance for doubtful
accounts accordingly. Considerable judgment is required in assessing the collectability of accounts receivable, including consideration of the creditworthiness of each customer, their collection history, and the related aging of past due accounts receivable balances. We evaluate specific accounts when we learn that a customer may be experiencing a deteriorating financial condition due to lower credit ratings, bankruptcy, or other factors that may affect its ability to render payment. We write-off an account receivable and charge it against its recorded allowance at the point when it is considered uncollectible.

The following table summarizes the activity in our allowance for doubtful accounts for the years ended January 31, 2019, 2018, and 2017:

	Year Ended January 31,		
(in thousands)	2019	2018	2017
Allowance for doubtful accounts, beginning of year	$2,217	$1,842	$1,170
Provisions charged to expense	2,746	559	1,791
Amounts written off	(1,172)	(482)	(1,484)
Other, including fluctuations in foreign exchange rates	(14)	298	365
Allowance for doubtful accounts, end of year	$3,777	$2,217	$1,842

Inventories

Inventories are stated at the lower of cost or market. Cost is determined using the weighted-average method of inventory accounting. The valuation of our inventories requires us to make estimates regarding excess or obsolete inventories, including making estimates of the future demand for our products. Although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand, price, or technological developments could have a significant impact on the value of our inventory and reported operating results. Charges for excess and obsolete inventories are included within cost of revenue.

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Property and Equipment, net

Property and equipment are stated at cost, net of accumulated depreciation and amortization. Depreciation is computed using the straight-line method based over the estimated useful lives of the assets. The vast majority of equipment, furniture and other is depreciated over periods ranging from three to seven years. Software is typically depreciated over periods ranging from three to four years. Buildings are depreciated over periods ranging from ten to twenty-five years. Leasehold improvements are amortized over the shorter of their estimated useful lives or the related lease term. Capital leased assets are amortized over the related lease term.

The cost of maintenance and repairs of property and equipment is charged to operations as incurred. When assets are retired or
disposed of, the cost and accumulated depreciation or amortization thereon are removed from the consolidated balance sheet and any resulting gain or loss is recognized in the consolidated statement of operations.

Segment Reporting

Operating segments are defined as components of an enterprise about which separate financial information is available that is regularly evaluated by the enterprise’s chief operating decision maker (“CODM”), or decision making group, in deciding how to allocate resources and in assessing performance.

We conduct our business through two operating segments, which are also our reportable segments, Customer Engagement Solutions (“Customer Engagement”) and Cyber Intelligence Solutions (“Cyber Intelligence”). Organizing our business through two operating segments allows us to align our resources and domain expertise to effectively address the Actionable Intelligence market. We determine our reportable segments based on a number of factors our management uses to evaluate and run our business operations, including similarities of customers, products, and technology. Our Chief Executive Officer is our CODM, who regularly reviews segment revenue and segment operating contribution when assessing the financial performance of our segments and allocating resources.

We measure the performance of our operating segments based upon segment revenue and segment contribution.

Segment revenue includes adjustments associated with revenue of acquired companies which are not recognizable within GAAP revenue. These adjustments primarily relate to the acquisition-date excess of the historical carrying value over the fair value of acquired companies’ future maintenance and service performance obligations. As the obligations are satisfied, we report our segment revenue using the historical carrying values of these obligations, which we believe better reflects our ongoing maintenance and service revenue streams, whereas GAAP revenue is reported using the obligations’ acquisition-date fair values. Segment revenue adjustments can also result from aligning an acquired company’s historical revenue recognition policies to our policies.

Segment contribution includes segment revenue and expenses incurred directly by the segment, including material costs, service costs, research and development and selling, marketing, and administrative expenses. When determining segment contribution, we do not allocate certain operating expenses, which are provided by shared resources or are otherwise generally not controlled by segment management. These expenses are reported as “Shared support expenses” when reconciling segment contribution to operating income, the majority of which are expenses for administrative support functions, such as information technology, human resources, finance, legal, and other general corporate support, and for occupancy expenses. These unallocated expenses also include procurement, manufacturing support, and logistics expenses.

In addition, segment contribution does not include amortization of acquired intangible assets, stock-based compensation, and other expenses that either can vary significantly in amount and frequency, are based upon subjective assumptions, or in certain cases are unplanned for or difficult to forecast, such as restructuring expenses and business combination transaction and integration expenses, all of which are not considered when evaluating segment performance.

Revenue from transactions between our operating segments is not material.

Please refer to Note 16, “Segment, Geographic, and Significant Customer Information” for further details regarding our operating segments.

Goodwill, Other Acquired Intangible Assets, and Long-Lived Assets

For business combinations, the purchase prices are allocated to the tangible assets and intangible assets acquired and liabilities assumed based on their estimated fair values on the acquisition dates, with the remaining unallocated purchase prices recorded as goodwill. Goodwill is assigned, at the acquisition date, to those reporting units expected to benefit from the synergies of the combination.

We test goodwill for impairment at the reporting unit level, which can be an operating segment or one level below an operating segment, on an annual basis as of November 1, or more frequently if changes in facts and circumstances indicate that impairment in the value of goodwill may exist. As of January 31, 2019, our reporting units are Customer Engagement, Cyber Intelligence (excluding situational intelligence solutions), and Situational Intelligence, which is a component of our Cyber Intelligence operating segment.

In testing for goodwill impairment, we may elect to utilize a qualitative assessment to evaluate whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we elect to bypass a qualitative assessment, or if our qualitative assessment indicates that goodwill impairment is more likely than not, we perform quantitative impairment testing. For quantitative impairment testing performed prior to February 1, 2018, we performed a two-step test by first comparing the carrying value of the reporting unit to its fair value. If the carrying value exceeded the fair value, a second step was performed to compute the goodwill impairment. Effective with our February 1, 2018 adoption of Accounting Standards Update (“ASU”) No. 2017-04, Intangibles-Goodwill and Other (Topic 350) - Simplifying the Test for Goodwill Impairment, if our quantitative testing determines that the carrying value of a reporting unit exceeds its fair value, goodwill impairment is recognized in an amount equal to that excess, limited to the total goodwill allocated to that reporting unit, eliminating the need for the second step.

We utilize some or all of three primary approaches to assess the fair value of a reporting unit: (a) an income-based approach, using projected discounted cash flows, (b) a market-based approach, using valuation multiples of comparable companies, and (c) a transaction-based approach, using valuation multiples for recent acquisitions of similar businesses made in the marketplace. Our estimate of fair value of each reporting unit is based on a number of subjective factors, including: (a) appropriate consideration of valuation approaches (income approach, comparable public company approach, and comparable transaction approach), (b) estimates of future growth rates, (c) estimates of our future cost structure, (d) discount rates for our estimated cash flows, (e) selection of peer group companies for the public company and the market transaction approaches, (f) required levels of working capital, (g) assumed terminal value, and (h) time horizon of cash flow forecasts.

Acquired identifiable intangible assets include identifiable acquired technologies, customer relationships, trade names, distribution networks, non-competition agreements, sales backlog, and in-process research and development. We amortize the cost of finite-lived identifiable intangible assets over their estimated useful lives, which are periods of ten years or less. Amortization is based on the pattern in which the economic benefits of the intangible asset are expected to be realized, which typically is on a straight-line basis. The fair values assigned to identifiable intangible assets acquired in business combinations are determined primarily by using the income approach, which discounts expected future cash flows attributable to these assets to present value using estimates and assumptions determined by management. The acquired identifiable finite-lived intangible assets are being amortized primarily on a straight-line basis, which we believe approximates the pattern in which the assets are utilized, over their estimated useful lives.

Fair Value Measurements

Accounting guidance establishes a fair value hierarchy that requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. An instrument’s categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. This fair value hierarchy consists of three levels of inputs that may be used to measure fair value:

- Level 1: quoted prices in active markets for identical assets or liabilities;

- Level 2: inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; or

- Level 3: unobservable inputs that are supported by little or no market activity.

We review the fair value hierarchy classification of our applicable assets and liabilities at each reporting period. Changes in the observability of valuation inputs may result in transfers within the fair value measurement hierarchy. We did not identify any transfers between levels of the fair value measurement hierarchy during the years ended January 31, 2019 and 2018.

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Fair Values of Financial Instruments

Our recorded amounts of cash and cash equivalents, restricted cash and cash equivalents, and restricted bank time deposits, accounts receivable, contract assets, investments, and accounts payable approximate fair value, due to the short-term nature of these instruments. We measure certain financial assets and liabilities at fair value based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants.

Derivative Financial Instruments

As part of our risk management strategy, when considered appropriate, we use derivative financial instruments including foreign currency forward contracts and interest rate swap agreements to hedge against certain foreign currency and interest rate exposures. Our intent is to mitigate gains and losses caused by the underlying exposures with offsetting gains and losses on the derivative contracts. By policy, we do not enter into speculative positions with derivative instruments.
We record all derivatives as assets or liabilities on our consolidated balance sheets at their fair values. Gains and losses from the changes in values of these derivatives are accounted for based on the use of the derivative and whether it qualifies for hedge accounting.
The counterparties to our derivative financial instruments consist of several major international financial institutions. We regularly monitor the financial strength of these institutions. While the counterparties to these contracts expose us to credit-related losses in the event of a counterparty's non-performance, the risk would be limited to the unrealized gains on such affected contracts. We do not anticipate any such losses.

Revenue Recognition

We account for revenue in accordance with ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606), which was adopted on February 1, 2018, using the modified retrospective transition method. For further discussion of our accounting policies related to revenue see Note 2, "Revenue Recognition."

Cost of Revenue

Our cost of revenue includes costs of materials, compensation and benefit costs for operations and service personnel, subcontractor costs, royalties and license fees related to third-party software included in our products, cloud infrastructure costs, depreciation of equipment used in operations and service, amortization of capitalized software development costs and certain purchased intangible assets, and related overhead costs. Costs that relate to satisfied (or partially satisfied) performance obligations in customer contracts (i.e. costs that relate to past performance) are expensed as incurred. Please refer to Note 2, "Revenue Recognition" under the heading "Costs to Obtain and Fulfill Contracts" for further details regarding customer contract costs.

Research and Development, net

With the exception of certain software development costs, all research and development costs are expensed as incurred, and consist primarily of personnel and consulting costs, travel, depreciation of research and development equipment, and related overhead and other costs associated with research and development activities.

We receive non-refundable grants from the Israeli Innovation Authority ("IIA"), formerly the Israel Office of the Chief Scientist ("OCS"), that fund a portion of our research and development expenditures. We currently only enter into non-royalty-bearing arrangements with the IIA which do not require us to pay royalties. Funds received from the IIA are recorded as a reduction to research and development expense. Royalties, to the extent paid, are recorded as part of our cost of revenue.

We also periodically derive benefits from participation in certain government-sponsored programs in other jurisdictions, for the support of research and development activities conducted in those locations.

Software Development Costs

Costs incurred to acquire or develop software to be sold, leased or otherwise marketed are capitalized after technological feasibility is established, and continue to be capitalized through the general release of the related software product. Amortization of capitalized costs begins in the period in which the related product is available for general release to customers

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and is recorded on a straight-line basis, which approximates the pattern in which the economic benefits of the capitalized costs are expected to be realized, over the estimated economic lives of the related software products, generally four years.

Internal-Use Software

We capitalize costs associated with software that is acquired, internally developed or modified solely to meet our internal needs. Capitalization begins when the preliminary project stage has been completed and management with the relevant authority authorizes and commits to the funding of the project. These capitalized costs include external direct costs utilized in developing or obtaining the applications and expenses for employees who are directly associated with the development of the applications. Capitalization of such costs continues until the project is substantially complete and is ready for its intended purpose. Capitalized costs of computer software developed for internal use are generally amortized over estimated useful lives of four years on a straight-line basis, which best represents the pattern of the software's use.

Income Taxes

We account for income taxes under the asset and liability method which includes the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in our consolidated financial statements. Under this approach, deferred taxes are recorded for the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid. The provision for income taxes represents income taxes paid or payable for the current year plus deferred taxes. Deferred taxes result from differences between the financial statement and tax bases of our assets and liabilities, and are adjusted for changes in tax rates and tax laws when changes are enacted. The effects of future changes in income tax laws or rates are not anticipated.

We are subject to income taxes in the United States and numerous foreign jurisdictions. The calculation of our income tax provision involves the application of complex tax laws and requires significant judgment and estimates. On December 22, 2017, the Tax Cuts and Jobs Act (the "2017 Tax Act") was enacted in the United States. The 2017 Tax Act significantly revised the Internal Revenue Code of 1986, as amended, and it included fundamental changes to taxation of U.S. multinational corporations. Compliance with the 2017 Tax Act requires significant complex computations not previously required by U.S. tax law.

We evaluate the realizability of our deferred tax assets for each jurisdiction in which we operate at each reporting date, and establish valuation allowances when it is more likely than not that all or a portion of our deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income of the same character and in the same jurisdiction. We consider all available positive and negative evidence in making this assessment, including, but not limited to, the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies. In circumstances where there is sufficient negative evidence indicating that our deferred tax assets are not more-likely-than-not realizable, we establish a valuation allowance.

We use a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate tax positions taken or expected to be taken in a tax return by assessing whether they are more-likely-than-not sustainable, based solely on their technical merits, upon examination and including resolution of any related appeals or litigation process. The second step is to measure the associated tax benefit of each position as the largest amount that we believe is more-likely-than-not realizable. Differences between the amount of tax benefits taken or expected to be taken in our income tax returns and the amount of tax benefits recognized in our financial statements represent our unrecognized income tax benefits, which we either record as a liability or as a reduction of deferred tax assets. Our policy is to include interest (expense and/or income) and penalties related to unrecognized income tax benefits as a component of the provision for income taxes.

Functional Currencies and Foreign Currency Transaction Gains and Losses

The functional currency for most of our foreign subsidiaries is the applicable local currency, although we have several subsidiaries with functional currencies that differ from their local currency, of which the most notable exceptions are our subsidiaries in Israel, whose functional currencies are the U.S. dollar.

Transactions denominated in currencies other than a functional currency are converted to the functional currency on the transaction date, and any resulting assets or liabilities are further translated at each reporting date and at settlement. Gains and losses recognized upon such translations are included within other income (expense), net in the consolidated statements of operations. We recorded net foreign currency losses of $5.5 million for the year ended January 31, 2019, net foreign currency gains of $6.8 million for the year ended January 31, 2018, and net foreign currency losses of $2.7 million for the year ended January 31, 2017.

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For consolidated reporting purposes, in those instances where a foreign subsidiary has a functional currency other than the U.S. dollar, revenue and expenses are translated into U.S. dollars using average exchange rates for the reporting period, while assets and liabilities are translated into U.S. dollars using period-end rates. The effects of foreign currency translation adjustments are included in stockholders' equity as a component of accumulated other comprehensive (loss) income in the accompanying consolidated balance sheets.

Stock-Based Compensation

We recognize the cost of employee services received in exchange for awards of equity instruments based on the grant-date fair value of the award. We recognize the fair value of the award as compensation expense over the period during which an employee is required to provide service in exchange for the award.

For performance stock units for which vesting is in part dependent on total shareholder return, the fair value of the award is estimated on the date of grant using a Monte Carlo Simulation. Expected volatility and expected term are input factors for that model and may require significant management judgment. Expected volatility is estimated utilizing daily historical volatility for Verint common stock price and the constituents of the specific comparator index over a period commensurate with the remaining award performance period. The risk-free interest rate used is equal to the implied daily yield of the zero-coupon U.S. Treasury bill that corresponds with the remaining performance period of the award as of the valuation date.

Net Income (Loss) Per Common Share Attributable to Verint Systems Inc.

Shares used in the calculation of basic net income (loss) per common share are based on the weighted-average number of common shares outstanding during the accounting period. Shares used in the calculation of basic net income per common share include vested but unissued shares underlying awards of restricted stock units when all necessary conditions for earning those shares have been satisfied at the award's vesting date, but exclude unvested shares of restricted stock because they are contingent upon future service conditions.

We have the option to pay cash, issue shares of common stock, or any combination thereof for the aggregate amount due upon conversion of our 1.50% convertible senior notes due June 1, 2021 (the "Notes"), further details for which appear in Note 7, "Long-Term Debt". We currently intend to settle the principal amount of the Notes in cash upon conversion and as a result, only the amounts payable in excess of the principal amounts of the Notes, if any, are assumed to be settled with shares of common stock for purposes of computing diluted net income per share.

In periods for which we report a net loss, basic net loss per common share and diluted net loss per common share are identical since the effect of potential common shares is anti-dilutive and therefore excluded.

Recent Accounting Pronouncements

New Accounting Pronouncements Recently Adopted

In May 2014, the Financial Accounting Standards Board ("FASB") issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). ASU No. 2014-09 supersedes the revenue recognition requirements in Topic 605, Revenue Recognition, and requires entities to recognize revenue when control of the promised goods or services is transferred to customers at an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. We adopted ASU No. 2014-09 as of February 1, 2018 using the modified retrospective transition method. Please refer to Note 2, "Revenue Recognition" for further details.

In January 2016, the FASB issued ASU No. 2016 01, Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities, associated with the recognition and measurement of financial assets and liabilities, with further clarifications made in February 2018 with the issuance of ASU No. 2018-03, Technical Corrections and Improvements to Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. The amended guidance requires certain equity investments that are not consolidated and not accounted for under the equity method to be measured at fair value with changes in fair value recognized in net income rather than as a component of accumulated other comprehensive income (loss). It further states that an entity may choose to measure equity investments that do not have readily determinable fair values using a quantitative approach, or measurement alternative, which is equal to its cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. We adopted this amended guidance on February 1, 2018, using a prospective transition approach, which did not have an impact on our consolidated financial statements.

We concluded that all equity investments within the scope of ASU No. 2016-01, previously accounted for under the cost method, do not have readily determinable fair values. Accordingly, the value of these investments beginning February 1, 2018 has been measured using the measurement alternative, as noted above. As of January 31, 2019, the carrying amount of our equity investments without readily determinable fair values was $3.8 million. During the year ended January 31, 2019, we did not recognize any impairments or other adjustments.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments, which provides guidance with the intent of reducing diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The clarifications provided by this guidance did not have a material impact on our consolidated statement of cash flows.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. This update requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. We retrospectively adopted ASU No. 2016-18 on February 1, 2018 and as a result, we now include restricted cash and restricted cash equivalents with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts presented on the condensed consolidated statements of cash flows. Prior to adoption of this new guidance, we reported changes in restricted cash and restricted cash equivalents as cash flows from investing activities. We typically have restrictions on certain amounts of cash and cash equivalents, primarily consisting of amounts used to secure bank guarantees in connection with sales contract performance obligations, and expect to continue to have similar restrictions in the future.

As a result of the adoption of ASU No. 2016-18, we adjusted the previously reported consolidated statements of cash flows for the years ended January 31, 2018 and 2017 as follows:

	Year Ended January 31, 2018		
	As Previously Reported	Adjustments	As Adjusted
Net cash provided by operating activities	$176,327	$ —	$176,327
Net cash used in investing activities	(144,481)	(1,713)	(146,194)
Net cash used in financing activities	(5,503)	—	(5,503)
Foreign currency effect on cash, cash equivalents, restricted cash, and restricted cash equivalents	4,236	15	4,251
Net increase (decrease) in cash, cash equivalents, restricted cash, and restricted cash equivalents	30,579	(1,698)	28,881
Cash, cash equivalents, restricted cash, and restricted cash equivalents, beginning of period	307,363	61,966	369,329
Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of period	$337,942	$ 60,268	$398,210

	Year Ended January 31, 2017		
	As Previously Reported	Adjustments	As Adjusted
Net cash provided by operating activities	$172,415	$ —	$172,415
Net cash used in investing activities	(156,028)	39,586	(116,442)

Net cash used in financing activities	(56,919)	—	(56,919)
Foreign currency effect on cash, cash equivalents, restricted cash, and restricted cash equivalents	(4,210)	43	(4,167)
Net (decrease) increase in cash, cash equivalents, restricted cash, and restricted cash equivalents	(44,742)	39,629	(5,113)
Cash, cash equivalents, restricted cash, and restricted cash equivalents, beginning of period	352,105	22,337	374,442
Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of period	$307,363	$ 61,966	$369,329

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In January 2017, the FASB issued ASU No. 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business, which clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. If an entity determines that substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets, then the set of transferred assets and activities is not a business. If this threshold is not met, in order to be considered a business the set of transferred assets and activities must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. We prospectively adopted ASU No. 2017-01 on February 1, 2018, and the adoption had no impact on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, Intangibles-Goodwill and Other (Topic 350) - Simplifying the Test for Goodwill Impairment. ASU No. 2017-04 eliminates Step 2 of the goodwill impairment test and requires a goodwill impairment to be measured as the amount by which a reporting unit’s carrying amount exceeds its fair value, not to exceed the carrying amount of its goodwill. We elected to early adopt this standard as of February 1, 2018 and the effects of adoption were not material to our consolidated financial statements.

In August 2017, the FASB issued ASU No. 2017-12, Derivatives and Hedging (Topic 815) - Targeted Improvements to Accounting for Hedging Activities. This update better aligns risk management activities and financial reporting for hedging relationships, simplifies hedge accounting requirements, and improves disclosures of hedging arrangements. We early adopted this standard on February 1, 2018 on a prospective basis. The effects of this standard on our consolidated financial statements were not material.

New Accounting Pronouncements Not Yet Effective

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, which clarifies the accounting for implementation costs in cloud computing arrangements. This standard is effective for annual reporting periods beginning after December 15, 2019, including interim reporting periods within those annual reporting periods, with early adoption permitted. We are currently reviewing this standard to assess the impact on our consolidated financial statements.

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, which modifies the disclosure requirements on fair value measurements. This standard is effective for annual reporting periods beginning after December 15, 2019, including interim reporting periods within those annual reporting periods, with early adoption permitted. We are currently reviewing this standard to assess the impact on our consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, Compensation - Stock Compensation (Topic 718) - Improvements to Nonemployee Share-Based Payment Accounting, to simplify the accounting for nonemployee share-based payment transactions by expanding the scope of ASC Topic 718, Compensation - Stock Compensation, to include share-based payment transactions for acquiring goods and services from nonemployees. Under the new standard, most of the guidance on stock compensation payments to nonemployees would be aligned with the requirements for share-based payments granted to employees. This standard is effective for annual reporting periods beginning after December 15, 2018, including interim reporting periods within those annual reporting periods, with early adoption permitted. While we continue to assess the potential impact of this standard, we do not expect the adoption of this standard to have a material impact on our consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments—Credit Losses (Topic 326). This new standard changes the impairment model for most financial assets and certain other instruments. Entities will be required to use a model that will result in the earlier recognition of allowances for losses for trade and other receivables, held-to-maturity debt securities, loans, and other instruments. For available-for-sale debt securities with unrealized losses, the losses will be recognized as allowances rather than as reductions in the amortized cost of the securities. The new standard is effective for annual periods, and for interim periods within those annual periods, beginning after December 15, 2019, with early adoption permitted. We are currently reviewing this standard to assess the impact on our consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842), which will require lessees to recognize assets and liabilities for leases with lease terms of more than 12 months. Consistent with current GAAP, the recognition, measurement, and presentation of expenses and cash flows arising from a lease by a lessee primarily will depend on its classification as a finance or operating lease. However, unlike current GAAP, which requires only capital leases to be recognized on the balance sheet, the new guidance will require both types of leases to be recognized on the balance sheet. The ASU is effective for interim and annual periods beginning after December 15, 2018, with early adoption permitted. A modified retrospective transition approach is required, applying the new standard to all leases existing at the date of initial application. An entity may choose to use either (1) its effective date or (2) the beginning of the earliest comparative period presented in the financial statements as its date of initial application. If an entity chooses the second option, the entity must recast its comparative period financial statements and provide disclosures required by the new standard for the comparative periods. We adopted the new standard on February 1, 2019 using the effective date as our date of initial application. Consequently, financial information will not be updated and disclosures required under the new standard will not be provided for dates and periods before February 1, 2019.

The new standard provides a number of optional practical expedients in transition. We elected the transition package of practical expedients available in the standard, which permits us not to reassess under the new standard our prior conclusions about lease identification, lease classification, and initial direct costs and the practical expedient to not account for lease and non-lease components separately. We did not elect the use-of-hindsight or the practical expedient pertaining to land easements; the latter not being applicable to us.

We currently anticipate that the adoption of this new standard will materially affect our consolidated balance sheets by recognizing new right-of-use (“ROU”) assets and lease liabilities for operating leases. We expect adoption of the standard will result in the recognition of ROU assets of approximately $90.0 million to $100.0 million and lease liabilities of approximately $100.0 million to $110.0 million at February 1, 2019, with the most significant impact from recognition of ROU assets and lease liabilities related to our office space operating leases. The impact on our results of operations and cash flows is not expected to be material. We are implementing a new lease accounting system and updating our processes and controls in preparation for the adoption of the new standard, including the requirement to provide significant new disclosures about our leasing activities. Please refer to Note 15, “Commitments and Contingencies” for additional information about our leases, including the future minimum lease payments for our operating leases at January 31, 2019.

2. REVENUE RECOGNITION

On February 1, 2018, we adopted ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606), using the modified retrospective method applied to those contracts that were not completed as of February 1, 2018. Results for reporting periods beginning after February 1, 2018 are presented under ASU No. 2014-09, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting under prior guidance. For contracts that were modified before the effective date of ASU No. 2014-09, we recorded the aggregate effect of all modifications when identifying performance obligations and allocating the transaction price in accordance with the practical expedient provided for under the new guidance, which permits an entity to record the aggregate effect of all contract modifications that occur before the beginning of the earliest period presented in accordance with the new standard when identifying the satisfied and unsatisfied performance obligations, determining the transaction price, and allocating the transaction price to the satisfied and unsatisfied performance obligations.

Under the new standard, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for contracts that are within the scope of new standard, we perform the following five steps:

1) Identify the contract(s) with a customer
A contract with a customer exists when (i) we enter into an enforceable contract with the customer that defines each party’s rights regarding the goods or services to be transferred and identifies the payment terms related to these goods or services, (ii) the contract has commercial substance, and (iii) we determine that collection of substantially all

consideration for goods or services that are transferred is probable based on the customer’s intent and ability to pay the promised consideration. We apply judgment in determining the customer’s ability and intention to pay, which is based on a variety of factors including the customer’s historical payment experience or in the case of a new customer, published credit and financial information pertaining to the customer. Our customary business practice is to enter into legally enforceable written contracts with our customers. The majority of our contracts are governed by a master agreement between us and the customer, which sets forth the general terms and conditions of any individual contract between the parties, which is then supplemented by a customer purchase order to specify the different goods and services, the associated prices, and any additional terms for an individual contract. Multiple contracts with a single counterparty entered into at the same time are evaluated to determine if the contracts should be combined and accounted for as a single contract.

2) Identify the performance obligations in the contract

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Performance obligations promised in a contract are identified based on the goods or services that will be transferred to the customer that are both capable of being distinct, whereby the customer can benefit from the goods or services either on its own or together with other resources that are readily available from third parties or from us, and are distinct in the context of the contract, whereby the transfer of the goods or services is separately identifiable from other promises in the contract. To the extent a contract includes multiple promised goods or services, we must apply judgment to determine whether promised goods or services are capable of being distinct and are distinct in the context of the contract. If these criteria are not met the promised goods or services are accounted for as a combined performance obligation. Generally, our contracts do not include non-distinct performance obligations, but certain Cyber Intelligence customers require design, development, or significant customization of our products to meet their specific requirements, in which case the products and services are combined into one distinct performance obligation.

3) Determine the transaction price
The transaction price is determined based on the consideration to which we will be entitled in exchange for transferring goods or services to the customer. We assess the timing of transfer of goods and services to the customer as compared to the timing of payments to determine whether a significant financing component exists. As a practical expedient, we do not assess the existence of a significant financing component when the difference between payment and transfer of deliverables is a year or less, which is the case in the majority of our customer contracts. The primary purpose of our invoicing terms is not to receive or provide financing from or to customers. Our Cyber Intelligence contracts may require an advance payment to encourage customer commitment to the project and protect us from early termination of the contract. To the extent the transaction price includes variable consideration, we estimate the amount of variable consideration that should be included in the transaction price utilizing either the expected value method or the most likely amount method depending on the nature of the variable consideration. Variable consideration is included in the transaction price, if we assessed that a significant future reversal of cumulative revenue under the contract will not occur. Typically, our contracts do not provide our customers with any right of return or refund, and we do not constrain the contract price as it is probable that there will not be a significant revenue reversal due to a return or refund.

4) Allocate the transaction price to the performance obligations in the contract
If the contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. However, if a series of distinct goods or services that are substantially the same qualifies as a single performance obligation in a contract with variable consideration, we must determine if the variable consideration is attributable to the entire contract or to a specific part of the contract. We allocate the variable amount to one or more distinct performance obligations but not all or to one or more distinct services that forms a part of a single performance obligation, when the payment terms of the variable amount relate solely to our efforts to satisfy that distinct performance obligation and it results in an allocation that is consistent with the overall allocation objective of ASU No. 2014-09. Contracts that contain multiple performance obligations require an allocation of the transaction price to each performance obligation based on a relative standalone selling price basis unless the transaction price is variable and meets the criteria to be allocated entirely to a performance obligation or to a distinct good or service that forms part of a single performance obligation. We determine standalone selling price (“SSP”) based on the price at which the performance obligation is sold separately. If the SSP is not observable through past transactions, we estimate the SSP taking into account available information such as market conditions, including geographic or regional specific factors, competitive positioning, internal costs, profit objectives, and internally approved pricing guidelines related to the performance obligation.

5) Recognize revenue when (or as) the entity satisfies a performance obligation
We satisfy performance obligations either over time or at a point in time depending on the nature of the underlying promise. Revenue is recognized at the time the related performance obligation is satisfied by transferring a promised good or service to a customer. In the case of contracts that include customer acceptance criteria, revenue is not recognized until we can objectively conclude that the product or service meets the agreed-upon specifications in the

contract.

We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to our customers. Revenue is measured based on consideration specified in a contract with a customer, and excludes taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, that are collected by us from a customer.

Shipping and handling activities that are billed to the customer and occur after control over a product has transferred to a customer are accounted for as fulfillment costs and are included in cost of revenue. Historically, these expenses have not been material.

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Nature of Goods and Services

We derive and report our revenue in two categories: (a) product revenue, including licensing of software products, and the sale of hardware products, and (b) service and support revenue, including revenue from installation services, post-contract customer support ("PCS"), project management, hosting services, cloud deployments, SaaS, managed services, product warranties, business advisory consulting, and training services.

Our software licenses typically provide for a perpetual right to use our software, though we also sell term-based software licenses that provide our customers with the right to use our software for only a fixed term, in most cases between a one- and three-year time frame. Generally, our contracts do not provide significant services of integration and customization and installation services are not required to be purchased directly from us. The software is delivered before related services are provided and is functional without professional services, updates and technical support. We have concluded that the software license is distinct as the customer can benefit from the software on its own. Software revenue is typically recognized when the software is delivered or made available for download to the customer. We rarely sell our software licenses on a standalone basis and as a result SSP is not directly observable and must be estimated. We apply the adjusted market assessment approach, considering both market conditions and entity specific factors such as assessment of historical data of bundled sales of software licenses with other promised goods and services in order to maximize the use of observable inputs. Software SSP is established based on an appropriate discount from our established list price, taking into consideration whether there are certain stratifications of the population with different pricing practices. Revenue for hardware is recognized at a point in time, generally upon shipment or delivery.

Contracts that require us to significantly customize our software are generally recognized over time as we perform because our performance does not create an asset with an alternative use and we have an enforceable right to payment plus a reasonable profit for performance completed to date. Revenue is recognized over time based on the extent of progress towards completion of the performance obligation. We use labor hours incurred to measure progress for these contracts because it best depicts the transfer of the asset to the customer. Under the labor hours incurred measure of progress, the extent of progress towards completion is measured based on the ratio of labor hours incurred to date to the total estimated labor hours at completion of the distinct performance obligation. Due to the nature of the work performed in these arrangements, the estimation of total labor hours at completion is complex, subject to many variables and requires significant judgment. If circumstances arise that change the original estimates of revenues, costs, or extent of progress toward completion, revisions to the estimates are made. These revisions may result in increases or decreases in estimated revenues or costs, and such revisions are reflected in revenue on a cumulative catch-up basis in the period in which the circumstances that gave rise to the revision become known. We use the expected cost plus a margin approach to estimate the SSP of our significantly customized solutions.

Professional services revenues primarily consist of fees for deployment and optimization services, as well as training, and are generally recognized over time as the customer simultaneously receives and consumes the benefits of the professional services as the services are performed. Professional services that are billed on a time and materials basis are recognized over time as the services are performed. For contracts billed on a fixed price basis, revenue is recognized over time using an input method based on labor hours expended to date relative to the total labor hours expected to be required to satisfy the related performance obligation. We determine SSP for our professional services based on the price at which the performance obligation is sold separately, which is observable through past transactions.

Our SaaS contracts are typically comprised of a right to access our software, maintenance, and hosting fees. We do not provide the customer the contractual right to take possession of the software at any time during the hosting period under these contracts. The customer can only benefit from the SaaS license and the maintenance when combined with the hosting service as the hosting service is the only way for the customer to access the software and benefit from the maintenance services. Accordingly, each of the license, maintenance, and hosting services is not considered a distinct performance obligation in the context of the contract, and are combined into a single performance obligation ("SaaS services") and recognized ratably over the contract period. Our SaaS customer contracts can consist of fixed, variable, and usage based fees. Typically, we invoice a portion of the fees at the outset of the contract and then monthly or quarterly thereafter. Certain SaaS contracts include a nonrefundable upfront fee for setup services, which are not distinct from the SaaS services. Non-distinct setup services represent an advanced payment for future SaaS services, and are recognized as revenue when those SaaS services are satisfied, unless the nonrefundable fee is considered to be a material right, in which case the nonrefundable fee is recognized over the expected benefit period, which includes anticipated SaaS renewals. We determine SSP for our SaaS services based on the price at which the performance obligation is sold separately, which is observable through past SaaS renewal transactions. We satisfy our SaaS services by providing access to our software over time and processing transactions for usage based contracts. For non-usage based fees, the period of time over which we perform is commensurate with the contract term because that is the period during

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which we have an obligation to provide the service. The performance obligation is recognized on a time elapsed basis, by month for which the services are provided.

Customer support revenue is derived from providing telephone technical support services, bug fixes and unspecified software updates and upgrades to customers on a when-and-if-available basis. Each of these performance obligations provide benefit to the customer on a standalone basis and are distinct in the context of the contract. Each of these distinct performance obligations represent a stand ready obligation to provide service to a customer, which is concurrently delivered and has the same pattern of transfer to the customer, which is why we account for these support services as a single performance obligation. We recognize support services ratably over the contractual term, which typically is one year, and develop SSP for support services based on standalone renewal contracts.

Our Customer Engagement solutions are generally sold with a warranty of one year for hardware and 90 days for software. Our Cyber Intelligence solutions are generally sold with warranties that typically range from 90 days to three years and, in some cases, longer. These warranties do not represent an additional performance obligation as services beyond assuring that the software license and hardware complies with agreed-upon specifications are not provided.

Disaggregation of Revenue

The following table provides information about disaggregated revenue for our Customer Engagement and Cyber Intelligence segments by product revenue and service and support revenue, as well as by the recurring or nonrecurring nature of revenue for each business segment. Recurring revenue is the portion of our revenue that we believe is likely to be renewed in the future, and primarily consists of initial and renewal PCS, SaaS, term-based licenses, managed services, sales-and-usage based royalties, and subscription licenses recognized over time. The recurrence of these revenue streams in future periods depends on a number of factors including contractual periods and customers' renewal decisions. Nonrecurring revenue primarily consists of our perpetual licenses, long-term customization projects that are recognized over time as control transfers to the customer using a percentage of completion ("POC") method, consulting, implementation and installation services, training, and hardware.

	Year Ended January 31, 2019		
(in thousands)	Customer Engagement	Cyber Intelligence	Total
Revenue:			
Product	$221,721	$ 232,929	$454,650
Service and support	574,566	200,531	775,097
Total revenue	$796,287	$ 433,460	$1,229,747
Revenue by recurrence:			
Recurring revenue	$465,671	$ 165,265	$630,936
Nonrecurring revenue	330,616	268,195	598,811
Total revenue	$796,287	$ 433,460	$1,229,747

The following table provides a further disaggregation of revenue for our Customer Engagement segment. Cloud revenue primarily consists of SaaS and managed services revenue recognized over time and term-based licenses, which are recognized at a point in time.

(in thousands)	Year Ended January 31,