

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

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number: 0-22823

QAD Inc.

(Exact name of Registrant as specified in its charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

77-0105228

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

100 Innovation Place

Santa Barbara, California 93108

(Address of principal executive offices and zip code)

Registrant's telephone number, including area code **(805) 566-6000**

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

Title of Each Security
Class A Common Stock, \$.001 par value
Class B Common Stock, \$.001 par value

Name of Each Exchange on Which Registered
The NASDAQ Stock Market LLC
(NASDAQ Global Select Market)

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

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☐ YES ☒ NO

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. ☐ YES ☒ NO

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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 an amendment to this Form 10-K. ☒

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

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

As of July 31, 2018, the last business day of the Registrant’s most recently completed second fiscal quarter, there were 16,350,124 shares of the Registrant’s Class A common stock outstanding and 3,263,906 shares of the Registrant’s Class B common stock outstanding, and the aggregate market value of such shares held by non-affiliates of the Registrant (based on the closing sale price of such shares on the NASDAQ Global Market on July 31, 2018) was approximately \$490 million. Shares of the Registrant’s common stock held by each executive officer and director and by each entity that owns 5% or more of the Registrant’s outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 31, 2019, there were 16,368,719 shares of the Registrant’s Class A common stock outstanding and 3,263,906 shares of the Registrant’s Class B common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Items 10 through 14 of Part III incorporate information by reference from the Definitive Proxy Statement for the Registrant’s Annual Meeting of Stockholders to be held on June 24, 2019.

QAD INC.
FISCAL YEAR 2019 FORM 10-K ANNUAL REPORT
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NOTE REGARDING FORWARD-LOOKING STATEMENTS

In addition to historical information, this Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. Any statements contained herein that are not statements of historical fact should be construed as forward-looking statements, including statements that are preceded or accompanied by such words as “may,” “believe,” “could,” “anticipate,” “projects,” “estimates,” “will likely result,” “should,” “would,” “might,” “plan,” “expect,” “intend” and words of similar meaning or the negative of these terms or other comparable terminology. Forward-looking statements are based on the Company’s current expectations and assumptions regarding its business, the economy and future conditions. A number of risks and uncertainties could cause actual results to differ materially from those expressed or implied in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in Item 1A entitled “Risk Factors” which are incorporated herein by reference, and as may be updated in filings we make from time to time with the Securities and Exchange Commission. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect management’s opinions, expectations and projections only as of the date of this Annual Report on Form 10-K and are subject to risks, uncertainties and assumptions about our business. We undertake no obligation to revise or update or publicly release the results of any revision or update to these forward-looking statements except as required by applicable securities laws. Readers should carefully review the risk factors and other information described in this Annual Report on Form 10-K and the other documents we file from time to time with the Securities and Exchange Commission, including the Quarterly Reports on Form 10-Q to be filed by QAD in fiscal year 2020.

PART I

ITEM 1. BUSINESS

QAD is a leader in cloud-based enterprise software solutions for global manufacturing companies across the automotive, life sciences, consumer products, food and beverage, high technology and industrial products industries. We offer full-featured, secure and flexible enterprise and supply chain solutions built for global manufacturing companies which can be delivered in the cloud, on-premises or via a blended deployment combination of cloud and on-premises. Our mission is to provide best-in-class software that enables our customers to operate as an effective enterprise where their business processes are running at peak efficiency and are perfectly aligned to their strategic goals. Our solutions, called QAD Enterprise Applications, enable measurement and control of key business processes that support operational requirements, including financials, manufacturing, demand and supply chain planning, customer management, business intelligence and business process management. Our architecture, called the QAD Enterprise Platform, provides manufacturers with the flexibility they need to achieve a greater fit between their optimal business processes and systems, which enables them to adjust to change in the markets they serve.

Over 2,000 manufacturing companies have deployed QAD solutions to run their businesses across approximately 4,000 sites globally. Today, our solutions are used by over 300,000 active users, of which our cloud and subscription users have grown to 43,000 from 33,000 in the prior year. We were founded in 1979 and our principal executive offices are located in Santa Barbara, California. Our principal website address is www.qad.com. Our office address is 100 Innovation Place, Santa Barbara, CA 93108. We employ 1,970 full-time employees throughout our direct operations in 24 countries across the North America, Europe, Middle East and Africa (“EMEA”), Asia Pacific and Latin America regions.

OUR TARGET VERTICAL MARKETS

We focus our efforts on delivering mission-critical software solutions to enterprise customers in six core vertical markets within global manufacturing – automotive, life sciences, consumer products, food and beverage, high technology and industrial products. Within these vertical markets, we focus on 26 segments where many of our existing customers operate and our solutions are a strong product fit. We offer solutions designed to overcome the business challenges within each segment, based on our in-depth knowledge of the segment and best practices. In addition, we participate in industry groups serving our target segments to ensure that we address regulatory compliance issues, evaluate new manufacturing practices and leverage advanced technologies to give our customers a maximum competitive advantage.

Automotive: Automotive suppliers are a key focus for QAD. Automotive suppliers must meet critical industry standards such as the Materials Management Operations Guideline/Logistics Evaluation (“MMOG/LE”) and International Automotive Task Force (“IATF”) 16949:2016 (previously ISO/TS 16949). Disruptions to the supply chain can cause significant financial impact. QAD’s automotive-specific processes and built-in industry best practices help automotive suppliers reduce costs, mitigate supply chain risk and improve supply chain planning and visibility. Our customer base includes companies serving the global automotive marketplace, especially the tier-1 suppliers in the supply chains of automotive original equipment manufacturers. We deliver unique capabilities to support the collaboration requirements of the automotive suppliers, including the strict quality requirements of Advanced Product Quality Process (“APQP”) and Production Part Approval Process (“PPAP”). Many of our customers use QAD Cloud EDI because it provides a scalable solution which standardizes Electronic Data Interchange (“EDI”) across their global enterprise. QAD Supplier Portal, which allows for electronic communication with other suppliers, is another product commonly used by our automotive customers. QAD solutions are in use at many of the market-leading automotive parts companies throughout the world that manufacture a broad range of components used in interiors, electrical components, safety systems, bodies and drivetrains.

Life Sciences: Life sciences manufacturers are dedicated to innovation, product quality and patient safety; however, a tightening regulatory environment, increasing cost pressures and greater supply chain complexities present challenges to the industry. Emerging markets, quality initiatives, and mergers and acquisitions activity also add to the complexity of life sciences manufacturing and distribution. QAD focuses on the following five segments in the life sciences industry: contract manufacturing; surgical devices; orthopedic devices; diagnostic devices; and pharmaceutical/biotechnology manufacturers. QAD solutions help global life sciences companies manufacture products in accordance with current Good Manufacturing Practices (“cGMP”) regulations and standards like ISO13485:2016 that are required by regulators around the world. In addition to cGMP, QAD solutions support many business and regulatory processes specific to the life sciences industry, such as automated quality management, supply chain planning and serialization in support of requirements for Unique Device Identification (“UDI”), the Drug Quality and Security Act (“DQSA”) and the Falsified Medicines Directive (“FMD”). QAD Cloud ERP for life sciences provides our customers with a qualified IT infrastructure as a key building block to help them ensure that they have a solid foundation for addressing life sciences regulatory requirements.

Consumer Products: Manufacturers of consumer products have the objective of delivering the right product, in the right quantities, to the right location at the right time to satisfy demand. To meet this goal, effective supply chain management is needed to synchronize critical activities and functions across the organization. To gain market share and improve profitability, consumer products companies must anticipate and meet customer demand while managing their margins and complying with evolving safety and environmental regulations. QAD focuses on the following four segments in the consumer products industry: household and personal packaged products; consumer electronics; assembled and discrete products; and jewelry manufacturing. The manufacturing processes for these items vary and depend on the nature of the item; however, the fulfillment and distribution requirements have significant commonality. Major retailers manage complex supply chains and are typically very demanding of their suppliers as they strive to service growing demand from consumers for speed of delivery and variety of products. QAD solutions address the complex replenishment requirements of companies supplying the retail supply chain, including promotional pricing, demand planning, quality compliance and product configuration.

Food and Beverage: Food and beverage manufacturing is complex and requires regular updates to product, packaging and pricing. There is a lack of uniformity in the supply chain, which challenges food and beverage manufacturers to excel at supply chain management, as seasonal demand changes cause inefficiencies and increase manufacturing costs. At the same time, manufacturers must comply with requirements like field to fork traceability and record keeping. QAD focuses on the following six segments in the food and beverage industry: shelf-stable bottling, canning and packaging; distilleries, wineries and brewing; frozen foods; creameries and fresh foods; candy and confections; and meat and fish processing. Our solutions support regulatory and quality initiatives, such as the U.S. Food Safety Modernization Act (“FSMA”) and Hazard Analysis and Critical Control Point (“HACCP”) analysis, which address the management of biological, chemical and physical hazards. Our solutions support the product cycle of the food and beverage industry from raw material production, procurement and handling to manufacturing, distribution and consumption of the finished product.

High Technology: The success of manufacturers in the high technology industry relies on innovation and the ability to manage change. These manufacturers are subject to constant pressure on margins, challenges with cross border shipments, strains on material availability and cost control initiatives. They require agile and effective global supply chains. All of these challenges need to be met while complying with standards and industry regulations. QAD solutions are used by many high-technology companies that manufacture a diverse range of products. QAD focuses on the following four segments in the high technology industry: standalone devices and test equipment; batteries, power supplies and lighting; cable, wiring and connectors; and industrial and high technology contract manufacturing. High-tech companies often face the challenges of very complex product structures with a need for traceability of parts and processes throughout their entire supply chain, as well as tight control of engineering changes. Many high-tech companies providing complex systems also face the challenge of managing installation and support of equipment after sale, in addition to managing field engineering resources. A high-technology manufacturer can use QAD’s solutions to configure product based on customers’ preference; manufacture and assemble product according to a customized specification; and schedule, install and support equipment throughout its lifecycle.

Industrial Products: Today's global customers are demanding more configure-to-order, make-to-order, and assemble-to-order products. As a result, the modern, agile industrial manufacturer must be responsive to demands while managing tight margins, operational challenges and rapid changes to product features. QAD customers manufacture products as diverse as machine tools; specialist ceramic materials used in aerospace and defense; and equipment used in the oil and gas industries. Fluctuating demand leads to significant challenges in managing the internal supply chain, coordinating the extended vendor ecosystem, controlling costs, ensuring quality, tracking production, and optimizing inventory levels. Companies in this broad vertical market have requirements to maintain many manufacturing methodologies, often within the same enterprise. QAD focuses on the following six segments in the industrial products industry: flexible packaging; engineered materials; contract manufacturing; standalone equipment; remanufacturing; and roll stock and wire cable. Our solutions support multiple manufacturing methodologies in parallel, including lean manufacturing. The need for traceability of materials from source through to the finished product is often important to our customers, and QAD's capabilities in traceability and serialization support this feature.

Our focus on these six vertical markets gives us a competitive advantage by providing a solution developed specifically for our target customers, without the complexity and distraction of functionality they don't want and don't need. While some vendors provide broader solutions built for many industries, our targeted vertical focus allows our customers to implement our solutions with fewer configurations and customizations than our competitors require, enabling less complex and faster implementations. We leverage our vertical market expertise in research and development to meet specific industry needs: in sales, to understand our customer's unique requirements; in presales, to demonstrate how these requirements are handled in the software; and in services, to apply best practices in the optimization of business processes and the implementation of the software. Our options to sell our product in the cloud or as on-premises licenses enable customers operating in multiple locations to choose a deployment option that best meets their unique needs.

QAD SOLUTIONS

QAD products and services support the business processes of global manufacturing companies in our target industries. We continually monitor emerging business requirements and practices as well as regulatory changes and incorporate them into our product and solutions strategies. Our development focus emphasizes user experience. We strive to deliver solutions that offer comprehensive capabilities while being easy to access, learn and use.

The Channel Islands program was designed to transform the architecture and user experience of QAD solutions. Channel Islands has two key components: Channel Islands User Experience ("UX") and the QAD Enterprise Platform.

The Channel Islands User Experience ("UX") provides access to QAD Enterprise Applications on any device with a modern web browser. It includes a new user interface ("UI") written in HTML5 which seamless access across desktops and mobile devices and has the ability to co-exist with our current .NET UI. Mobile devices continue to play an ever-increasing role in our day-to-day lives, and our customers are using mobile computing to support their businesses. Channel Islands leverages a responsive HTML5 user interface that displays appropriately across screen sizes. As such, Channel Islands is available on any device with a modern web browser, including tablets and smartphones. In addition, QAD provides some mobile specific applications purpose-built for the actions users are likely to take on their mobile devices. These include a requisition approval solution, a mobile business intelligence solution, mobile browse capability and mobile application monitoring tools to support system administrators.

The QAD Enterprise Platform is the architecture behind the Channel Islands project. The benefits it provides to customers make it the most significant part of the solution. Manufacturers need an Enterprise Resource Planning ("ERP") system that will allow them to easily change their business processes to meet the demands of their changing market. The QAD Enterprise Platform provides five rapid response capabilities: Personalization; Embedded Analytics; Modularization; Extensibility; and New Apps. Most critically, these capabilities include the ability to extend current applications, to connect with external systems through micro services, and to develop entirely new applications on the QAD Enterprise Platform without the need to write or modify code in QAD Enterprise Applications. Extensions and new apps are non-intrusive to the enterprise applications and do not hinder future upgrades. Modularity provides the ability to upgrade the solution by components, rather than upgrading the entire solution at one time. This makes upgrades smaller, faster and easier; helping customers stay on the most current version of our software which reduces the gap between their business needs and what our enterprise applications provide. Modularity also allows us to improve the efficiency of our cloud operations using a simplified upgrade process. The architecture eases the adoption of new advanced technologies into the solution.

In support of our focus on business process efficiency, we have integrated the ability to generate business process maps for common business processes into our software using the QAD Process Editor tool. This tool simplifies implementations, maps common business processes and facilitates navigation throughout the entire product suite. Within our suite, we have embedded business process management (“QAD BPM”). QAD BPM allows customers to visualize their business processes; monitor transactional throughput by user, role or stage; and modify those processes to make them more efficient. Using QAD BPM, companies can create business process models, assign task responsibilities, and monitor and re-direct workflow; all of which reduce process execution time, improve visibility of active processes, identify bottlenecks and support process improvement. QAD developed its solutions to allow simple integration with other systems our customers use within their organizations. For example, we enable seamless integration between QAD Enterprise Applications, common browser applications and spreadsheets. QAD solutions also integrate easily with other web applications and web services. Using our Q-Xtend toolset, customers can connect to different software, even when remote, and they can use industry-standard middleware products such as the IBM MQ™ series or standard connectors built on the Dell Boomi AtomSphere integration platform. Robust Application Program Interfaces (“APIs”) along with QAD Automation Solutions provide additional capabilities for integration.

QAD Cloud ERP and QAD Enterprise Applications

QAD Cloud ERP (delivered in the cloud) and QAD Enterprise Applications (delivered on-premises) are an integrated suite of software applications, which supports the core business processes of global manufacturing companies and provides specific functionality to support the requirements of our targeted industries and the geographies in which our customers conduct business. Both QAD Cloud ERP and QAD Enterprise Applications utilize the same underlying technology and therefore provide customers with the same functionality. QAD Cloud ERP and QAD Enterprise Applications allow customers to monitor, control and support their operations, whether operating a single plant or multiple sites located around the world.

QAD Cloud ERP provides customers with additional value and better experience than an on premises implementation. QAD Cloud ERP allows customers to rapidly deploy, scale and extend their solutions in a highly-available, highly-secure environment. QAD's Cloud Operations group manages the end-to-end process of the deployment of the enterprise system, including the provisioning of the customer's environments, performing continuous system performance tuning and monitoring to avoid disruptions, ensuring backup and disaster recovery processes are in place, applying software upgrades and patches, and ensuring industry best practice security processes are deployed. Customer's internal organizations can then focus on strategic initiatives while relying on QAD to provide their users with highly-secured and highly-reliable systems that support their ability to navigate through complexity and increasing disruption in their markets.

QAD Cloud ERP and QAD Enterprise Applications are available in a blended model combining both deployment alternatives. Blended deployment enables users to transact more easily across business entities with a consistent interface and consistent functionality since our cloud and on-premises technology is the same. Companies that have chosen the cloud as a strategic direction but who cannot, or do not want to, move all locations at one time, find the blended deployment model allows them to transition to the cloud with less risk. The finance function can view individual business unit results and run consolidations that cross both cloud and on-premises sites seamlessly, while other users can transact and view inventory in multiple locations irrespective of whether any specific business entity is operating in the cloud or on-premises.

QAD Cloud ERP and QAD Enterprise Applications are comprised of the following software solutions:

QAD Financials

QAD Financials provides comprehensive capabilities to manage and control finance and accounting processes at a local, regional and global level. The suite supports multi-company, multi-currency, multi-language and multi-tax jurisdictions, as well as consolidated reporting and budgeting controls. These capabilities give cross-functional stakeholders access to financial results; enabling faster, more informed decision making while providing robust internal controls. Enterprise Financials includes multi-GAAP support, such as International Financial Reporting Standards (“IFRS”), as well as extensive local tax, reporting and segregation of duties controls.

QAD Customer Management

QAD Customer Management enables global manufacturing companies to acquire new customers efficiently, grow revenue through multiple channels and retain customers through superior service and support. QAD Customer Management helps our customers measure marketing campaign effectiveness, manage the sales opportunity lifecycle and optimize order and fulfillment processes. QAD Configurator has the ability to create unique products specified to customer requirements, enabling simple and cost effective controls for mass customization of products. The suite includes the ability to centralize sales order entry, including orders for configured items, and to ship the items from any facility or business entity. QAD Customer Self Service provides a web storefront for our customers to transact sales, which is fully and securely integrated with the rest of QAD Enterprise Applications.

QAD Manufacturing

QAD Manufacturing delivers comprehensive capabilities to support manufacturing business processes, from planning through execution, and provides visibility and control of materials and labor. The suite has capabilities in the areas of planning and scheduling, cost management, material control, shop floor control, quality management and reporting in various mixed-mode manufacturing environments. The manufacturing models supported include Discrete, Repetitive, Kanban (particularly relevant in lean manufacturing practices), Flow, Batch/Formula, Process, Co-products/By-products and Configured Products. The system also includes flexible item attributes that customers can use to track lot characteristics or test results. The Lot Trace Workbench provides insight into any products component genealogy and greatly simplifies product recalls. QAD Manufacturing supports companies' deployment of business processes consistent with their industry's best practices. The integration between scheduling, planning, execution, quality and materials allows tight control and simple management of processes.

QAD Automation Solutions

QAD Automation Solutions improves manufacturers' material transaction processing accuracy and efficiency by aligning QAD Enterprise Applications with material and production processes. There are two primary components to QAD Automation Solutions:

- Data Collection captures material and production data through simplified transactions using mobile devices such as a radio frequency ("RF") scanner, tablet or shop floor computer or other machine.
- Label Printing Services routs and prints labels associated with material and production transactions based on manufacturer, supplier, customer and industry specified formats and rules.

These capabilities help manufacturers better align their material logistics processes in a timely fashion while ensuring inventory accuracy through process compliance.

QAD Demand and Supply Chain Planning

QAD Demand and Supply Chain Planning ("QAD DSCP") is a comprehensive group of applications built on a single unified model to fulfill the materials planning and logistics requirements of global companies. QAD DSCP is supported and developed by our DynaSys operating division. This solution set delivers functionality and capabilities that help enterprises optimize their supply chains to enhance customer satisfaction through timely deliveries. Enterprises can align supply and demand to support the delivery of the right product, to the right place, at the right time and at the most efficient cost. The suite utilizes the DynaSys Single Click Collaborative platform, with the entire planning model running in a memory-resident database supporting real-time planning. The suite supports planning for demand, production, procurement, distribution and global sales and operations. Customers have used this solution with data sets that exceed a million SKUs. QAD Demand and Supply Chain Planning addresses both simple and complex networks, giving customers the ability to add more advanced functionality as their enterprise grows. Collaborative portals are available for both demand and supply sides to help ensure rapid communication of demand or supply fluctuations and to enable collaborative planning.

QAD Supply Chain Execution

QAD's Supply Chain Execution capabilities provide the tools required to make requisitions, and procure and purchase materials and parts needed for manufacturing. Purchasing readily integrates with inventory and warehouse management capabilities. Additionally, Supply Chain Execution manages consignment inventory for consignors and consignees, and distribution requirements planning to optimize and balance inventories at multiple distribution centers, enabling fast and cost-effective demand fulfillment. QAD also offers QAD Supplier Portal, a cloud-based, subscription supply chain insight and performance management solution that provides digital collaboration between suppliers and buyers to help optimize supply chains operations.

QAD Transportation Management

QAD markets transportation solutions directly to our existing customers as part of QAD Enterprise Applications, and to the general market through our Precision division. QAD Transportation Management facilitates correct documentation and control for moving shipments across borders. Transportation Management allows companies to manage and optimize outside carriers for shipments including parcel, less than truckload, full truckload and container shipments whether using land, sea or air carriers. Compliance and risk management enables companies to comply with regulations concerning denied parties and control of dangerous substances.

QAD Service and Support

QAD Service and Support enables exceptional after-sale customer service and support for companies who commission and support complex systems. The integration from customer demand through manufacturing to installation and support provides companies with great efficiencies when managing their business processes. QAD Service and Support handles service calls, manages service queues and organizes mobile field resources. It also provides extensive project management support, helping organizations track materials and labor against warranty and service work; compares actual costs to budget; and generates appropriate invoicing.

QAD Enterprise Asset Management

QAD Enterprise Asset Management (“EAM”) helps companies manage maintenance and installation of capital equipment. The solution supports both planned and unplanned equipment maintenance based on elapsed time or completed quantities. It includes the ability to track calibrations, labor and required parts used for maintenance. In addition, it has project accounting capabilities to plan, track and control detailed project budget and spending data for capital expense projects such as refits or building and commissioning new plants. EAM includes functionality to manage rotatable (renewable) inventory. EAM helps manufacturers achieve a balance between having the right equipment available and minimizing their equipment investment. It ensures critical spare parts are on hand as needed and monitors company expense and approval policies with regard to capital plant and equipment.

Action Centers with Embedded Analytics

Action Centers are designed to provide data and information users need in order to work efficiently in a straightforward visual format. Users can drill down into more detail or take quick action based on the insight the solution provides. Action Centers provide built-in analytics and operational metrics as well as more than 400 browses and nearly 450 reports. All information can be accessed from a mobile device to support users who are not at their desk or in the office.

QAD Analytics

QAD Enterprise Applications provides decision makers and company stakeholders with key data to measure performance against company and strategic goals. QAD Analytics helps customers perform complex analyses, make informed decisions and improve performance management by highlighting areas that need improvement and enabling drill down to source data. The QAD Analytics suite consists of multiple analysis and data extraction tools all working in harmony to provide user-defined analysis such as consolidated reporting or reporting by geography, product line or cost center.

The solution consists of QAD Reporting Framework, which provides powerful, yet simple, reporting and real-time visibility with ad hoc inquiries; Operational Metrics, which enables companies to define and monitor key performance indicators; and QAD Business Intelligence, which allows for dynamic analysis and trend reporting across multiple data sources. Customers can also access QAD Business Intelligence using mobile devices, which allows users to view, filter and sort all data accessible to QAD Browses using mobile devices.

QAD Enterprise Quality Management System

QAD provides enterprise quality management and regulatory compliance solutions to global companies in many market segments, including QAD’s target markets. The suite supports customers’ compliance with industry-specific quality standards. In the automotive vertical, QAD’s solution delivers automation of Advanced Product Quality Planning (“APQP”) methodologies, including Production Part Approval Process (“PPAP”), process flow and approvals. In the life sciences vertical, customers benefit from critical functionality supporting corrective and preventative action and non-conformance reporting. The suite also features manufacturing quality solutions for audit, risk management, document control, gage calibration, inspection and statistical process control. Our CEBOS division supports and develops QAD’s Enterprise Quality Management suite.

QAD Interoperability

QAD Cloud ERP and QAD Enterprise Applications use a service-oriented architecture, allowing customers to easily integrate with non-QAD business applications. Through the Q-Xtend integration toolset, QAD supports application interoperability using open standards, comprehensive APIs and event management. QAD Boomi AtomSphere, based on Dell Boomi, provides an integration platform for cloud and on-premises application, data and process integration. QAD Cloud EDI provides “as a service” EDI translation and communication services, ensuring manufacturers have a scalable solution that can be implemented rapidly and that standardizes EDI across the enterprise. QAD EDI eCommerce offers a complete on-premises EDI solution that simplifies electronic data interchange with trading partners across the value chain. Cloud-based QAD eInvoicing supports the exchange of digital invoices between supplier and customer, providing for paperless invoicing in 54 countries and helping manufacturing meet growing digital tax compliance requirements.

QAD Internationalization

QAD supports companies that manufacture and distribute their products around the world. When a global company expands its operations, it often needs to accommodate local languages, local accounting standards and local business practices. Operating in different countries also requires access to specific local software, such as that used to interface to banks in their country of operation. QAD supports the requirements of 60 different countries with its internationalization capabilities.

QAD Divisions

Over time QAD has acquired certain companies to enhance our product capabilities. We have chosen to keep some of our acquired companies operating as divisions because they may market their software outside of the industries our core QAD customers are in. Although the products marketed by these divisions have all been incorporated into QAD Enterprise Applications, these divisions also maintain their own websites, operate under their own names and may sell their products under their own names.

The following divisions operate as part of QAD Inc.:

Precision Software

Precision markets our transportation management solutions and is a trusted source for global trade and transportation execution. Precision Transportation Management facilitates documentation and control for moving shipments across borders, including regulatory compliance, and allows companies to optimize outside carriers for shipments. From a single, comprehensive open architecture that is adaptable and extensible, the solution controls both domestic and international movement of inbound and outbound goods, regulatory compliance, documentation, carrier and delivery management. This enterprise-class solution can be found in the world's largest and most complex organizations that demand speed and centralized control of trade and shipping.

DynaSys

DynaSys markets our Demand and Supply Chain Planning ("DSCP") solution. The DynaSys DSCP technology provides a comprehensive end-to-end solution that enables optimization, analysis, simulation, collaboration, and the ability to understand and efficiently plan supply chain activities. This solution helps enterprises improve customer satisfaction while reducing inventory levels and costs and provide instant visibility and intuitive decision support enabling companies to become more agile to make their supply chain a competitive business differentiation. The solution suite supports demand planning, inventory optimization, supply planning, manufacturing planning, financial planning, sales & operations planning, integrated business planning and Demand Driven Material Requirements Planning ("DDMRP").

CEBOS

CEBOS provides our enterprise quality management and regulatory compliance solutions. This application suite features manufacturing quality solutions for audit, risk management, document control, gage calibration, inspection and statistical process control.

CEBOS provides a fully integrated end-to-end enterprise quality management solution ("EQMS"). The solution targets are manufacturing organizations that will utilize quality as a means to increase competitiveness as well as optimize the manufacturing operating margins. By reducing the cost of quality as well as optimizing throughput and reducing manufacturing interruption resulting from poor quality, significant margin impacts can be realized. In addition, the solution will target the cost of good quality by increasing the effectiveness of quality management and moving organizations from a containment approach to a preventative operating strategy. The CEBOS solution places intense focus on the early stages of new product introduction and expansion into the supplier ecosystem to insure quality issues are addressed in a proactive manner. The solution readily interoperates with all versions of the QAD ERP solution as well as non-QAD ERP solutions.

Customer Support and Product Updates Provided via Our Cloud and Maintenance Offerings

Customer support services and product enhancements are provided to our cloud customers as part of their monthly subscription fee and to on-premises customers via our maintenance offering. Customer support services include Internet and telephone access to technical support personnel located in our global support centers. Through our support services, we provide the resources, tools and expertise needed to maximize the use of QAD Enterprise Applications. Customers active on maintenance or the cloud are also entitled to receive product upgrades and enhancements on a when-and-if available basis.

As part of our maintenance and cloud offerings, our online support site also provides access to an extensive knowledge database, online training materials, a virtual training environment, remote diagnostics and our software download center, called QAD Store. Our support professionals in our global support centers focus on quickly resolving customers' issues, maintaining optimal system performance and providing uninterrupted service for complete customer satisfaction. In addition, we provide other products, including operational metrics, workbenches and monitoring tools. Customers have access to these products at no additional fee, provided they have a current maintenance or cloud agreement in place with QAD.

Our cloud environment is managed by our Cloud Operations group with infrastructure operated by us, but located within third-party data center facilities or from cloud computing platform providers. The cloud operations group is dedicated to supporting our cloud solutions. Located primarily in the U.S. and India, they manage the day-to-day operations of our cloud computing solutions, act as the control point for activities related to elements of the cloud and maintain our cloud environment, conversions and upgrades to QAD Enterprise Applications.

Generally, our on-premises customers purchase maintenance when they acquire new licenses and our maintenance retention rate is more than 90%. Our maintenance and other revenue represented 37%, 42% and 47% of our total revenues in fiscal 2019, 2018 and 2017, respectively. Our maintenance revenue is negatively impacted by customers on maintenance converting to our cloud solutions. When maintenance customers convert to the cloud, they no longer contract for maintenance as those support services and unspecified updates are included as a component of the subscription offering. Our subscription revenue represented approximately 28%, 23% and 19% of our total revenue in fiscal 2019, 2018 and 2017, respectively, and our cloud customer retention rate is also in excess of 90%. We track our retention rate of cloud and maintenance by calculating the annualized revenue of customer sites with contracts up for renewal during the period compared to the annualized revenue associated with the customer sites that have canceled during the period. The percentage of revenue not canceled is our retention rate. Conversions to the cloud are not considered cancellations for purposes of the maintenance retention rate calculation. Additional users and additional modules are not included in the annualized revenue for purposes of this calculation.

QAD Global Services

QAD offers professional services including consulting, deployment, training, technical, development and integration to facilitate adoption of our cloud Enterprise Applications solution and enable customer success. Through our agile “Easy On Boarding” (“EOB”) approach we can help customers response to business challenges in a rapid, agile and effective manner.

QAD Global Services engages with our customers across the entire enterprise application life cycle through planning, design, implementation and post go-live support. Whether in the cloud or on-premises, our Global Services group assists our customers with initial deployments, upgrades to more current product versions, migration of on-premises deployments to the cloud, conversion and transfer of historical data, ongoing system and process optimization, and user training and education. In addition, through its ecosystem of partners, QAD can offer our customers augmented resources to assist on typical site-based implementation activities such as data cleansing, functional support, training and user acceptance testing.

QAD Global Services comprises over 450 consultants located throughout the world, augmented by a growing global network of certified partners. Our consulting ecosystem spans 60 countries. QAD consultants and partners are trained on our best practice implementation methodologies and have obtained certifications of proficiency in many areas. We offer a complete portfolio of services, delivered to consistent standards across the globe. Working in tandem with our partners, we support national and global projects on behalf of QAD customers.

In support of QAD’s vision of all customers becoming Agile Effective Enterprises, QAD has developed a framework of Key Performance Indicators (“KPIs”) used by QAD Global Services to measure pre- and post-implementation performance of business processes and aid in the diagnosis of opportunities for continuous improvement. The QAD KPI framework is available to all customers and is monitored using the QAD analytics suite.

QAD’s principal methodology for deployment of solutions is called QAD Easy On Boarding (“EOB”). EOB has been designed to make deployment of QAD solutions on-premises or in the cloud standardized and efficient. EOB features predefined industry process models and work instructions built into the products themselves as well as implementation guides and scripts, all based on our experience with best practice standards, resulting in greater out of the box fit. With EOB, implementation can be faster than more traditional approaches.

QAD Global Services focuses on assisting customers with the following activities:

Implementations and Migrations – QAD Global Services supports customers with the initial implementation of QAD Enterprise Applications. QAD Global Services has expertise in global implementations, harnessing the entire QAD Global Services ecosystem to provide local or remote support to meet customer requirements. QAD Global Services deploys our applications both on-premises and in the cloud. In addition, QAD Global Services has the experience to assist new customers with migration from other enterprise application systems. This service includes data conversions as well as process design change management.

Upgrades – QAD Global Services assists customers in the process of upgrading their QAD Enterprise Applications to the latest version, accelerating time to benefit, increasing new functionality and applying usability best practices.

Conversions – QAD Global Services employs a standardized process for converting from on-premises solutions to the cloud.

Integration – QAD Global Services has the expertise and experience to quickly integrate QAD solutions with other systems.

Systems Management – QAD Global Services delivers a range of services to support the technical management of systems and performance monitoring for those customers who choose on-premises deployment.

Training and Education – QAD Global Services offers a full range of services leveraging QAD’s learning management system. Users can access multimedia training on all QAD offerings and take advantage of pre-defined learning plans for all of the roles that QAD users typically perform. Global Services also provides customized courses that are taught on-site to meet specific customer needs and are available to end users, IT professionals, department managers, partners and consultants.

Extended Solution Support – QAD Global Services is available to support interfaces, Automation Solutions, any customer specific requests to tailor applications and EDI solutions through our Extended Solution Support Services.

Business Process Improvement – QAD has developed a range of predefined diagnostic offerings called Q-Scans. QAD Global Services utilizes Q-Scans to engage in highly efficient diagnosis of key business processes and functional areas to provide recommendations to customers for continuous improvement.

Pre-Defined Consulting Engagements – QAD Global Services performs diagnostic and prescriptive consultations that cover many areas including customization, analytics and various areas of compliance such as MMOG/LE and FDA requirements.

QAD Global Services’ network of employees, consultants and partners knows QAD software best. They diagnose issues preventing businesses from running efficiently and prescribe steps to maximize the benefits of QAD Enterprise Applications. These QAD experts offer what outside consultants cannot - a combination of a deep understanding of the industries in which our customers operate, in-depth knowledge of functionality of the QAD solution portfolio and the proven experience of helping customers leverage our software to become more Effective Enterprises. QAD Global Services offers a full range of program management, project management, industry consulting and technical services certified in our products and methodologies.

QAD GLOBAL PARTNER NETWORK

QAD establishes strategic relationships with our partners to expand our sales reach, improve our market impact, provide technological advantages and strengthen our strategic position in the industries that we serve. QAD and our partners are constantly evolving, broadening our expertise and our footprint in order to meet the diverse needs of our customers around the world. Today we have approximately 120 companies partnering with us to deliver innovative solutions, services and technology that help our customers build their Effective Enterprise.

OUR GROWTH STRATEGY

QAD believes there are substantial growth opportunities in its cloud business over the coming years. Global manufacturers are facing unprecedented levels of disruption driven by advances in digital technologies. Responding to these changes requires a level of agility that legacy ERP solutions fail to deliver. QAD’s Cloud ERP offers unparalleled speed of deployment and the ongoing ability to easily adapt and extend business models to meet the challenge of accelerating change. As a market leading solution for agile ERP, we expect to see a growing number of manufacturers moving from their legacy providers and turning to QAD to help them thrive in the digital manufacturing era. Additionally, we also expect to see a continuing conversion of our on premises customers to QAD’s Cloud ERP.

Our strategy is to enhance our position as a leading provider of cloud-based enterprise applications for global manufacturing companies. The key elements of our strategy, which we believe will drive continued growth, are as follows:

Leverage disrupted markets for new cloud customer acquisitions. The accelerating pace of change in our customers’ markets has created a disconnect between their business requirements and what their systems are able to support. Legacy ERP systems simply were not designed to support today’s rapid pace of change. The QAD Enterprise Platform was designed to provide greater fit and flexibility to easily meet tomorrow’s requirements. As such, disruption in our customers’ markets becomes a compelling reason for changing their ERP systems and one that we are well positioned to address. We are targeting segments within our primary verticals with the greatest disruption and actively pursuing new customers where we can provide the best fit. We are investing in sales and marketing to focus on new customer acquisitions. Three areas of disruption that we are targeting are: Anything as a Service (“XaaS”), make to order at scale, and the digital transformation of manufacturing (also known as Industry 4.0).

Grow our cloud business and expand our footprint within existing customers. We believe there is substantial opportunity to win new customers in the core vertical markets we serve and grow our cloud-based enterprise solutions within our global manufacturing customer base. Our cloud solutions allow our customers to focus on their products and services without the distraction of administering their enterprise applications or maintaining their infrastructure. With over 300,000 active users of our on-premises and cloud solutions, of which 43,000 are cloud users, we have many opportunities to increase cloud revenue across our existing installed base by converting our on-premises customers to our cloud-based solution and selling additional modules and users to our existing cloud customers

Continuous product development and rapid response to change. Manufacturers are facing a swiftly changing business environment fueled by exponential growth in underlying Industry 4.0 technologies such as Internet of Things (“IoT”), Machine Learning (“ML”), Artificial Intelligence (“AI”), Additive Manufacturing (“3D Printing”), Blockchain, Augmented Reality, and Predictive Analytics. We believe delivering a focused, flexible ERP system will be increasingly attractive to pragmatic manufacturers seeking a long-term fit of their business systems in support of their strategy in changing markets. We are committed to continuous investment in product development and advanced technologies to ensure our products have the necessary capabilities to meet the needs of our global customers and enhance our competitive position in the vertical markets we serve.

Focus on global manufacturing and leverage expertise within key vertical markets. Many manufacturers operate globally, requiring a provider that can tailor solutions to the unique needs of their markets, deliver local and global services resources and support local languages. Solutions must be cost effective and easy to implement and use. Our solutions offer many benefits to customers with global operations, including capabilities that support operations in multiple geographies with a variety of languages and currencies, as well as compliance with complex local regulations and business practices. Our existing global footprint is a key leverage point for meeting these needs by utilizing offices, personnel and partnerships in many countries around the world. We also employ staff with specific knowledge and experience in the industries in which our customers operate. We provide our solutions to 26 segments across six vertical manufacturing markets; and we actively participate in several leading industry associations. Our industry knowledge continues to deepen through regular interaction with our customers. This collective experience allows QAD to develop solutions with specific capabilities that address our customers’ needs in the industries they serve.

Enhance customer experience to deliver continuous value and maximize customer retention. Our goal is to renew the subscription or maintenance agreements of our customers every year. We deliver a continuous improvement process to ensure our customers are maximizing their investment in QAD products and using our software to operate their business at peak efficiency. We strive to deliver excellent customer support via our maintenance and cloud offerings. We also engage with every customer every year, frequently conducting reviews of their business processes and presenting opportunities for improvement. Our deep vertical segment focus and strong, ongoing customer relationships drive continuous development of industry-specific functionality. As a result, we have maintained retention rates in excess of 90% annually.

TECHNOLOGY

QAD Enterprise Applications was designed to achieve our vision for global manufacturing companies to effectively run their business processes at peak efficiency, in alignment with their strategic goals. We have chosen the best technologies to achieve our vision, focusing on user experience, integration, business services, analytics, databases and deployment flexibility. We embrace ‘openness’ as a core principle of our designs, aiming to allow customers freedom of choice of devices and open connectivity with other systems. The core of QAD Enterprise Applications is built on a service based architecture, which allows QAD Enterprise Applications’ components to communicate with one another through industry-standard messaging techniques like Representation State Transfer services. This allows customers to exploit the full benefit of QAD’s open architecture for their businesses.

QAD Enterprise Applications core systems are built upon the QAD Enterprise Platform. The QAD Enterprise Platform is a micro-services architecture with the technologies and development tools needed to build a world class user experience (“UX”) with comprehensive functionality for global manufacturing companies. This functionality is encapsulated into Apps that can be upgraded independently of each other as well as extended by customers. Apps can be accessed securely over the Internet via a web browser or mobile devices (iOS and Android). The platform provides many advanced services to Apps like an App builder, security, integration, cloud support, analytics, mobile, collaboration and a world-class UX. The platform supports UX, code, data and cloud flexibility to adapt readily to the ever-changing world of technology. The UX is built using the latest open web technologies to support a rich HTML5 user interface. Business logic can be implemented in JavaScript via the more structured Type Script, Oracle’s Java or Progress Software Corporation’s OpenEdge language. Databases include MySQL, Progress OpenEdge and Cassandra data lake.

QAD’s enterprise architecture provides significant flexibility for global companies in deploying QAD Enterprise Applications. Our enterprise architecture allows companies to separate the legal structure of their business from physical operating locations or to separate both of these from the software instances and computer hardware that support them. With QAD enterprise architecture, customers can choose which sites are a part of which companies, which sites are supported on any instance of the application, or which sites operate as one instance. Customers can also choose centralized, decentralized or hybrid computing architectures with parts of their enterprise running from both central resources and local resources.

QAD combines our technologies to provide a comprehensive cloud solution for our customers. Our cloud architecture encompasses infrastructure provisioning and application deployment, management, monitoring and security; providing a world-class development operations practice built around Information Technology Infrastructure Library (“ITIL”) standards. QAD’s cloud infrastructure operates on a Cloud Management Platform. This enables QAD to seamlessly deploy customer systems to one of a number of global cloud infrastructure providers as part of the QAD Cloud offering. Our cloud delivery centers are certified under the ISO 9001:2008 standard for quality management, the ISO 20000:2011 standard for service management (“SMS”), the ISO 27001:2013 standard for information security management (“ISMS”), the FDA 21 CFR Part 11 requirements for electronic records and signatures, and the SSAE 16 (SOC I-Type II) requirements for reporting and compliance controls.

Cloud deployments are designed to be delivered as single tenant deployments. This decision was made based on our customers’ requirements for a mission critical system that they control. Providing customers with control over when to apply patches and upgrades reduces downtime and aligns to their business cycles. It also reduces the substantial costs associated with validation requirements in Life Sciences.

QAD takes a pragmatic approach to technology that is use case focused. We engage with our customers through experimentation in the QAD Labs. QAD Labs is a virtual combination of people, technology and passion for addressing the challenges of manufacturing planning and operations. The guiding force behind QAD Labs is the collaboration between QAD and our customers. This collaboration involves experimenting with advanced technologies to address legacy or emerging challenges. The experimentation is not hindered by the large budgeting cycles of major projects. By design, the QAD Labs approach allows for rapid application, rapid evaluation and strategic pivots to build on success or investigate alternatives.

This experimentation can be aligned with initiatives like Industry 4.0 and associated technologies such as IoT, Machine Learning, Robotic Process Automation and Data Lakes. Alternatively, the initiative can be associated with innovation to solve long-term problems with the explosion of emerging new technologies. The pilot projects include machine learning, assisted planning and IoT integrated shop floor connectivity.

PRODUCT DEVELOPMENT

We continued to see our manufacturing customers’ businesses evolve during fiscal 2019 with a focus on connectivity to machines on the shop floor and data lakes to collect and analyze the rich information obtained from those machines. The products that our customers produce are becoming smarter and are now connected and participating in the IoT revolution. We are using Machine Learning and Predictive Analytics to streamline and make customers’ manufacturing processes smarter. We continue to maintain a global research and development organization that provides new product enhancements to the market on a semiannual basis in order to be responsive to industry and regulatory changes. We continue to support our customers as their operations move across the globe through our internationalization effort.

The enterprise software industry is continuing its transition from selling on-premises licenses to selling cloud-based solutions, which include flexible and adaptive integration, social media interaction, mobile computing and platform services capabilities. In fiscal 2019, we released a major upgrade to the Enterprise Edition software suite that was focused on supply chain efficiencies and flexible manufacturing. Our latest agile manufacturing module moved to general availability and gives our customers the ability to mix and match their manufacturing styles in one easy to use production process.

We continued the transition of our business model and product suite to cloud-based offerings as we moved our latest user experience and QAD Enterprise Platform to general availability for our cloud customers. We started an Early Adopter program for our on-premises customers. Our latest release supports mobile applications for decision making and provides insights into the health of our customers’ businesses through an Actionable Insights application. This offering is designed to give our customers even more value and flexibility when using our product suite with a secure browser from anywhere the user has connectivity. We continue to see more attempts of outside penetration or hacking with Internet facing applications which we take very seriously. We continue to have our software verified through an outside firm by scanning all the source code and performing penetration testing to preemptively identify and remove security flaws. With our web services, rich set of API’s and the QAD Enterprise Platform, our customers can more easily connect our product suite to other applications and extend our solution without customizing or writing code.

We dedicate considerable technical and financial resources to research and development to continually enhance and expand our product suite. For example, in fiscal 2019, we continued our internationalization program in support of our global customers. As we ended fiscal 2019, we were supporting our customers in over 70 countries with a single solution managed and maintained by QAD’s research and development organization. We continue to see a trend toward electronic invoicing and registration of shipments and invoices with government agencies to prevent falsification and tax avoidance. Spain, Mexico and Italy all introduced legislation in 2018 that requires all invoices to be registered with the government. We also see a continued tightening of tax legislation. India introduced a new Value Added Tax (“VAT”) process during 2018. We continue to support our customers through these changes without interruption to their business. Our goal is to continue to provide our customers with software that assists them in meeting the legal requirements of the countries in which they do business.

We operate a global research and development (“R&D”) organization comprised of 430 R&D employees located in offices in the United States, India, China, Ireland, Australia, France, Belgium, Spain, Brazil, Great Britain and Poland. Our R&D expenses totaled \$54.0 million, \$47.7 million and \$43.6 million in fiscal years 2019, 2018 and 2017, respectively. Our software is primarily developed internally; however, we also use independent firms and contractors to perform some of our product development activities when we require additional resources or specific skills or knowledge. All outside development is managed by our internal R&D organization. As needed, we acquire products or technology developed by others by purchasing or licensing products and technology from third parties. We continually review these investments in an effort to ensure that we are generating sufficient revenue or gaining enough competitive advantage to justify their costs. We routinely translate our product suite into fourteen languages and through our internationalization program we support mandatory governmental regulations and reporting requirements for over 70 countries. This is accomplished through a single offering for our customers in the cloud or on-premises, allowing them to run their businesses using a consistent core business model with the deployment model of their choice.

We plan to continue to manage significant product development operations globally over the next several years. We believe that our ability to conduct research and development at various locations throughout the world allows us to optimize product development at lower costs and integrate local market knowledge into our development activities. We continually assess the significant costs and challenges, including intellectual property protection, against the benefits of our international development activities.

DIRECT AND INDIRECT SALES

QAD sells its products and services through direct and indirect sales channels located throughout the regions of North America, Latin America, EMEA and Asia Pacific. Each region leverages global standards and systems to enhance consistency when interacting with global customers. Additionally, we have a global strategic accounts team, which is responsible for managing QAD’s largest global customers across regions.

Our direct sales organization includes approximately 65 commissioned sales people. Incentive pay is a significant portion of the total compensation package for our sales staff. We continually align our sales organization and business strategies with market conditions to maintain an effective sales process. We cultivate the industries we serve within each territory through marketing, local product development and sales training.

Our indirect sales channel consists of approximately 40 distributors and sales agents worldwide. We do not grant exclusive rights to any of our distributors or sales agents. Our distributors and sales agents primarily sell independently to companies within their geographic territory, but may also work in conjunction with our direct sales organization. We also identify global sales opportunities through our relationships with implementation service providers, hardware vendors and other third parties.

MARKETING

Our marketing strategy is to differentiate our offering by focusing on our role in providing value by helping our customers achieve the vision of the Agile, Rapid and Effective Enterprise. We are targeting segments within our primary verticals with the greatest disruption and where we can provide the best fit.

Our main marketing objectives are to leverage the measurable success in business outcomes our customers have achieved and highlight hidden costs prospects may face to increase awareness and drive leads in these target segments. We do this by openly and consistently communicating with QAD customers, prospects, partners, investors and other key audiences. Our primary marketing activities include: account based marketing (“ABM”) for targeting, buying intent, and display advertising; press and industry analyst relations to garner third-party validation and generate positive coverage for our company, offerings and value proposition; user conferences and events, such as Explore, as well as participation in other industry events, to create customer and prospect awareness; content marketing and engagement on social channels like Facebook, Twitter, LinkedIn and YouTube; search engine optimization; web site development and gamification to engage and educate prospects and generate interest through product information and demonstrations; case studies, white papers, and marketing collateral; customer testimonials, references, and referrals; and sales tools and field marketing events to enable our sales organization to more effectively convert leads into customers.

We recognize the changing buying dynamics and are focused on engaging with prospects early in the sales cycle in order to help set the buying criteria and specifications in a way that uniquely leads to QAD. We seek to accelerate prospects through the buying journey by demonstrating the value of our products, answering questions, and removing roadblocks.

COMPETITION

Every aspect of our business is affected by strong competition from both enterprise software application vendors and cloud computing application services providers. The markets for our on-premises and cloud offerings are rapidly evolving; highly competitive; and subject to changing technology, shifting customer needs and frequent introductions of new applications. Our customers demand greater performance and reliability with lower complexity. Cost of implementation or conversion to the cloud and cost of ongoing maintenance and subscription are constant concerns when our customers make decisions about how best to deploy their resources.

We compete with large, well-established enterprise application vendors, such as SAP, Oracle and Infor, who hold significant market share in the traditional ERP marketplace. These companies have considerable financial resources and name recognition; and have established broad market solutions by developing applications targeted at many industries, not just manufacturing. Internationally, we face competition from local companies, as well as the large enterprise application competitors, many of which have products tailored for those local markets.

Most enterprise application vendors today have some focus on cloud solutions, in addition to on-premises sales, which creates an environment in which we face competition from a variety of vendors that address one or more of our applications. As a result, our cloud solutions compete with both large enterprise software vendors and cloud computing application service providers. In addition, other vendors that provide services in different markets may develop solutions in our target markets and some potential customers may elect to develop their own internal solutions.

We believe the key competitive factors in our markets are:

- Customer satisfaction
- Speed and ease of deployment and use of applications
- Total cost of ownership
- Performance and reliability
- Capability for configuration, integration, security and scalability
- Solution breadth and functionality
- Technological innovation and ability to respond to customer needs rapidly
- Financial resources and
- Reputation of the vendor.

We believe that we compete favorably on the basis of these factors. To further our market success, we must continue to respond promptly and effectively to technological change and competitors' innovations. Our ability to remain competitive will depend on our efforts in the areas of product development and sales, services and support operations.

EMPLOYEES

As of January 31, 2019, we had approximately 1,970 full-time employees, including 965 in support, subscription and professional services, 430 in research and development, 345 in sales and marketing and 230 in administration. Generally, our employees are not represented by collective bargaining agreements. However, certain employees in our Netherlands, France and Italy subsidiaries are represented by statutory works councils as required under local law. Employees of our Brazilian subsidiary are represented by a collective bargaining agreement with the Data Processing Union.

INTELLECTUAL PROPERTY

We rely on a combination of trademark, copyright, trade secret and patent laws in the United States and other jurisdictions, as well as confidentiality procedures and contractual provisions to protect our proprietary technology and our brands and we maintain programs to protect and grow our rights. We also enter into confidentiality and proprietary rights agreements with our employees, consultants and other third parties and control access to software, services, documentation and other proprietary information.

SEASONALITY

Our fourth quarter has historically been our strongest quarter for new business and maintenance renewals. For a more detailed discussion, see the "Seasonal Nature of Deferred Revenue, Accounts Receivable and Operating Cash Flow" discussion in Management's Discussion and Analysis.

SEGMENT REPORTING

We operate in a single reporting segment. Geographical financial information for fiscal years 2019, 2018 and 2017 is presented in Note 12 within the Notes to Consolidated Financial Statements included in Item 15 of this Annual Report on Form 10-K.

AVAILABLE INFORMATION

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge on our website at www.qad.com, as soon as reasonably practicable after such reports have been electronically filed or otherwise furnished to the Securities and Exchange Commission. We are not including the information contained on our website as part of, or incorporating it by reference into, this annual report on Form 10-K.

ITEM 1A. RISK FACTORS

The environment in which we operate involves significant risks and is subject to factors beyond our control. You should consider the risk factors described below before investing in our stock as such risks may have a material adverse effect on our business, results of operations and financial condition and could cause the price of our stock to decline. Please note that the risk factors described below are not exhaustive.

Risks associated with our cloud service offerings

Defects and disruptions in our services could diminish demand for our services and subject us to liability.

Our cloud service offerings are complex and incorporate a variety of hardware, network infrastructure and proprietary and third-party software, and may have errors or defects that could result in unanticipated downtime and disruptions for our customers and harm to our reputation and our business. We have from time to time found defects in our services and new defects may be discovered in the future, especially in connection with the integration of new technologies and the introduction of new services. As a result, we could lose future sales and existing customers could elect to cancel or make warranty or other claims against us and potentially expose us to the expense and risk of litigation.

Our revenue and profitability will be adversely affected if we do not properly manage our cloud service offerings.

We expend significant resources to improve the reliability and security of our cloud offerings and the cost of these investments could reduce our revenue and profitability. The pricing and other terms of some of our cloud agreements require us to make estimates and assumptions at the time we enter into these contracts that could differ from actual results. Early termination, increased costs or unanticipated delays could have an adverse effect on our profit margin and generate negative cash flow. Further, if we experience delays in implementing new cloud customers (whether due to product defects, system complexities or other factors) then customers may delay the deployment of additional users and sites, which could adversely affect our revenue growth. If we fail to meet our system availability commitments or other customer obligations then we may be required to give credits or refund fees, and we may be subject to litigation and loss of customer business. For example, if we were to miss our system availability commitments then we are obligated under our standard customer contracts to issue one day's credit against future fees for each hour of system unavailability.

Continued growth could strain our personnel resources and infrastructure, and if we are unable to scale our operations and increase productivity, we may not be able to successfully implement our business plan.

We continue to experience significant growth in our customer base and personnel, which has placed a strain on our management, administrative, operational and financial infrastructure. We anticipate that significant additional investments will be required to scale our operations and increase productivity, to address the needs of our customers, to further develop and enhance our services, and to scale with our overall growth. Our success will depend in part upon our ability to manage our projected growth effectively. To do so, we must continue to increase the productivity of our existing employees and to hire, train and manage new employees as needed, and continue to improve our operational, financial and management controls, our reporting systems and procedures. We may also experience a decline in our revenue growth rate as our revenues increase to higher levels. If we fail to successfully scale our operations and increase productivity, we may be unable to execute our business plan.

Our cloud retention rate is dependent upon a number of factors that may impact our ability to accurately predict growth in our cloud business.

Our cloud customers typically enter into subscription agreements with an initial term of 12 to 60 months. Our customers have no obligation to renew their subscriptions after the expiration of their initial subscription period, and some customers may elect (for a variety of reasons, including a business downturn) not to renew, or may elect to renew at a lower subscription level. Growth in our cloud business may be affected by our inability to maintain high retention rates and sell additional features and services to our current customers, which could depend on a number of factors, including customers' satisfaction with our products and services, the prices of our offerings and general economic conditions. We cannot provide assurance that our subscriptions will be renewed at the same or higher levels of service, for the same number of users or for the same duration of time, if at all, or that we will be able to accurately predict future customer retention rates. If our customers do not renew their subscriptions or if they renew on terms less favorable to us, the rate at which our cloud business grows may decline and our revenue may be reduced.

We rely on third-party hosting and other service providers.

We currently serve our cloud customers from third-party data center hosting facilities located in the United States and other countries. We do not control the operation of any of these facilities, and they may be subject to damage or interruption from earthquakes, floods, fires, power loss, telecommunications failures and similar events. They may also be subject to breaches of computer hardware and software security, break-ins, sabotage, intentional acts of vandalism and similar misconduct. And while we rely on service level agreements with these vendors, if they do not properly maintain their infrastructure or if they incur unplanned outages, our customers may experience performance issues or unexpected interruptions and we will not meet our service level agreement terms with our customers. Despite precautions taken at these facilities, the occurrence of a natural disaster or an act of terrorism, a decision to close the facilities without adequate notice or other unanticipated problems at these facilities could result in lengthy interruptions in our service. Even with our disaster recovery precautions, our services could be interrupted. Any loss or interruption of these services could result in us not meeting our service level agreements with our customers which would significantly increase our expenses, reduce our ability to generate revenue and/or result in errors or a failure of our services which could adversely affect our business. These vendor services may not continue to be available at reasonable prices or on commercially reasonable terms, or at all. Additionally, our service level agreements with our customers are not the same terms as our service level agreements with our hosting vendors. Our agreements with our customers are generally more restrictive and result in higher fees paid to customers for unplanned outages than credits we may receive from our hosting vendors.

We may be exposed to liability and loss from cyber security breaches.

Our cloud services involve the storage and transmission of customers' proprietary information, and security breaches could expose us to a risk of loss of this information, resulting in litigation and possible liability. Security breaches may also include "denial-of-service" attacks, which can potentially disrupt our operations and our customers' operations. Security measures may be breached in numerous ways, such as remote or on-site break-ins by computer hackers, disgruntled employees or employee error during transfer of data to additional data centers or at any time, and result in unauthorized access to our own and our customers' data, intellectual property and other confidential business information. Additionally, third parties may attempt to induce employees or customers into disclosing sensitive information such as user names, passwords or other information in order to gain access to our own and our customers' data, intellectual property and other confidential business information. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. A security breach could cause a loss of confidence in the security of our services, damage our reputation, disrupt our business, create legal liability and cause severe and potentially irreparable impact to our business. In the normal course of business, we are and have been the target of malicious cyber-attack attempts and have experienced other security incidents. To date, such identified security events have not had a material impact on our business operations or financial results, but there can be no assurance that future cyber-attacks will not have a material adverse impact.

Our solutions can be used to collect and store personal information of our customers' employees or customers, and therefore privacy concerns and governmental regulations could result in additional cost and liability to us or inhibit sales of our solutions.

Regulatory focus on privacy issues continues to increase and worldwide laws and regulations concerning the handling of personal information are expanding and becoming more complex. Many federal, state and foreign government bodies and agencies have adopted, or are considering adopting, laws and regulations regarding the collection, use, disclosure and retention of personal information. The European Union ("EU") and the United States entered into a new framework (known as the "Privacy Shield") in July 2016 to provide a mechanism for companies to transfer data from EU member states to the U.S. The Privacy Shield and other data transfer mechanisms are subject to legal challenge, which generates uncertainty about the legal basis for data transfers to the U.S. or interruption of such transfers. In the event a court blocks transfers to or from a particular jurisdiction on the basis that transfer mechanisms are not legally adequate, this could cause operational interruptions, liabilities and reputational harm. These and other requirements could increase the cost of compliance for us and our customers, restrict our and our customers' ability to store and process data, negatively impact our ability to offer our solutions in certain locations and limit our customers' ability to deploy our solutions globally. These consequences may be more significant in countries with legislation that requires data to remain localized "in country", as this could require us or our customers to establish data storage in other jurisdictions or apply local operational processes that are difficult and costly to integrate with global processes.

If we fail to comply with such laws and regulations, we may be subject to significant fines, penalties or liabilities for noncompliance, thereby harming our business. For example, in 2016, the European Union adopted the General Data Protection Regulation ("GDPR"), which establishes new requirements regarding the handling of personal data and which became effective in May 2018. Non-compliance with the GDPR may result in monetary penalties of up to 4% of worldwide revenue. In addition, domestic data privacy laws, such as the California Consumer Privacy Act ("CCPA") which will take effect in January 2020, continue to evolve and could expose us to further regulatory burdens.

Risks associated with rapid technological change and complexity

The market for our products and services is characterized by rapid technological change.

Customer requirements for products can change rapidly as a result of innovation or change within the computer hardware and software industries, the introduction of new products and technologies and changes to industry standards. Our future success, including our cloud service offerings, will depend upon our ability to continue to enhance our current product line and to develop and introduce new products and services that keep pace with technological developments, satisfy increasingly sophisticated customer requirements, keep pace with industry and compliance standards and achieve market acceptance. Our failure to successfully develop or acquire, and market, product enhancements or new products could have a material adverse effect on our business. Despite our significant investments in research and development, we may not realize significant new revenue from these investments for several years, if at all.

New software releases and enhancements may adversely affect our software sales.

The actual or anticipated introduction of new products, technologies and industry standards can render existing products obsolete or unmarketable or result in delays in the purchase of those products. Significant delays in launching new products may also jeopardize our ability to compete. If we fail to anticipate or respond to developments in technology or customer requirements, have significant delays in the introduction of new products or fail to maintain overall customer satisfaction, this could have a material adverse effect on our business.

Services engagements are complex and pose material risks.

Services engagements may involve complex technological challenges, including those related to customer customization requests and our cloud environments, and such challenges demand a significant number of specialized technical resources. Our failure to successfully address these issues could have a material adverse effect on our business.

Changes in laws and regulations related to the Internet may negatively impact our business.

Federal, state or foreign government bodies or agencies have in the past adopted, and may in the future adopt, laws or regulations relating to Internet usage. Changes in these laws or regulations could require us to modify our applications in order to comply with these laws or regulations. In addition, government agencies or private organizations may begin to impose taxes, fees or other charges for accessing the Internet or for commerce conducted via the Internet. These laws or charges could negatively impact our business.

Risks associated with our revenue, expenses and pricing

Our revenue and profits may fluctuate significantly.

Our quarterly and annual operating results have fluctuated in the past and may do so in the future. Such fluctuations have resulted from the seasonality of our customers' manufacturing businesses and budget cycles and other factors. Moreover, there can be no assurance that our revenue will grow in future periods. As a result of fluctuating revenue or due to accelerated costs and deferred revenue resulting from cloud bookings there can be no assurance that we will be profitable on a quarterly or annual basis. Furthermore, with the adoption of Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers* ("Topic 606") in fiscal 2019, revenue recognition has much greater reliance on management estimations.

Our financial forecasts are subject to uncertainty to the extent they are based on estimated sales forecasts.

Our revenues, and particularly our new software license revenue, are difficult to forecast, and, as a result, our financial forecasts are subject to uncertainty. Specifically, our sales forecasts are based on estimates that our sales personnel make regarding the likelihood of potential sales, including their expected closing date and fee amounts. If these estimates are inaccurate then our financial forecasts may also be inaccurate.

The margins in our services business may fluctuate.

Services revenue is dependent upon the timing and size of customer orders, as well as upon our related license and subscription sales. We may hire additional services staff in anticipation of customer orders and if we are unable to keep the services staff engaged on billable matters then our profit margins may suffer. In addition, certain engagements may involve fixed price arrangements and significant staffing which require us to make estimates and assumptions at the time we enter into these contracts as well as throughout the contract to determine percent completion and revenue recognition. Variances between these estimates and assumptions and actual results could have an adverse effect on our profit margin and generate negative cash flow and negative services margins. To the extent that we are not successful in securing orders from customers to provide services, or to the extent we are not successful in achieving the expected margin on such services, our results of operations may be adversely affected.

The margins in our cloud service offerings may fluctuate.

Our cloud service offerings may involve fixed price arrangements, fixed and up-front costs and significant staffing which require us to make estimates and assumptions at the time we enter into these contracts. Variances between these estimates and assumptions and actual results could have an adverse effect on our profit margin and/or generate negative cash flow. To the extent that we are not successful in securing orders from customers to provide cloud services, or to the extent we are not successful in achieving the expected margin on such solutions, our results may be adversely affected.

Because we recognize revenue from cloud services over the term of the subscription, downturns or upturns in new business may not be immediately reflected in our operating results.

We generally recognize subscription revenue from customers ratably over the terms of their subscription agreements. As a result, most of the subscription revenue we report in each quarter is the result of subscription agreements entered into during prior quarters. Consequently, a decline in new or renewed subscriptions in any one quarter may not be reflected in our revenue results for that quarter. Any such decline, however, will negatively affect our revenue in future quarters. Accordingly, the effect of significant downturns in sales and market acceptance of our cloud services, and potential changes in our attrition rate, may not be fully reflected in our results of operations until future periods. Our subscription model also makes it difficult for us to rapidly increase our subscription revenue through additional sales in any period, as subscription revenue from new customers must be recognized over the applicable subscription term.

A significant portion of our revenue in any quarter may be derived from a limited number of large, non-recurring license sales.

We may experience large individual license sales, which may cause significant variations in license fees being reported on a quarterly basis. We also believe that the purchase of our products is discretionary and may involve a significant commitment of a customer's capital resources. Therefore, a downturn in any significant customer's business could have a significant adverse impact on our revenue and profit. Further, we have historically recognized a substantial portion of our license revenue from sales booked and shipped in the last month of a quarter and, as a result, the magnitude of quarterly fluctuations in license fees may not become evident until the end of a particular quarter. Our revenue from license fees in any quarter is substantially dependent on orders booked and shipped in that quarter. We are unlikely to be able to generate revenue from alternative sources if we discover a shortfall near the end of a quarter.

A significant portion of our revenue is derived from maintenance renewals with our existing installed base of customers.

Maintenance renewals are at the customer's discretion, and customers may elect not to renew. Further, it is our strategy to convert existing customers to our cloud services offering, which, if successful, will reduce maintenance renewals. If our existing customers discontinue maintenance to a significant degree, our revenues and results of operations will be adversely affected.

Our maintenance retention rate is dependent upon a number of factors such as our ability to continue to develop and maintain our products, continue to recruit and retain qualified personnel to assist our customers, and promote the value of maintenance for our products to our customers.

Our maintenance retention rate is also dependent upon factors beyond our control such as technology changes and their adoption by our customers, budgeting decisions by our customers, changes in our customers' strategy or ownership and plans by our customers to replace our products with competing products. If our maintenance retention rate decreases, our revenue and results of operations would be adversely affected.

We have risks regarding our pricing and pricing models.

We are occasionally obliged to offer deep discounts and other favorable terms in order to match or exceed the product and service offerings of our competitors. Furthermore, we may be faced with general downward pricing pressure from competitors and the market in the future. If we do not adapt our pricing models to reflect changes in customer demand resulting from rapid technological advances, such as those leading to alternative hosting and cloud service delivery offerings, our revenues could decrease. For example, if customer software usage evolves in ways that maintain or increase the value they derive from our products while decreasing traditional licensing metrics such as individual users, then if we do not adjust our pricing models accordingly then our revenues could decrease. Further, broad-based changes to our pricing models could adversely affect our revenues and operating results as our sales force implements, and our customers and accounting practices adjust to, the new pricing models.

We may have exposure to additional tax liabilities.

As a multinational organization, we are subject to income taxes as well as non-income taxes in the United States and in various foreign jurisdictions. Significant judgment is required in determining our worldwide income tax provision and other tax liabilities. Although we believe that our tax estimates are reasonable, the final determination of tax audits or tax disputes may differ from what is reflected in our historical income tax provisions and accruals.

Our tax rate could be adversely affected by several factors, many of which are outside of our control, including:

- Changes in jurisdictional revenue mix;
- Changing tax laws, regulations and interpretations thereof, including the changing landscape around Internet taxation and the new US Tax Reform laws;
- Changes in tax rates;
- Changes to the valuation allowance on deferred tax assets; and
- Assessments and any related tax, interest or penalties.

If we are deemed to owe additional taxes, our results of operations may be adversely affected.

We report our results based on our calculations of the amount of taxes owed in the various tax jurisdictions in which we operate.

Periodically, we may receive notices that a tax authority in a particular jurisdiction believes that we owe a greater amount of income tax than we have reported, in which case we may engage in discussions or possible dispute resolutions with these tax authorities. If the ultimate determination of our income taxes owed in any of these jurisdictions is for an amount in excess of the tax provision we have recorded or reserved for, our operating results, cash flows, and financial condition could be adversely affected. We are also subject to non-income taxes, such as payroll, sales, use, value-added, net worth, property and goods and services taxes, in the United States and in various foreign jurisdictions. Audits or disputes relating to non-income taxes may result in additional liabilities that could negatively affect our operating results, cash flows and financial condition.

Risks associated with our sales cycle

Our products involve a long sales cycle and the timing of sales is difficult to predict. Because the licensing or subscription of our primary products generally involves a significant commitment of capital or a long-term commitment by our customers, the sales cycle associated with a purchase of our products is generally lengthy.

This cycle varies from customer to customer and is subject to a number of significant risks over which we have little or no control. The evaluation process that our customers follow generally involves many of their personnel and requires complex demonstrations and presentations to satisfy their needs. Significant effort is required by us to support this process, whether we are ultimately successful or not. If sales forecasted for a particular quarter are not realized in that quarter, then we are unlikely to be able to generate revenue from alternative sources in time to compensate for the shortfall. As a result, a lost or delayed sale could have a material adverse effect on our quarterly and annual operating results.

Risks associated with our solutions

We may experience defects in our solutions.

Our solutions, including licensed software, cloud services and other services, may contain defects, including security flaws, especially when first introduced or when new versions are released. The detection and correction of defects can be time consuming and costly. Defects in our solutions, including licensed third-party software, could affect the ability of our products to work with other hardware or software products. Defects could delay the development or release of new products or new versions of products and could adversely affect market acceptance of our products and our ability to conduct our cloud operations. Defects may also impair our ability to complete services implementations on time and within budget. Customers who rely on our solutions for applications that are critical to their businesses may have a greater sensitivity to such defects than customers for software products generally. Defects could expose us to product liability, performance and warranty claims as well as harm our reputation, which could adversely impact our future sales.

Dependence on third-party suppliers

We are dependent on Progress Software Corporation.

The majority of QAD Enterprise Applications are written in a programming language that is proprietary to Progress Software Corporation, or “Progress.” These QAD Enterprise Applications do not run within programming environments other than Progress and therefore our customers must acquire rights to Progress software in order to use these QAD Enterprise Applications. We have an agreement with Progress under which Progress licenses us to distribute and use Progress software related to our products. This agreement remains in effect unless terminated either by a written ten-year advance notice or due to a material breach that is not remedied. If Progress were to provide notice that it was terminating its agreement with us, this could have a material adverse effect on our business and prospects.

Our success is also dependent upon Progress continuing to develop, support and enhance its programming language, its toolset and its database, as well as the continued market acceptance of Progress products. A change in Progress' control, management or direction may adversely impact our relationship with Progress and our ability to rely on Progress products in our business. We have in the past, and may in the future, experience product release delays because of delays in the release of Progress products or product enhancements. Any of these delays could have a material adverse effect on our business.

We are dependent on other third-party suppliers.

We resell certain software which we license from third parties other than Progress. There can be no assurance that these third-party software arrangements and licenses will continue to be available to us on terms that provide us with the third-party software we require, provide adequate functionality in our products on terms that adequately protect our proprietary rights or are commercially favorable to us.

Certain QAD Enterprise Applications are developed using embedded programming tools from Microsoft and Sun Microsystems (owned by our competitor Oracle) for the Microsoft .NET framework and Java Programming environments, respectively. We rely on these environments' continued compatibility with customers' desktop and server operating systems. In the event that this compatibility is limited, some of our customers may not be able to easily upgrade their QAD software. If the present method of licensing the .NET framework as part of Microsoft's Desktop Operating systems is changed and a separate price were applied to the .NET framework, our expenses could increase substantially. Similarly, if Oracle decided to charge fees or otherwise change the historical licensing terms for Java technology, our expenses could increase substantially. For both of the .Net and Java elements, we rely on market acceptance and maintenance of these environments and we may be adversely affected if these were withdrawn or superseded in the market.

Our partner agreements, including development, product acquisition and reseller agreements, contain confidentiality, indemnity and non-disclosure provisions for the third party and end user. Failure to establish or maintain successful relationships with these third parties or failure of these parties to develop and support their software, provide appropriate services and fulfill confidentiality, indemnity and non-disclosure obligations could have an adverse effect on us. We have been in the past, and expect to be in the future, party to disputes about ownership, license scope and royalty or fee terms with respect to intellectual property. Failure to prevail in any such dispute could have a material adverse effect on our business.

Risks associated with our proprietary rights and customer contracts

Our intellectual property may be at risk as a result of a variety of different factors.

We rely on a combination of protections provided by applicable copyright, trademark, patent and trade secret laws, as well as on confidentiality procedures and licensing arrangements, to establish and protect our rights in our software and related materials and information. We enter into licensing agreements with each of our on-premises customers and these agreements provide for the non-exclusive use of QAD Enterprise Applications. Our license contracts contain confidentiality and non-disclosure provisions, a limited warranty covering our applications and indemnification for the customer from infringement actions related to our applications. In addition, we generally license our software to end-users in both object code (machine-readable) and source code (human-readable) formats. While this practice facilitates customization, making software available in source code also makes it possible for others to copy or modify our software for impermissible purposes.

Despite our efforts, it may be possible for others to copy portions of our products, reverse engineer them or obtain and use information that we regard as proprietary, all of which could adversely affect our competitive position. Furthermore, there can be no assurance that our competitors will not independently develop technology similar to ours. In addition, the laws of certain countries do not protect our proprietary rights to the same extent as the laws of the United States.

The unauthorized use of our intellectual property rights may increase the cost of protecting these rights or reduce our revenues. We may initiate, or be subject to, claims or litigation for infringement of proprietary rights or to establish the validity of our proprietary rights, which could result in significant expense to us, cause product shipment delays, require us to enter royalty or licensing agreements and divert the efforts of our technical and management personnel from productive tasks, whether or not such litigation were determined in our favor.

We may be exposed to claims for infringement of intellectual property rights and breach of contract, and we may experience impairment of our own intellectual property rights.

Third parties may initiate proceedings against us claiming infringement or other misuse of their intellectual property rights and/or breach of our agreements with them. Further, while we actively monitor the adoption of open source software in our software development process, it is possible that our use of open source software may inadvertently subject our proprietary software to public disclosure and impairment of our intellectual property rights. The likelihood of such instances may increase as the use of open source and other third-party code becomes more prevalent in the industry. Any such instances, regardless of validity, may cause us to:

- Pay license fees or monetary damages;

- Incur high legal fees in defense of such claims;
- Alter or stop selling our products;
- Satisfy indemnification obligations to our customers;
- Release source code to third parties, possibly under open source license terms; and
- Divert management's time and attention from operating our business.

We may be exposed to product liability claims and other liabilities.

While our customer agreements typically contain provisions designed to limit our exposure to product liability claims and other liability, we may still be exposed to liability in the event such provisions may not apply.

We have an errors and omissions insurance policy which may not totally protect us.

The Company has an errors and omissions insurance policy. However, this insurance may not continue to be available to us on commercially reasonable terms or at all, or a claim otherwise covered by our insurance may exceed our coverage limits, or a claim may not be covered at all. We may be subject to product liability claims or errors or omissions claims that could have an adverse effect on us. Moreover, defending a suit, regardless of its merits, could entail substantial expense and require the time and attention of key management personnel.

Risks associated with our market and the economy

The market in which we participate is highly competitive and if we do not compete effectively our operating results could be harmed.

The market for enterprise software solutions is highly competitive and subject to changing technology, shifting customer needs and introductions of new products and services. Many of our current and potential competitors enjoy substantial competitive advantages, such as greater name recognition, larger marketing budgets and substantially greater financial, technical and other resources. In addition, many of our current and potential competitors have established marketing relationships and access to larger customer bases. A number of companies offer products that are similar to our products and target the same markets. Any of these competitors may be able to respond more quickly to new or changing opportunities, technologies and market trends, and devote greater resources to the development, promotion and sale of their products. Our competitors may also offer extended payment terms or price reductions for their products and services, either of which could materially and adversely affect our ability to compete successfully. There can be no assurance that we will be able to compete successfully against current and future competitors or that the competitive pressures that we may face will not materially adversely affect our business, revenue and results of operations.

We are dependent upon achieving success in certain concentrated markets.

We have made a strategic decision to concentrate our product development, as well as our sales and marketing efforts, in certain vertical manufacturing industry segments: automotive, life sciences, consumer products, food and beverage, high technology and industrial products. We also concentrate our efforts on certain geographies, where costs to expand our market or stay in compliance with local requirements could be extensive and require a large amount of resources. An important element of our strategy is the achievement of technological and market leadership recognition for our software products in these segments and geographies. The failure of our products to achieve or maintain substantial market acceptance in one or more of these segments or geographies could have an adverse effect on us. If any of these targeted industry segments or geographies experience a material slowdown or reduced growth, those conditions could adversely affect the demand for our products.

Unfavorable economic conditions may adversely impact our business, operating results and financial condition.

Our operations and performance are subject to the risks arising from worldwide economic conditions, which are themselves impacted by other events, such as financial crises, natural disasters and political turmoil. In particular, the negative impact of economic conditions on manufacturing companies could have a substantial adverse effect on our sales, because our products are focused on supporting manufacturing companies. Uncertainty about global economic conditions may result in reductions in sales of our products, longer sales cycles, slower adoption of new technologies and increased price competition as manufacturing companies may delay, reduce or forego spending in response to declining asset values, tight credit, high unemployment, natural disasters, political unrest and negative financial news. Such economic conditions may also result in our customers extending their payment periods or experiencing reduced ability to pay amounts owed to us. Uncertainty about global economic conditions could also increase the volatility of our stock price. If any of the foregoing occurs, our results of operations may be adversely affected.

Risks associated with our third-party relationships

We are dependent upon the development and maintenance of sales, services and marketing channels.

We sell and support our products through direct and indirect sales, services and support organizations throughout the world. We also maintain relationships with a number of consulting and systems integration organizations that we believe are important to our worldwide sales, marketing, service and support activities and to the implementation of our products. We believe this strategy allows for additional flexibility in ensuring our customers' needs for services are met in a cost effective, timely and high quality manner. Our services providers generally do not receive fees for the sale of our software products unless they participate actively in a sale as a sales agent or a distributor. We are aware that these third-party service providers do not work exclusively with our products and in many instances have similar, and often more established, relationships with our principal competitors. If these third parties exclusively pursue products or technology other than QAD software products or technology, or if these third parties fail to adequately support QAD software products and technology or increase support for competitive products or technology, we could be adversely affected.

Risks associated with acquisitions we may make

We may make acquisitions or investments in new businesses, products or technologies that involve additional risks.

As part of our business strategy, we have made, and expect to continue to make, acquisitions of businesses or investments in companies that offer complementary products, services and technologies or expand our geographical presence. Such acquisitions or investments involve a number of risks which could adversely affect our business or operating results, including:

- Our business strategy may not be furthered by an acquisition as we planned;
- We may be unable to retain customers, vendors, distributors, business partners or other relationships associated with the acquired business;
- Our due diligence may not identify significant liabilities or deficiencies associated with the business, assets, products, financial condition or accounting practices of an acquired company;
- We may have difficulty integrating an acquired business due to incompatible business cultures;
- We may incur significant integration costs related to assimilating the operations and personnel of acquired companies;
- Acquisition costs may result in charges in a particular quarter, increasing variability in our quarterly earnings;
- We may not realize the anticipated revenue increase from an acquisition;
- We may be unable to realize the value of the acquired assets relative to the acquisition cost; and
- Acquisitions may distract management from our existing businesses.

These factors could have a material adverse effect on our business, financial condition and operating results. In addition such acquisitions may cause our future quarterly financial results to fluctuate due to costs related to an acquisition, such as the elimination of redundant expenses or write-offs of impaired assets recorded in connection with acquisitions. Also, consideration paid for any future acquisitions could include our stock. As a result, future acquisitions could cause dilution to existing stockholders and to earnings per share, though the likelihood of voting dilution is limited by the ability of the Company to use low-vote Class A common stock as consideration for potential acquisitions. Furthermore, we may incur significant debt to pay for future acquisitions or investments or our use of cash to pay for acquisitions may limit other potential uses of our cash, including stock repurchases, dividend payments and retirement of outstanding indebtedness.

Risks associated with our international operations

Our operations are international in scope, exposing us to additional risk.

We derive over half of our total revenue from sales outside the United States. A significant aspect of our strategy is to focus on developing business in emerging markets. Our operating results could be negatively impacted by a variety of factors affecting our foreign operations, many of which are beyond our control. These factors include currency fluctuations, economic, political or regulatory conditions in a specific country or region, trade protection measures and other regulatory requirements. Additional risks inherent in international business activities generally include, among others:

- Longer accounts receivable collection cycles;

- Costs and difficulties of managing international operations and alliances;
- Greater difficulty enforcing intellectual property rights;
- Import or export requirements;
- Uncertainty regarding regulation, currency, tax, and operations resulting from the Brexit vote that could disrupt the sale of our products and services and the movement of our people between the United Kingdom and the European Union;
- Compliance with multiple, conflicting, ambiguous or evolving governmental laws and regulations, including employment, tax, privacy, anti-corruption, import/export, antitrust, data transfer, storage and protection, and industry-specific laws and regulations, including rules related to compliance by our third-party resellers and our ability to identify and respond timely to compliance issues when they occur; and
- Operating in geographies with a higher inherent risk of corruption, which could adversely affect our ability to maintain compliance with domestic and international laws, including, but not limited to, the U.S. Foreign Corrupt Practices Act and other anti-corruption laws.

We may experience foreign currency gains and losses.

We conduct a portion of our business in currencies other than the United States dollar. Our revenues and operating results may be negatively affected by fluctuations in foreign currency exchange rates. Changes in the value of major foreign currencies, including the euro and Mexican peso, relative to the United States dollar can significantly and adversely affect our revenues, expenses and operating results.

Changes in accounting principles, or interpretations thereof, could have a significant impact on our financial position and results of operations.

We prepare our Consolidated Financial Statements in accordance with accounting principles generally accepted in the United States of America (“GAAP”). A change in these principles can have a significant impact on our reported results and may even retroactively affect previously reported transactions. The adoption of new or revised accounting principles may require that we make significant changes to our systems, processes and controls.

The U.S.-based Financial Accounting Standards Board (“FASB”) is currently working together with the International Accounting Standards Board (“IASB”) on several projects to further align accounting principles and facilitate more comparable financial reporting between companies who are required to follow GAAP under SEC regulations and those who are required to follow International Financial Reporting Standards outside of the United States. These efforts by the FASB and IASB may result in different accounting principles under GAAP that may result in materially different financial results for us. Additionally, significant changes to GAAP resulting from the FASB’s and IASB’s efforts may require that we change how we process, analyze and report financial information and that we change financial reporting controls.

We are exposed to fluctuations in the market values of our investments

Given the global nature of our business, we have investments both domestically and internationally. Credit ratings and market values of these investments can be negatively impacted by liquidity, credit deterioration or losses, financial results, foreign exchange rates, or other factors. As a result, the value or liquidity of our cash equivalents and short-term investments could decline, thus adversely affecting our financial condition and operating results.

The market for our Class A and Class B common stock is volatile

Our stock price could become more volatile and investments could lose value.

The market price of our common stock and the number of shares of each class traded each day has experienced significant fluctuations and may continue to fluctuate significantly. The market price for our common stock may be affected by a number of factors, including, but not limited to:

- Shortfalls in our expected net revenue, earnings or key performance metrics;
- Changes in recommendations or estimates by securities analysts;
- The announcement of new products by us or our competitors;
- Quarterly variations in our or our competitors' results of operations;
- A change in our dividend or stock repurchase activities;
- Developments in our industry or changes in the market for technology stocks;
- Changes in rules or regulations applicable to our business; and
- Other factors, including economic instability and changes in political or market conditions.

The dual class structure of our common stock as contained in our charter documents could adversely impact the market for our common stock.

Our dual-class stock structure could adversely impact the market for our stock. The liquidity of our common stock may be adversely impacted by our dual-class structure because each class has less of a public float than it would if we had a single class of common stock. In addition, there are fewer Class B shares than Class A shares and Class B shares may be less desirable to the public due to the 20% higher dividend on Class A shares. Also, the holding of lower voting Class A common stock may not be permitted by the investment policies of certain institutional investors or may be less attractive to managers of certain institutional investors.

If research analysts do not publish research about our business or if they issue unfavorable commentary or downgrade our common stock, our stock price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that research analysts publish about us and our business. If we do not maintain adequate research coverage, or if one or more analysts who covers us downgrades our stock or publishes inaccurate or unfavorable research about our business, the price of our common stock could decline. If one or more of the research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our common stock could decrease, which could cause our stock price or trading volume to decline.

We are obligated to maintain proper and effective internal control over financial reporting. We may not complete our analysis of our internal control over financial reporting in a timely manner, or this internal control may not be determined to be effective, which may adversely affect investor confidence in our company and, as a result, the value of our common stock.

We are required, pursuant to the Securities and Exchange Act of 1934, as amended (the "Exchange Act"), to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. This assessment includes disclosure of any material weaknesses identified by our management in our internal control over financial reporting, as well as a statement that our auditors have issued an attestation report on our internal controls.

While we were able to determine in our management's report for fiscal 2019 that our internal control over financial reporting is effective, as well as provide an unqualified attestation report from our independent registered public accounting firm to that effect, we may not be able to complete our evaluation, testing, and any required remediation in a timely fashion or our independent registered public accounting firm may not be able to formally attest to the effectiveness of our internal control over financial reporting in the future. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting that we are unable to remediate before the end of the same fiscal year in which the material weakness is identified, we will be unable to assert that our internal controls are effective. If we are unable to assert that our internal control over financial reporting is effective, or if our auditors are unable to attest to the effectiveness of our internal controls or determine we have a material weakness in our internal controls, we could lose investor confidence in the accuracy and completeness of our financial reports, which could cause the price of our common stock to decline.

If we are unable to pay quarterly dividends, our reputation and stock price may be harmed.

Our payment of dividends may require the use of a significant portion of our cash earnings. As a result, we may not retain a sufficient amount of cash to fund our operations or finance future growth opportunities, new product development initiatives and unanticipated capital expenditures which could adversely affect our financial performance. Additionally, our board of directors may, at its discretion, decrease or entirely discontinue the payment of dividends at any time. Our ability to pay dividends will depend on our ability to generate sufficient cash flows from operations in the future. This ability may be subject to certain economic, financial, competitive and other factors that are beyond our control. Any failure to pay dividends may negatively impact our reputation and investor confidence in us and may negatively impact the price of our common stock.

Our common stock ownership is concentrated

The dual class structure of our common stock as contained in our charter documents has the effect of concentrating voting control with certain stockholders, including Pamela Lopker, thus limiting our other stockholders' ability to influence corporate matters.

Our Class B common stock has one vote per share and our Class A common stock has 1/20th vote per share. Stockholders who hold shares of our Class B common stock together held approximately 80% of the voting power of our outstanding capital stock as of January 31, 2019. As of January 31, 2019, Pamela Lopker beneficially owned approximately 40% of the outstanding shares of our Class A and Class B common stock, representing approximately 67% of the voting power of our outstanding capital stock. Currently she has sufficient voting control to determine the outcome of a stockholder vote concerning:

- The election and removal of all members of our board of directors;
- The merger, consolidation or sale of the Company or all of our assets; and
- All other matters requiring stockholder approval, regardless of how our other stockholders vote their shares.

In addition, the holders of our Class B common stock collectively will continue to be able to control all matters submitted to our stockholders for approval even if their stock holdings represent less than 50% of the outstanding shares of our common stock. Because of the 20-to-1 voting ratio between our Class B and Class A common stock, the holders of our Class B common stock collectively will continue to control a majority of the combined voting power of our common stock even when the shares of Class B common stock represent as little as 5% of all outstanding shares of our Class A common stock. This concentrated control will limit the ability of our Class A stockholders to influence corporate matters for the foreseeable future, and, as a result, the market price of our Class A common stock could be adversely affected.

This concentrated control limits the ability of our other stockholders to influence corporate matters and also limits the liquidity of the shares owned by other stockholders. Should the interests of Pamela Lopker differ from those of other stockholders, the other stockholders may not be afforded the protections of having a majority of directors on the board who are independent from our principal stockholders or our management. For example, Pamela Lopker's concentrated control could discourage others from initiating potential merger, takeover or other change of control transactions; and, transactions could be pursued that our other stockholders do not view as beneficial. As a result, the market price of our Class A and Class B common stock could be adversely affected.

We are not required to comply with certain corporate governance rules of NASDAQ, that would otherwise apply to us as a company listed on NASDAQ, because we are a controlled company.

Specifically, we are not required to have a majority of independent directors or a compensation committee comprised solely of independent directors; select, or recommend for the board's selection, director nominees by a majority of independent directors or a nominating committee comprised solely of independent directors; determine officer compensation by a compensation committee comprised solely of independent directors or by a majority of the board upon recommendation of a compensation committee comprised solely of independent directors; and satisfy certain responsibilities of the compensation committee prior to retaining or receiving advice from a compensation consultant, legal counsel or other advisor to the compensation committee.

Provisions in the Company's charter documents or Delaware law could discourage a takeover that stockholders may consider favorable.

Our Certificate of Incorporation contains certain other provisions that may have an "anti-takeover" effect. The Certificate of Incorporation contains authority for the Board to issue up to 5,000,000 shares of preferred stock without stockholder approval. Although the Company has no present intention to issue any such shares, we could issue such shares in a manner that deters or seeks to prevent an unsolicited bid for us. The Certificate of Incorporation also does not provide for cumulative voting and, accordingly, a significant minority stockholder could not necessarily elect any designee to the board of directors. In addition, Section 203 of the Delaware Corporation Law may discourage, delay, or prevent a change in control of us by imposing certain restrictions on various business combinations. Furthermore, our dual class structure concentrates the voting power of our stock in a small group of stockholders who would have the ability to control the outcome of a stockholder vote. As a result of these provisions in the Company's Certificate of Incorporation, including our dual class structure, and Delaware law, our stockholders may be deprived of an opportunity to sell their shares at a premium over prevailing market prices and it would be more difficult to replace our directors and management.

We are dependent upon highly skilled personnel

Our performance depends on the talents and efforts of highly skilled employees, including the continued service of a relatively small number of key technical and senior management personnel. In particular, our Chairman of the Board and President, Pamela Lopker, and Chief Executive Officer, Anton Chilton, are critical to overall management of QAD, maintenance of our culture and setting our strategic direction. All of our executive officers and key employees are at-will employees and we do not have key-person insurance covering any of our employees. Our future success depends on our continuing ability to attract and retain highly skilled personnel in all areas of our organization. Competition for such personnel is intense and many of our competitors are larger and have greater financial resources for attracting skilled personnel. The loss of key technical and senior management personnel or the inability to attract and retain additional qualified personnel could have an adverse effect on our continued ability to compete effectively.

We have hired personnel in countries where advanced technical expertise and other expertise are available at lower costs to improve our cost structure. We may experience competition for employees in these countries, which may negatively affect our employee retention efforts and increase our expenses in an effort to offer a competitive compensation program.

Catastrophic events may disrupt our business

Our corporate headquarters, including network infrastructure, internal technology systems and certain of our research and development activities, is located in Southern California, a region susceptible to fires, mudslides and seismic activity. Additionally, certain of our other facilities and those of our suppliers and third-party data hosting services, may be located in regions affected by natural disasters. Our corporate headquarters has been disrupted in the past, and any of the aforementioned facilities, suppliers and hosting services may be disrupted in the future, by significant natural disasters. Such a natural disaster, as well as a terrorist attack, cyber-attack, war or other catastrophic event, may result in power loss, telecommunications failure, loss of access to the Internet, software or hardware malfunction, or physical access restrictions that our disaster recovery plans do not adequately address. This could result in system interruptions, loss of intellectual property, delays in our product development, interruptions in our customer services, breaches of data security and loss of critical data, which may have a material adverse effect on our business, operating results and financial condition, and negatively impact our reputation.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

QAD's corporate headquarters are located in Santa Barbara, California. The corporate headquarters are owned by QAD and consist of approximately 120,000 square feet situated on 28 acres of land.

In addition to the corporate headquarters, QAD owns a facility in Dublin, Ireland and leases over 25 offices throughout the world with lease agreements ending on various dates through fiscal year 2028. QAD's leased properties include offices in the United States, Belgium, France, Germany, Ireland, Italy, Poland, Spain, The Netherlands, United Kingdom, Australia, China, India, Indonesia, Japan, Singapore, Thailand, Brazil and Mexico. QAD will seek to review lease commitments in the future as may be required. QAD anticipates that its current domestic and international facilities are substantially sufficient to meet its needs for at least the next twelve months.

ITEM 3. LEGAL PROCEEDINGS

We are not party to any material legal proceedings. We are from time to time party, either as plaintiff or defendant, to various legal proceedings and claims which arise in the ordinary course of business. While the outcome of these claims cannot be predicted with certainty, management does not believe that the outcome of any of these legal matters will have a material adverse effect on our consolidated financial position or results of operations.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

QAD Class A Common Stock and Class B Common Stock are traded on the NASDAQ under the symbols "QADA" and "QADB", respectively. The following table reflects the range of high and low sale prices of our Common Stock as reported by NASDAQ:

	QADA		QADB	
	Low Price	High Price	Low Price	High Price
Fiscal 2019:				
Fourth quarter	\$ 38.39	\$ 48.04	\$ 29.50	\$ 35.00
Third quarter	40.91	61.80	28.35	49.40
Second quarter	44.45	55.35	32.07	44.24
First quarter	39.33	50.35	27.00	36.75

	QADA		QADB	
	Low Price	High Price	Low Price	High Price
Fiscal 2018:				
Fourth quarter	\$ 34.90	\$ 43.40	\$ 26.72	\$ 34.00
Third quarter	30.25	38.10	21.58	30.80
Second quarter	29.40	33.40	24.21	27.13
First quarter	26.04	30.95	21.38	26.09

Holders

As of March 31, 2019, there were approximately 144 shareholders of record of our Class A common stock and approximately 129 shareholders of record of our Class B common stock. Because many of our shares of common stock are held by brokers or other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by the record holders.

Dividends

We declared four quarterly cash dividends in fiscal 2019 of \$0.072 and \$0.06 per share of Class A and Class B stock, respectively. Continuing quarterly cash dividends are subject to profitability measures, liquidity requirements of QAD and Board discretion.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

None.

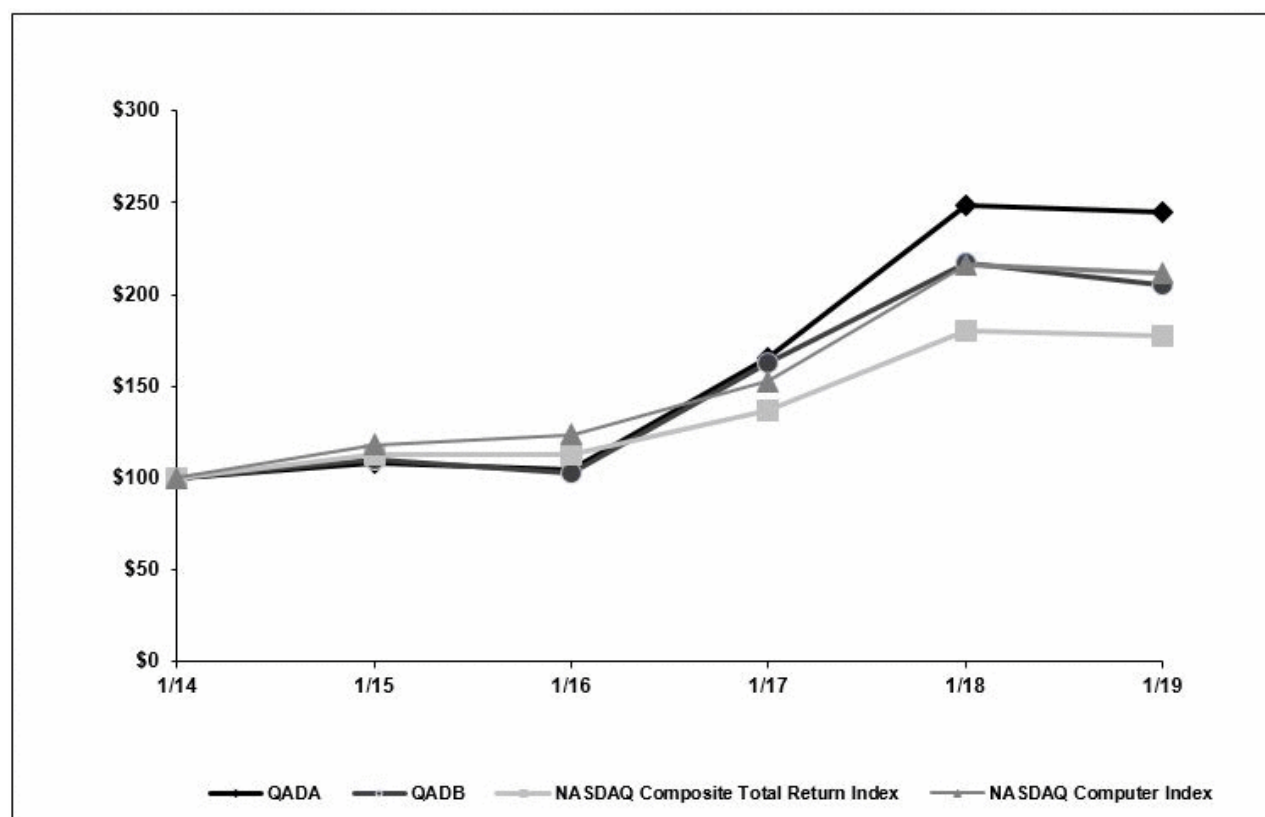
STOCKHOLDER RETURN PERFORMANCE GRAPH

The line graph below compares the annual percentage change in the cumulative total stockholder return on QAD's common stock with the cumulative total return of the NASDAQ Composite Total Return Index and the NASDAQ Computer Index, on an annual basis, for the period beginning January 31, 2014 and ending January 31, 2019.

The graph assumes that \$100 was invested in QAD common stock on January 31, 2014 and that all dividends were reinvested. Historic stock price performance should not be considered indicative of future stock price performance.

The following Share Performance Graph shall not be deemed to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filings under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that the Company specifically incorporates it by reference into such filing.

COMPARISON OF CUMULATIVE TOTAL RETURN AMONG QAD INC., THE NASDAQ COMPOSITE TOTAL RETURN INDEX, AND THE NASDAQ COMPUTER INDEX



Measurement Periods (Annually from Fiscal Year 2014 through Fiscal Year 2019)	QADA	QADB	NASDAQ Composite Total Return Index	NASDAQ Computer Index
01/31/14	100.00	100.00	100.00	100.00
01/31/15	107.90	109.70	112.95	118.31
01/31/16	104.51	102.68	112.43	123.63
01/31/17	165.27	162.47	136.82	152.88
01/31/18	248.58	217.58	180.60	216.12
01/31/19	244.65	205.23	177.44	211.53

ITEM 6. SELECTED FINANCIAL DATA

	Years Ended January 31,				
	2019 (1)	2018 (2)	2017 (3)	2016 (4)	2015 (5)
	(in thousands, except per share data)				
STATEMENTS OF OPERATIONS DATA:					
Revenues:					
Subscription Fees	\$ 91,861	\$ 69,615	\$ 52,167	\$ 38,806	\$ 28,217
License fees	25,568	25,807	23,633	29,891	40,917
Maintenance and other	122,936	128,142	130,406	132,962	141,295
Professional services	92,651	81,454	71,767	76,193	84,672
Total revenue	333,016	305,018	277,973	277,852	295,101
Operating income (loss)	9,573	(3,074)	3,364	10,171	15,985
Net income (loss)	\$ 10,428	\$ (9,065)	\$ (15,450)	\$ 8,912	\$ 12,946
Basic net income (loss) per share:					
Class A	\$ 0.55	\$ (0.49)	\$ (0.84)	\$ 0.49	\$ 0.84
Class B	\$ 0.46	\$ (0.41)	\$ (0.70)	\$ 0.41	\$ 0.70
Diluted net income (loss) per share:					
Class A	\$ 0.50	\$ (0.49)	\$ (0.84)	\$ 0.47	\$ 0.79
Class B	\$ 0.44	\$ (0.41)	\$ (0.70)	\$ 0.40	\$ 0.68
Dividends declared per common share:					
Class A	\$ 0.29	\$ 0.29	\$ 0.29	\$ 0.29	\$ 0.29
Class B	\$ 0.24	\$ 0.24	\$ 0.24	\$ 0.24	\$ 0.24
BALANCE SHEET AND CASH FLOW DATA:					
Cash and equivalents	139,413	147,023	145,082	137,731	120,526
Working capital	78,350	70,960	80,351	86,791	69,757
Total assets	317,174	299,817	280,890	287,341	282,151
Current portion of long-term debt	487	466	446	422	406
Long-term debt	12,836	13,313	13,767	14,191	14,603
Total stockholders' equity	133,247	105,628	112,686	128,006	110,565
Cash provided by operations	19,007	10,418	18,680	24,057	23,963

- (1) Fiscal year 2019 net income includes a \$1.3 million reversal of the 2017 Tax Reform Act (the "Tax Act") estimated tax liability recorded in fiscal year 2018.
- (2) Fiscal year 2018 net loss includes a \$2.0 million estimated tax liability, representing the Company's best estimate of the impact of the Tax Act in accordance with QAD's understanding of the Tax Act and the related guidance available.
- (3) Fiscal year 2017 includes placement of a valuation allowance of \$16.3 million against U.S. federal and state net deferred tax assets.
- (4) Fiscal year 2016 includes an issuance of 450,000 shares of Class A common stock at \$20.00 per share for net proceeds to the Company of \$8.4 million after deduction of offering expenses as a result of an option to purchase additional shares exercised in full by the underwriters related to the stock issuance described in note (5) below.
- (5) Fiscal year 2015 includes an issuance of 2,000,000 shares of Class A common stock at \$20.00 per share for net proceeds to the Company of \$37.0 million after deducting offering expenses.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

INTRODUCTION

The following discussion should be read in conjunction with our Consolidated Financial Statements and Notes to Consolidated Financial Statements included in Item 15 of this Annual Report on Form 10-K.

BUSINESS OVERVIEW

QAD ("QAD", the "Company", "we" or "us") is a leading provider of flexible, cloud-based enterprise software and services for global manufacturing companies. QAD Enterprise Applications support operational requirements in the areas of financials, customer management, supply chain, manufacturing, service and support, analytics, business process management and integration. QAD's portfolio also includes related solutions for quality management software, supply chain management software, transportation management software and business-to-business interoperability. QAD solutions support customers in the automotive, consumer products, food and beverage, high technology, industrial manufacturing and life sciences industries to streamline processes, improve operational performance, comply with regulatory requirements and meet industry standards.

We have four principal sources of revenue:

- Subscription of Enterprise Applications through our cloud offering in a Software as a Service ("SaaS") model as well as other hosted applications;
- License purchases of Enterprise Applications;
- Maintenance and support, including technical support, training materials, product enhancements and upgrades; and
- Professional services, including implementations, technical and application consulting, training, migrations and upgrades.

We operate primarily in the following four geographic regions: North America, Latin America, EMEA and Asia Pacific. In fiscal 2019, approximately 48% of our total revenue was generated in North America, 30% in EMEA, 15% in Asia Pacific and 7% in Latin America. The majority of our revenue is generated from global customers who have operations in multiple countries throughout the world. A significant portion of our revenue and expenses are derived from international operations which are primarily conducted in foreign currencies. As a result, changes in the value of foreign currencies relative to the U.S. dollar have impacted our results of operations and may impact our future results of operations. At January 31, 2019, we employed approximately 1,970 employees worldwide, of which 650 employees were based in North America, 610 employees in EMEA, 600 employees in Asia Pacific and 110 employees in Latin America.

Our customer base and our target markets are primarily global manufacturing companies; therefore, our results are heavily influenced by the state of the manufacturing economy on a global basis. As a result, our management team monitors several economic indicators, with particular attention to the Global and Country Purchasing Managers' Indexes ("PMI"). The PMI is a survey conducted on a monthly basis by polling businesses that represent the makeup of respective sectors. Since most of our customers are manufacturers, our revenue has historically correlated with fluctuations in the manufacturing PMI. Global macro-economic trends and manufacturing spending are important barometers for our business, and the health of the U.S., Western European and Asian economies have a meaningful impact on our financial results.

We are transitioning our business model from selling perpetual licenses to providing access to our software on a subscription basis as part of our cloud offering. During fiscal 2019, we closed most of our new customer deals in the cloud. In addition, we converted many of our existing customers from on-premises licenses to our cloud based solution. Recurring revenue, which we define as subscription revenue plus maintenance revenue, accounted for 65% of total revenue for fiscal 2019. By reducing our customers' up-front costs and providing continuous application and infrastructure support, we expect our cloud business model will be more attractive than perpetual licenses. We expect recurring revenue to remain a majority of total revenue as our subscription revenue continues to grow.

RESULTS OF OPERATIONS

We operate in several geographical regions as described in Note 12 “Business Segment Information” within the Notes to Consolidated Financial Statements. In order to present our results of operations without the effects of changes in foreign currency exchange rates, we provide certain financial information on a “constant currency basis”, which is in addition to the actual financial information presented in the following tables. In order to calculate our constant currency results, we apply the current foreign currency exchange rates to the prior period results.

Revenue

(in thousands)	Year Ended January 31, 2019	Year Ended January 31, 2018	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
					\$	%
Revenue						
Subscription fees	\$ 91,861	\$ 69,615	\$ 22,398	\$ (152)	\$ 22,246	32%
Percentage of total revenue	28%	23%				
License fees	25,568	25,807	(293)	54	(239)	-1%
Percentage of total revenue	7%	8%				
Maintenance and other	122,936	128,142	(5,914)	708	(5,206)	-4%
Percentage of total revenue	37%	42%				
Professional services	92,651	81,454	11,349	(152)	11,197	14%
Percentage of total revenue	28%	27%				
Total revenue	<u>\$ 333,016</u>	<u>\$ 305,018</u>	<u>\$ 27,540</u>	<u>\$ 458</u>	<u>\$ 27,998</u>	9%

(in thousands)	Year Ended January 31, 2018	Year Ended January 31, 2017	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
					\$	%
Revenue						
Subscription fees	\$ 69,615	\$ 52,167	\$ 17,060	\$ 388	\$ 17,448	33%
Percentage of total revenue	23%	19%				
License fees	25,807	23,633	1,746	428	2,174	9%
Percentage of total revenue	8%	8%				
Maintenance and other	128,142	130,406	(3,615)	1,351	(2,264)	-2%
Percentage of total revenue	42%	47%				
Professional services	81,454	71,767	8,927	760	9,687	13%
Percentage of total revenue	27%	26%				
Total revenue	<u>\$ 305,018</u>	<u>\$ 277,973</u>	<u>\$ 24,118</u>	<u>\$ 2,927</u>	<u>\$ 27,045</u>	10%

Total Revenue. On a constant currency basis, total revenue was \$333.0 million for fiscal 2019, representing a \$27.5 million, or 9%, increase from \$305.5 million for fiscal 2018. When comparing categories within total revenue at constant rates, our results for fiscal 2019 included increases in subscription and professional services revenue partially offset by a decrease in license and maintenance and other revenue. In fiscal 2019, one customer accounted for 10% of total revenue and no other customer accounted for 10% or more of total revenue. In fiscal 2018 and 2017, no single customer accounted for more than 10% of total revenue. Revenue outside the North America region as a percentage of total revenue was 52% and 54% for fiscal 2019 and 2018, respectively. On a constant currency basis, total revenue increased across all regions during fiscal 2019 when compared to the prior year. Our products are sold to manufacturing companies that operate mainly in the following six industries: automotive, consumer products, food and beverage, high technology, industrial products and life sciences. Given the similarities between consumer products and food and beverage as well as between high technology and industrial products, we aggregate them for management review. The following table presents revenue by industry for fiscal 2019, 2018 and 2017:

	Years Ended January 31,		
	2019	2018	2017
Automotive	39%	37%	35%
Consumer products and food and beverage	16%	16%	16%
High technology and industrial products	31%	33%	33%
Life sciences and other	14%	14%	16%
Total revenue	<u>100%</u>	<u>100%</u>	<u>100%</u>

On a constant currency basis, total revenue was \$305.0 million for fiscal 2018, representing a \$24.1 million, or 9%, increase from \$280.9 million for fiscal 2017. When comparing categories within total revenue at constant rates, our results for fiscal 2018 included increases in subscription, license and professional services revenue partially offset by a decrease in maintenance and other revenue. Revenue outside the North America region as a percentage of total revenue was 54% and 53% for fiscal 2018 and 2017, respectively. On a constant currency basis, total revenue increased across all regions during fiscal 2018 when compared to fiscal 2017.

Subscription Revenue. Subscription revenue consists of recurring fees from customers to access our products via the cloud and other subscription offerings. Our cloud offerings typically include access to QAD software, hosting, application support, maintenance support and product updates, if and when available. Included in subscription revenue are one-time set up fees for technical services such as configuration of the database and access to the environment.

On a constant currency basis, subscription revenue was \$91.9 million for fiscal 2019, representing a \$22.4 million, or 32%, increase from \$69.5 million for fiscal 2018. Our subscription revenue represented 28% and 23% of our total revenue in fiscal 2019 and 2018, respectively. On a constant currency basis, subscription revenue increased across all regions during fiscal 2019 when compared to the prior year. One of the metrics that management uses to monitor subscription performance is the number of new cloud deals that have been signed in the period. In fiscal 2019 we closed 67 new cloud deals, including 41 new cloud customers and 26 conversions from existing customers who previously purchased on-premises licenses. This compared to fiscal 2018 when we closed 65 new cloud deals, including 37 new cloud customers and 28 conversions from existing customers who previously purchased on-premises licenses. The increase in subscription revenue consists of new customer sites; existing Enterprise Applications users converting from on-premises; and additional users and modules purchased by our existing cloud customers.

The following table presents subscription revenue by region for fiscal 2019, 2018 and 2017:

	Years Ended January 31,		
	2019	2018	2017
North America	56%	54%	60%
EMEA	27%	24%	17%
Asia Pacific	12%	14%	15%
Latin America	5%	8%	8%
Total subscription revenue	100%	100%	100%

The following table presents subscription revenue by industry for fiscal 2019, 2018 and 2017:

	Years Ended January 31,		
	2019	2018	2017
Automotive	33%	35%	39%
Consumer products and food and beverage	18%	15%	15%
High technology and industrial products	24%	23%	18%
Life sciences and other	25%	27%	28%
Total subscription revenue	100%	100%	100%

On a constant currency basis, subscription revenue was \$69.6 million for fiscal 2018, representing a \$17.0 million, or 32%, increase from \$52.6 million for fiscal 2017. On a constant currency basis, subscription revenue increased in our North America, EMEA and Asia Pacific regions and remained relatively flat in our Latin America region during fiscal 2018 when compared to the prior year.

We track our retention rate of subscription and maintenance by calculating the annualized revenue of customer sites with contracts up for renewal during the period compared to the annualized revenue associated with the customer sites that have canceled during the period. The percentage of revenue not canceled is our retention rate. Conversions to the cloud are not considered cancellations for purposes of this calculation. Our subscription customer retention rate is in excess of 90% in each of the fiscal years 2019, 2018 and 2017.

License Revenue. License revenue is derived from software license fees that customers pay for our core product, QAD Enterprise Applications, and any add-on modules they purchase. Our revenue mix has continued to shift from license to subscription revenue as a result of our business model transition as more new customers subscribe to our cloud based offerings rather than purchase perpetual licenses. While we expect license revenue to decline over time, we do continue to experience quarterly fluctuations.

On a constant currency basis, license revenue was \$25.6 million for fiscal 2019, representing a \$0.3 million, or 1%, decrease from \$25.9 million for fiscal 2018. On a constant currency basis, license revenue decreased in our North America region and increased in our Latin America, Asia Pacific and EMEA regions during fiscal 2019 when compared to the prior year. During fiscal 2019, 14 customers placed license orders totaling more than \$0.3 million, two of which exceeded \$1.0 million. This compared to fiscal 2018 in which 15 customers placed license orders totaling more than \$0.3 million, two of which exceeded \$1.0 million. The majority of our license revenue has come from additional users and module purchases from our existing customers, which we believe is a result of a strong global manufacturing environment.

On a constant currency basis, license revenue was \$25.8 million for fiscal 2018, representing a \$1.7 million, or 7%, increase from \$24.1 million for fiscal 2017. On a constant currency basis, license revenue increased in our North America and Asia Pacific regions, and decreased in our EMEA and Latin America regions during fiscal 2018 when compared to fiscal 2017. During fiscal 2018, 15 customers placed license orders totaling more than \$0.3 million, two of which exceeded \$1.0 million. This compared to fiscal 2017 in which 15 customers placed license orders totaling more than \$0.3 million, two of which exceeded \$1.0 million.

Maintenance and Other Revenue. We offer support services 24 hours a day, seven days a week in addition to providing software upgrades, which include additional or improved functionality, when and if available.

On a constant currency basis, maintenance and other revenue was \$122.9 million for fiscal 2019, representing a \$6.0 million, or 5%, decrease from \$128.9 million for fiscal 2018. On a constant currency basis, maintenance and other revenue decreased across all regions during fiscal 2019 when compared to the prior year. The decrease in maintenance and other revenue was primarily due to continued conversions of existing customers' perpetual licenses to cloud subscription, in addition to our historical attrition rates. When customers convert to the cloud they no longer pay for maintenance as those support services are included as a component of the subscription offering. Though we continue to see renewal rates above 90%, conversions from on-premises to cloud have resulted in decreases in maintenance revenue and we expect this trend to continue in the future.

On a constant currency basis, maintenance and other revenue was \$128.1 million for fiscal 2018, representing a \$3.7 million, or 3%, decrease from \$131.8 million for fiscal 2017. On a constant currency basis, maintenance and other revenue decreased in our North America, EMEA and Asia Pacific regions and increased in our Latin America region during fiscal 2018 when compared to the prior year.

Over the last three years, our maintenance retention rate has remained in excess of 90%.

Professional Services Revenue. Our professional services business includes technical and application consulting in addition to training, implementations, migrations and upgrades related to our solutions. Although our professional services are optional, our customers use these services when planning, implementing or upgrading our solutions whether in the cloud or on-premises. Professional services revenue growth is contingent upon subscription and license revenue growth and customer upgrade cycles, which are influenced by the strength of general economic and business conditions.

On a constant currency basis, professional services revenue was \$92.7 million for fiscal 2019, representing an \$11.4 million, or 14%, increase from \$81.3 million for fiscal 2018. On a constant currency basis, professional services revenue increased in our North America, Latin America and EMEA regions and remained relatively flat in our Asia Pacific region during fiscal 2019 when compared to the prior year. The increase in professional services revenue period over period can be attributed to personnel augmentation services we performed for one of our cloud customers, mainly through third-party contractors at low margins. For fiscal 2019, personnel augmentation services revenue was \$7.3 million, compared to \$1.1 million for fiscal 2018. Augmentation services consists of providing our employees or third party contractors to assist the customer with the implementation tasks the customer needs performed by supplementing their workforce. In addition, fiscal 2019 results reflected a higher amount of revenue per customer and a higher number of engagements compared to the prior year.

On a constant currency basis, professional services revenue was \$81.5 million for fiscal 2018, representing a \$9.0 million, or 12%, increase from \$72.5 million for fiscal 2017. On a constant currency basis, professional services revenue increased across all regions during fiscal 2018 when compared to the prior year. The increase in professional services revenue period over period can be attributed to a higher amount of professional services revenue per customer.

Total Cost of Revenue

(in thousands)	Year Ended January 31, 2019	Year Ended January 31, 2018	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
					\$	%
Cost of revenue						
Cost of subscription	\$ 34,128	\$ 30,563	\$ (3,594)	\$ 29	\$ (3,565)	-12%
Cost of license	2,714	2,946	230	2	232	8%
Cost of maintenance and other	31,307	31,246	(173)	112	(61)	0%
Cost of professional services	87,735	84,670	(3,280)	215	(3,065)	-4%
Total cost of revenue	<u>\$ 155,884</u>	<u>\$ 149,425</u>	<u>\$ (6,817)</u>	<u>\$ 358</u>	<u>\$ (6,459)</u>	-4%
Percentage of revenue	47%	49%				

(in thousands)	Year Ended January 31, 2018	Year Ended January 31, 2017	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
					\$	%
Cost of revenue						
Cost of subscription	\$ 30,563	\$ 27,027	\$ (3,449)	\$ (87)	\$ (3,536)	-13%
Cost of license	2,946	2,990	45	(1)	44	1%
Cost of maintenance and other	31,246	30,517	(452)	(277)	(729)	-2%
Cost of professional services	84,670	70,317	(13,500)	(853)	(14,353)	-20%
Total cost of revenue	<u>\$ 149,425</u>	<u>\$ 130,851</u>	<u>\$ (17,356)</u>	<u>\$ (1,218)</u>	<u>\$ (18,574)</u>	-14%
Percentage of revenue	49%	47%				

Total cost of revenue consists of cost of subscription, cost of license, cost of maintenance and other and cost of professional services. Cost of subscription includes salaries, benefits, bonuses and other personnel expenses of our cloud operations employees; stock-based compensation for those employees; third-party contractor expense, third-party hosting and hardware costs; royalties; professional fees; travel expense; and an allocation of information technology and facilities costs. Cost of license includes license royalties and amortization of capitalized software costs. Cost of maintenance and other includes salaries, benefits, bonuses and other personnel expenses of our support group, stock-based compensation for those employees, travel expense, professional fees and an allocation of information technology and facilities costs. Cost of professional services includes salaries, benefits, bonuses and other personnel expenses of our services employees, stock-based compensation for those employees, third-party contractor expense, travel expense and an allocation of information technology and facilities costs.

Total Cost of Revenue. On a constant currency basis, total cost of revenue was \$155.9 million and \$149.1 million for fiscal 2019 and 2018, respectively and as a percentage of total revenue was 47% for fiscal 2019 and 49% for fiscal 2018. The decrease in total cost of revenue as a percentage of total revenue was due to improved subscription and professional services margins. The non-currency related increase in cost of revenue of \$6.8 million, or 5%, in fiscal 2019 compared to fiscal 2018 was primarily due to higher hosting and personnel costs associated with the increase in subscription revenue and higher third-party contractor costs, travel and personnel costs, associated with increased professional services revenue.

On a constant currency basis, total cost of revenue was \$149.4 million and \$132.1 million for fiscal 2018 and 2017, respectively and as a percentage of total revenue was 49% for fiscal 2018 and 47% for fiscal 2017. The increase in total cost of revenue as a percentage of total revenue was mainly due to lower professional services margins and the shift of our revenue mix from maintenance to subscription. The non-currency related increase in cost of revenue of \$17.3 million, or 13%, in fiscal 2018 compared to fiscal 2017 was primarily due to higher hosting and personnel costs associated with the increase in subscription revenue and higher third-party contractor, travel and personnel costs associated with increased professional services revenue.

Cost of Subscription. On a constant currency basis, cost of subscription was \$34.1 million for fiscal 2019, representing a \$3.6 million, or 12%, increase from \$30.5 million for fiscal 2018. The non-currency related increase in cost of subscription of \$3.6 million in fiscal 2019 compared to fiscal 2018 was primarily due to higher hosting costs of \$3.1 million and higher salaries and related costs of \$0.6 million as a result of higher headcount of approximately 30 people. Cost of subscription as a percentage of subscription revenue was 37% and 44% in fiscal 2019 and 2018, respectively. We have continued to improve our subscription margins over time due to leveraging of ongoing economies of scale and implementing operational efficiencies. We have experienced and may experience in the future quarterly fluctuations in our subscription margins as we make investments in our data centers and cloud operations to support future growth. Our strategic investments in cloud growth may not match the timing of revenue increases.

On a constant currency basis, cost of subscription was \$30.6 million for fiscal 2018, representing a \$3.5 million, or 13%, increase from \$27.1 million for fiscal 2017. The non-currency related increase in cost of subscription of \$3.5 million in fiscal 2018 compared to fiscal 2017 was primarily due to higher hosting costs of \$2.5 million, higher salaries and related costs of \$0.8 million as a result of higher headcount of approximately 9 people and higher third-party contractor costs of \$0.4 million. These costs were partially offset by \$0.8 million of personnel costs cross charged to our services department to support conversion and upgrade projects. Cost of subscription as a percentage of subscription revenue was 44% and 52% in fiscal 2018 and 2017, respectively.

Cost of License. On a constant currency basis, cost of license was \$2.7 million for fiscal 2019, representing a \$0.2 million, or 7%, decrease from \$2.9 million for fiscal 2018. A majority of cost of license was royalty expense, which as a percent of license revenue, remained relatively consistent year over year.

On a constant currency basis, cost of license was \$2.9 million for fiscal 2018, representing a \$0.1 million, or 3%, decrease from \$3.0 million for fiscal 2017. A majority of cost of license was royalty expense, which as a percent of license revenue, remained relatively consistent year over year.

Cost of Maintenance and Other. On a constant currency basis, cost of maintenance and other was \$31.3 million for fiscal 2019, representing a \$0.2 million, or 1%, increase from \$31.1 million for fiscal 2018. The non-currency related increase in cost of maintenance and other of \$0.2 million in fiscal 2019 compared to fiscal 2018 was primarily due to personnel costs. Cost of maintenance and other as a percentage of maintenance and other revenue was 25% and 24% in fiscal 2019 and 2018, respectively.

On a constant currency basis, cost of maintenance and other was \$31.2 million for fiscal 2018, representing a \$0.4 million, or 1%, increase from \$30.8 million for fiscal 2017. The non-currency related increase in cost of maintenance and other of \$0.4 million in fiscal 2018 compared to fiscal 2017 was due to higher personnel costs of \$0.4 million. Cost of maintenance and other as a percentage of maintenance and other revenue was 24% and 23% in fiscal 2018 and 2017, respectively.

Cost of Professional Services. On a constant currency basis, cost of professional services was \$87.7 million for fiscal 2019, representing a \$3.2 million, or 4%, increase from \$84.5 million for fiscal 2018. The non-currency related increase in cost of professional services of \$3.2 million was primarily due to higher third-party contractor costs of \$1.6 million, higher travel of \$1.3 million and higher salaries and related costs of \$1.1 million partially offset by lower bonuses of \$0.5 million and lower severance of \$0.3 million. The increase in salaries and related costs was the result of the addition of 40 services people hired in relation to the acquisition of our Indonesian distributor's assets, partially offset by a reduction of 20 people in our existing business.

Cost of professional services as a percentage of professional services revenue was 95% for fiscal 2019 and 104% for fiscal 2018. We increased our services capacity by adding headcount and partners in fiscal 2018 in order to fulfill additional projects. The investment in hiring and training additional services personnel negatively impacted our professional services margins in fiscal 2018, but as utilization of those additional resources has increased, our professional services margins has improved. Our professional services margins have historically ranged from about breakeven to 10%. We believe we offer competitive rates and view our professional services organization as a department supporting the implementation and deployment of our products which improves the overall customer experience.

On a constant currency basis, cost of professional services was \$84.7 million for fiscal 2018, representing a \$13.5 million, or 19%, increase from \$71.2 million for fiscal 2017. The non-currency related increase in cost of professional services of \$13.5 million was primarily due to higher salaries and related costs of \$4.4 million, as a result of higher headcount of approximately 87 people, higher third-party contractor costs of \$3.6 million, higher bonuses of \$1.3 million, higher travel of \$1.5 million and higher information technology and facilities allocated costs of \$0.7 million. In addition, cost of professional services included higher personnel costs from other departments of \$1.2 million related to employees who worked on services engagements. Cost of professional services as a percentage of professional services revenue was 104% for fiscal 2018 and 98% for fiscal 2017.

Sales and Marketing

	Year Ended January 31, 2019	Year Ended January 31, 2018	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
(in thousands)					\$	%
Sales and marketing	\$ 78,207	\$ 75,368	\$ (2,709)	\$ (130)	\$ (2,839)	-4%
Percentage of revenue	23%	25%				

	Year Ended January 31, 2018	Year Ended January 31, 2017	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
(in thousands)					\$	%
Sales and marketing	\$ 75,368	\$ 67,194	\$ (7,571)	\$ (603)	\$ (8,174)	-12%
Percentage of revenue	25%	24%				

Sales and marketing expense includes salaries, benefits, commissions, bonuses, stock-based compensation, travel expense and other personnel costs of our sales and marketing employees in addition to costs of programs aimed at increasing revenue, such as trade shows, user group events, lead generation, advertising and various sales and promotional programs. Sales and marketing expense also includes personnel costs of order processing, sales agent fees and an allocation of information technology and facilities costs.

On a constant currency basis, sales and marketing expense was \$78.2 million for fiscal 2019, representing a \$2.7 million, or 4%, increase from \$75.5 million for fiscal 2018. The non-currency related increase in sales and marketing expense of \$2.7 million in fiscal 2019 compared to fiscal 2018 was primarily due to higher salaries and related costs of \$3.4 million as a result of higher headcount of approximately 30 people, higher stock compensation of \$0.8 million, higher severance of \$0.6 million, higher information technology and facilities allocated costs of \$0.4 million and higher travel of \$0.3 million. These higher expenses were offset by lower commissions of \$4.5 million, which is partly attributable to the capitalization of commission expense in fiscal 2019 as a result of the adoption of the new revenue standard, Topic 606. Commissions in fiscal 2018 was driven by stronger than anticipated new cloud business bookings in the fourth quarter and was expensed as incurred in fiscal 2018 whereas in fiscal 2019 commission expense related to new subscription and maintenance was capitalized and will be amortized over five years.

On a constant currency basis, sales and marketing expense was \$75.4 million for fiscal 2018, representing a \$7.6 million, or 11%, increase from \$67.8 million for fiscal 2017. The non-currency related increase in sales and marketing expense of \$7.6 million in fiscal 2018 compared to fiscal 2017 was primarily due to higher commissions of \$3.2 million, higher salaries and related costs of \$2.1 million as a result of higher headcount of approximately 16 people, higher bonuses of \$1.6 million and higher travel of \$0.5 million. Stronger than anticipated new cloud business closed in the fiscal 2018 fourth quarter resulted in higher bonuses and commissions without the associated revenue, as we recognized these expenses up front, while the revenue is recognized ratably over the contract period.

Research and Development

	Year Ended January 31, 2019	Year Ended January 31, 2018	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
(in thousands)					\$	%
Research and development	\$ 53,993	\$ 47,661	\$ (6,265)	\$ (67)	\$ (6,332)	-13%
Percentage of revenue	16%	16%				

	Year Ended January 31, 2018	Year Ended January 31, 2017	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
(in thousands)					\$	%
Research and development	\$ 47,661	\$ 43,587	\$ (3,700)	\$ (374)	\$ (4,074)	-9%
Percentage of revenue	16%	16%				

Research and development is expensed as incurred and consists primarily of salaries, benefits, bonuses, stock-based compensation, travel expense and other personnel costs for research and development employees in addition to professional services, such as fees paid to software development firms and independent contractors. Research and development expense includes an allocation of information technology and facilities costs, and is reduced by capitalized localization and translation costs.

On a constant currency basis, research and development expense was \$54.0 million for fiscal 2019, representing a \$6.3 million, or 13%, increase from \$47.7 million for fiscal 2018. The non-currency related increase in research and development expense of \$6.3 million in fiscal 2019 compared to fiscal 2018 was primarily due to higher personnel costs of \$2.7 million, due in part to higher headcount of approximately 12 people, higher contractor costs of \$2.1 million, higher information technology and facilities allocated costs of \$0.4 million and higher stock compensation of \$0.4 million. We continue to invest in our new platform and user interface in addition to developing other advanced technologies such as our automated solutions product.

On a constant currency basis, research and development expense was \$47.7 million fiscal 2018, representing a \$3.7 million, or 8%, increase from \$44.0 million for fiscal 2017. The non-currency related increase in research and development expense of \$3.7 million in fiscal 2018 compared to fiscal 2017 was primarily due to higher salaries and related costs of \$2.2 million, as a result of higher headcount of approximately 35 people, higher bonuses of \$0.9 million and higher contractor costs of \$0.6 million. These costs were a result of our investment in our Channel Islands project, which included the development of a new platform and user interface.

General and Administrative

	Year Ended January 31, 2019	Year Ended January 31, 2018	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
(in thousands)					\$	%
General and Administrative	\$ 35,248	\$ 35,222	\$ 121	\$ (147)	\$ (26)	0%
Percentage of revenue	11%	11%				

	Year Ended January 31, 2018	Year Ended January 31, 2017	Change in Constant Currency	Change due to Currency Fluctuations	Total Change as Reported	
(in thousands)					\$	%
General and Administrative	\$ 35,222	\$ 32,318	\$ (2,863)	\$ (41)	\$ (2,904)	-9%
Percentage of revenue	11%	12%				

General and administrative expense includes salaries, benefits, bonuses, stock-based compensation, travel expense and other personnel costs related to our finance, human resources, legal and executive personnel, as well as professional fees for accounting and legal services, bad debt expense and an allocation of information technology and facilities costs.

On a constant currency basis, general and administrative expense was \$35.2 million for fiscal 2019, representing a \$0.2 million, or 1%, decrease from \$35.4 million for fiscal 2018. The non-currency related decrease in general and administrative expense of \$0.2 million in fiscal 2019 compared to fiscal 2018 was primarily due to lower bonuses of \$0.8 million and lower stock compensation of \$0.4 million partially offset by higher accounting fees of \$0.4 million and higher payroll taxes of \$0.2 million.

On a constant currency basis, general and administrative expense was \$35.2 million for fiscal 2018, representing a \$2.8 million, or 9%, increase from \$32.4 million for fiscal 2017. The non-currency related increase in general and administrative expense of \$2.8 million in fiscal 2018 compared to fiscal 2017 was primarily due to higher bonuses of \$1.0 million, higher stock compensation of \$0.8 million and higher legal and accounting fees of \$0.8 million.

Amortization of Intangibles from Acquisitions

Amortization of intangibles from acquisitions totaled \$0.1 million, \$0.4 million and \$0.7 million for fiscal 2019, 2018 and 2017, respectively. Amortization expense for fiscal 2019 was due to intangible assets acquired during fiscal 2019. Amortization expense for fiscal 2018 and 2017 was due to intangible assets acquired from our fiscal 2013 acquisitions of DynaSys and CEBOS.

Total Other (Income) Expense

	Year Ended January 31, 2019	Increase (Decrease) Compared to Prior Period		Year Ended January 31, 2018	Increase (Decrease) Compared to Prior Period		Year Ended January 31, 2017
(in thousands)		\$	%		\$	%	
Other (income) expense							
Interest income	\$ (2,600)	\$ (1,053)	-68%	\$ (1,547)	\$ (851)	-122%	\$ (696)
Interest expense	643	(26)	-4%	669	(1)	0%	670
Other (income) expense, net	(387)	(2,399)	-119%	2,012	2,448	561%	(436)
Total other (income) expense, net	\$ (2,344)	\$ (3,478)	-307%	\$ 1,134	\$ 1,596	345%	\$ (462)
Percentage of revenue	1%			0%			0%

Total other (income) expense, net was \$(2.3) million, \$1.1 million and \$(0.5) million for fiscal 2019, 2018 and 2017, respectively. When comparing fiscal 2019 to fiscal 2018, the favorable change is primarily related to higher foreign exchange gains of \$2.7 million, as the U.S. dollar strengthened by approximately 10% against the euro, and higher interest income of \$1.1 million due to interest rate increases. When comparing fiscal 2018 to fiscal 2017, the unfavorable change is primarily related to higher foreign exchange losses of \$2.3 million, as the U.S. dollar declined approximately 10% against the euro and Mexican peso, partially offset by higher interest income of \$0.9 million due to interest rate increases.

Interest rate swap valuations and foreign exchange gains and losses are subject to changes which are inherently unpredictable. Our interest rate swap is accounted for using mark-to-market accounting. Accordingly, changes in the fair value of the swap each reporting period are adjusted through earnings, subjecting us to non-cash volatility in our results of operations. The swap fixes the interest rate on our mortgage to 4.31% over the entire term of the mortgage. Although the agreement allows us to prepay the loan and exit the agreement early, we have no intention of doing so. As a result, we will have non-cash adjustments through earnings each reporting period. Over the term of the mortgage, however, the net impact of these mark-to-market adjustments on earnings will be zero.

Income Tax Expense

(in thousands)	Year Ended January 31, 2019	Increase (Decrease) Compared to Prior Period		Year Ended January 31, 2018	Increase (Decrease) Compared to Prior Period		Year Ended January 31, 2017
		\$	%		\$	%	
Income tax expense	\$ 1,489	\$ (3,368)	-69%	\$ 4,857	\$ (14,419)	-75%	\$ 19,276
Percentage of revenue	1%			2%			7%
Effective tax rate	12%			-115%			504%

We recorded income tax expense of \$1.5 million, \$4.9 million and \$19.3 million for fiscal 2019, 2018, and 2017 respectively. QAD's effective tax rate was 12%, -115%, and 504% for fiscal 2019, 2018, and 2017, respectively. We generated pre-tax income of \$11.9 million in fiscal 2019 versus incurring a pre-tax loss of \$(4.2) million in fiscal 2018. Income tax expense in fiscal 2018 included an accrual of \$2.0 million to estimate a one-time mandatory repatriation tax owed related to the Tax Act. The calculation was further refined during fiscal 2019 and the final amount owed was \$0.7 million. As a result, we recorded a tax benefit of \$1.3 million in the fourth quarter of fiscal 2019. In addition, in fiscal 2019 we recorded increased deductions overseas from our equity compensation which lowered our tax expense.

In 2018, our effective tax rate was significantly impacted by the provisional effects of the Tax Act, our jurisdictional mix of income and equity compensation windfalls. In fiscal 2018, we recorded an accrual of \$2.0 million to estimate a one-time mandatory repatriation tax related to the Tax Act. Our effective tax rate in fiscal 2017 was extraordinarily high due to a \$16.3 million valuation allowance placed on U.S. federal and state deferred tax assets.

Our foreign earnings are primarily generated from China, India and Mexico. These countries have higher statutory tax rates and effective tax rates than the U.S. However, we benefit from operating in Ireland which has a lower statutory income tax rate and effective tax rate than the U.S.

For further information regarding income taxes, see Note 4 "Income Taxes" within the Notes to Consolidated Financial Statements included in Item 15 of this Annual Report on Form 10-K.

Non-GAAP Financial Measures

Regulation S-K Item 10(e), "Use of Non-GAAP Financial Measures in Commission Filings," defines and prescribes the conditions for use of non-GAAP financial information. Our measures of non-GAAP adjusted EBITDA, non-GAAP adjusted EBITDA margins, non-GAAP pre-tax income and estimated cash taxes on GAAP earnings each meet the definition of a non-GAAP financial measure. We define the non-GAAP measures as follows:

- Non-GAAP adjusted EBITDA - EBITDA is GAAP net income before net interest expense, income tax expense, depreciation and amortization. Non-GAAP adjusted EBITDA is EBITDA less stock-based compensation expense and the change in the fair value of our interest rate swap.
- Non-GAAP adjusted EBITDA margins - Calculated by dividing non-GAAP adjusted EBITDA by total revenue.
- Non-GAAP pre-tax income - GAAP income before income taxes not including the effects of stock-based compensation expense, amortization of purchased intangible assets and the change in fair value of our interest rate swap.
- Estimated cash taxes on GAAP earnings - Defined as GAAP total tax expense excluding changes in reserves for unrecognized tax benefits.

QAD's management uses non-GAAP measures internally to evaluate the business and believes that presenting non-GAAP measures provides useful information to investors regarding the underlying business trends and performance of our ongoing operations as well as useful metrics for monitoring our performance and evaluating it against industry peers. The non-GAAP financial measures presented should be used in addition to, and in conjunction with, results presented in accordance with GAAP, and should not be relied upon to the exclusion of GAAP financial measures. Management strongly encourages investors to review our consolidated financial statements in their entirety and not to rely on any single financial measure in evaluating the company.

QAD non-GAAP measures reflect adjustments based on the following items:

Stock-based compensation expense: We have excluded the effect of stock-based compensation expense from our non-GAAP adjusted EBITDA and non-GAAP pre-tax income calculations. Although stock-based compensation expense is calculated in accordance with current GAAP and constitutes an ongoing and recurring expense, such expense is excluded from non-GAAP results because it is not an expense which generally requires cash settlement by QAD, and therefore is not used by us to assess the profitability of our operations. We also believe the exclusion of stock-based compensation expense provides a more useful comparison of our operating results to the operating results of our peers.

Amortization of purchased intangible assets: We amortize purchased intangible assets in connection with our acquisitions. We have excluded the effect of amortization of purchased intangible assets, which include purchased technology, customer relationships, trade names and other intangible assets, from our non-GAAP pre-tax income calculation, because doing so makes internal comparisons to our historical operating results more consistent. In addition, we believe excluding amortization of purchased intangible assets provides a more useful comparison of our operating results to the operating results of our peers.

Change in fair value of the interest rate swap: We entered into an interest rate swap to mitigate our exposure to the variability of one-month LIBOR for our floating rate debt related to the mortgage of our headquarters. We have excluded the gain/loss adjustments to record the interest rate swap at fair value from our non-GAAP adjusted EBITDA and non-GAAP pre-tax income calculations. We believe that these fluctuations are not indicative of our operational costs or meaningful in evaluating comparative period results because we currently have no intention of exiting the debt agreement early; and therefore over the life of the debt the sum of the fair value adjustments will be zero.

The following table sets forth the reconciliation of the non-GAAP financial measures of adjusted EBITDA, adjusted EBITDA margins and non-GAAP pre-tax income to the most comparable GAAP measures for fiscal years 2019, 2018 and 2017 (in thousands):

	Years Ended January 31,		
	2019	2018	2017
Total revenue	\$ 333,016	\$ 305,018	\$ 277,973
Net income (loss)	10,428	(9,065)	(15,450)
Add back:			
Net interest (income) expense	(1,957)	(878)	(26)
Depreciation	4,734	4,562	4,326
Amortization	772	1,199	1,710
Income tax expense	1,489	4,857	19,276
EBITDA	\$ 15,466	\$ 675	\$ 9,836
Add back:			
Stock based compensation expense	10,122	8,924	7,323
Change in fair value of interest rate swap	51	(377)	(485)
Adjusted EBITDA	\$ 25,639	\$ 9,222	\$ 16,674
Adjusted EBITDA margin	8%	3%	6%
Non-GAAP pre-tax income reconciliation			
Income (loss) before income tax expense	\$ 11,917	\$ (4,208)	\$ 3,826
Add back			
Stock-based compensation expense	10,122	8,924	7,323
Amortization of purchased intangible assets	125	842	1,377
Change in fair value of interest rate swap	51	(377)	(485)
Non-GAAP income before income taxes	\$ 22,215	\$ 5,181	\$ 12,041
Estimated cash taxes on GAAP earnings	\$ 3,270	\$ 2,812	\$ 2,688

LIQUIDITY AND CAPITAL RESOURCES

Our primary source of cash is from the sale of subscription, licenses, maintenance and professional services to our customers. Our primary use of cash is payment of our operating expenses which mainly consist of employee-related expenses, such as compensation and benefits, as well as general operating expenses for facilities, third-party hosting providers, third party contractors and other overhead costs. In addition to operating expenses, we may also use cash for capital expenditures; payment of dividends, taxes on equity award exercises and stock repurchases; and to invest in our growth initiatives, which may include acquisitions of products, technologies and businesses.

At January 31, 2019, our principal sources of liquidity were cash and equivalents totaling \$139.4 million, short-term investments of \$1.2 million and net accounts receivable of \$81.6 million. Our cash and equivalents consisted of current bank accounts, registered money market funds and time delineated deposits. Approximately 85% of our cash and equivalents were held in U.S. dollar denominated accounts as of January 31, 2019.

Our primary commercial banking relationship is with Bank of America and its global affiliates. Our largest cash concentrations are in the United States and Ireland. The percentage of cash and equivalents held by foreign subsidiaries was 74% and 69% as of January 31, 2019 and January 31, 2018, respectively. The majority of our cash and equivalents are held in investment accounts which are predominantly placed in money market mutual funds, U.S. Treasury and government securities funds. The remaining cash and equivalents and short-term investments are held in deposit accounts and certificates of deposit.

We are a U.S.-based multinational company subject to tax in multiple U.S. and foreign tax jurisdictions. In addition to providing for U.S. income taxes on earnings from the United States, we provide for U.S. income taxes on the earnings of foreign subsidiaries unless the subsidiaries' earnings are considered permanently reinvested outside the United States. We do not anticipate changing our intention regarding permanently reinvested earnings as of the balance sheet date.

In December 2017, the Tax Act was signed into law. The Tax Act includes a mandatory one-time tax on accumulated earnings of our foreign subsidiaries which resulted in \$0.7 million of additional U.S. tax and will be paid in equal installments over eight years beginning in fiscal 2019. In spite of the U.S. taxation on these earnings, we intend to permanently reinvest the earnings in our foreign subsidiaries. Should we decide to repatriate these earnings in the future, we would not expect to incur significant additional taxes; however, foreign withholding taxes, currency translation, state taxes and currency control laws must always be considered.

The following table summarizes our cash flows for the fiscal years ended January 31, 2019, 2018 and 2017, respectively.

(in thousands)	Years Ended January 31,		
	2019	2018	2017
Net cash provided by operating activities	\$ 19,007	\$ 10,418	\$ 18,680
Net cash used in investing activities	(9,258)	(4,669)	(3,406)
Net cash used in financing activities	(14,691)	(9,165)	(7,814)
Effect of foreign exchange rates on cash and equivalents	(2,668)	5,357	(109)
Net (decrease) increase in cash and equivalents	\$ (7,610)	\$ 1,941	\$ 7,351

Typical factors affecting our cash provided by operating activities include our level of revenue and earnings for the period; the timing and amount of employee related compensation payments, vendor payments and tax payments; and the timing and amount of billings and cash collections from our customers, which is our largest source of operating cash flow. Net cash flows provided by operating activities were \$19.0 million and \$10.4 million for fiscal 2019 and 2018, respectively. The increase in cash flows from operating activities was due primarily to an increase in net income of \$19.5 million and the positive cash flow effect of changes in accounts receivable of \$11.0 million partially offset by the negative cash flow effect of changes in accounts payable and other liabilities of \$(17.4) million.

Net cash flows provided by operating activities were \$10.4 million and \$18.7 million for fiscal 2018 and 2017, respectively. The decrease in cash flow provided by operating activities from fiscal 2017 to fiscal 2018 was due to a decrease in pre-tax income of \$8 million. Although our revenue increased 10% year over year, our personnel expenses were significantly higher as a result of hiring 160 additional employees to support the growth in our subscription and services offerings.

Net cash used in investing activities consisted primarily of capital expenditures of \$4.3 million, \$3.7 million and \$3.3 million for fiscal 2019, 2018 and 2017, respectively. We continue to monitor our capital spending and do not believe we are delaying critical capital expenditures required to run our business. During fiscal 2019, we made two acquisitions. We acquired the assets of one of our Indonesian software distributors and made another acquisition to add functionality to our product suite. The total purchase price of the two acquisitions was \$2.7 million and funded entirely with cash on hand.

Net cash used in financing activities consisted primarily of payments of withholding taxes on settlement of stock-based compensation and payment of dividends. We paid withholding taxes of \$8.7 million, \$3.4 million and \$2.1 million in fiscal 2019, 2018 and 2017, respectively, on vested restricted stock units and exercised stock appreciation rights. We made dividend payments of \$5.5 million, \$5.4 million and \$5.3 million in fiscal 2019, 2018 and 2017, respectively. On a regular basis the Board of Directors evaluates our ability to continue to pay dividends as well as the structure of any potential dividend payments.

We have historically calculated accounts receivable days' sales outstanding ("DSO"), using the countback, or last-in first-out, method. This method calculates the number of days of billed revenue represented by the accounts receivable balance as of period end. When reviewing the performance of our entities, DSO under the countback method is used by management. It is management's belief that the countback method best reflects the relative health of our accounts receivable as of a given quarter-end or year-end because of the cyclical nature of our billings. Our billing cycle includes high annual maintenance renewal billings at year-end that will not be recognized as earned revenue until future periods.

DSO under the countback method was relatively consistent at 48 days and 51 days as of January 31, 2019 and 2018, respectively. DSO using the average method, which is calculated utilizing the accounts receivable balance and earned revenue for the most recent quarter, was 89 days and 93 days as of January 31, 2019 and 2018, respectively. The aging of our accounts receivable remained consistent when compared with the same period last year. We believe our reserve methodology is adequate, our reserves are properly stated as of January 31, 2019 and the quality of our receivables remains good.

There have been no material changes in our contractual obligations or commercial commitments outside the ordinary course of business. Cash requirements for items other than normal operating expenses are anticipated for capital expenditures, dividend payments and other equity transactions. We may require cash for acquisitions of new businesses, software products or technologies complementary to our business.

We believe that our cash on hand and net cash provided by operating activities will provide us with sufficient resources to meet our current and long-term working capital requirements, debt service, dividend payments and other cash needs for at least the next twelve months.

Our revenue, earnings, cash flows, receivables, and payables are subject to fluctuations due to changes in foreign currency exchange rates. See Part II, Item 7A, “Quantitative and Qualitative Disclosures about Market Risk” for further discussion.

Seasonal Nature of Deferred Revenue, Accounts Receivable and Operating Cash Flow. Deferred revenue primarily consists of billings to customers for maintenance and subscription. When renewing maintenance we generally invoice our customers in annual cycles and when renewing subscription we generally invoice our customers quarterly or annually. We typically issue renewal invoices in advance of the renewal period. The invoice for initial maintenance and subsequent invoices for maintenance renewal may occur in different quarters of the relevant year. This may result in quarterly fluctuations in deferred revenue and accounts receivable. There is a disproportionate weighting towards annual billings in the fourth quarter, primarily as a result of large enterprise account buying patterns. Our fourth quarter has historically been our strongest quarter for new business and renewals. The year on year compounding effect of this seasonality in both billing patterns and overall new and renewal business causes the value of invoices that we generate in the fourth quarter for both new business and renewals to increase as a proportion of our total annual billings.

The sequential quarterly changes in accounts receivable, related deferred revenue and operating cash flow during the first three quarters of our fiscal year are not necessarily indicative of the billing activity that occurs in the fourth quarter as displayed below (in thousands):

	<u>January 31,</u> <u>2019</u>	<u>October 31,</u> <u>2018</u>	<u>July 31,</u> <u>2018</u>	<u>April 30,</u> <u>2018</u>
Fiscal 2019				
Accounts receivable, net	\$ 81,577	\$ 46,420	\$ 54,258	\$ 56,909
Deferred revenue, current	115,253	80,537	91,195	103,369
Operating cash flow (1)	3,890	5,971	5,361	3,785
	<u>January 31,</u> <u>2018</u>	<u>October 31,</u> <u>2017</u>	<u>July 31,</u> <u>2017</u>	<u>April 30,</u> <u>2017</u>
Fiscal 2018				
Accounts receivable, net	\$ 83,518	\$ 50,753	\$ 42,397	\$ 46,381
Deferred revenue, current	116,693	83,117	89,661	97,235
Operating cash flow (1)	7,574	(4,794)	(244)	7,882
	<u>January 31,</u> <u>2017</u>	<u>October 31,</u> <u>2016</u>	<u>July 31,</u> <u>2016</u>	<u>April 30,</u> <u>2016</u>
Fiscal 2017				
Accounts receivable, net	\$ 69,441	\$ 39,100	\$ 45,468	\$ 44,829
Deferred revenue, current	104,125	73,982	85,268	92,640
Operating cash flow (1)	13,209	3,451	663	1,357

(1) Operating cash flow represents net cash provided by (used in) operating activities for the three months ended in the periods stated above.

CONTRACTUAL OBLIGATIONS

The following table summarizes our significant contractual obligations at January 31, 2019 and the effect these contractual obligations are expected to have on our liquidity and cash flows in future periods.

	Years Ended January 31,						
	2020	2021	2022	2023	2024	Thereafter	Total
	(In millions)						
Notes payable	\$ 0.5	\$ 0.5	\$ 0.5	\$ 11.8	\$ —	\$ —	\$ 13.3
Notes payable interest payments	0.6	0.6	0.5	0.2	—	—	1.9
Lease obligations	5.6	4.6	2.8	1.8	1.5	2.8	19.1
Purchase obligations	9.0	6.8	3.0	0.1	—	—	18.9
Total	\$ 15.7	\$ 12.5	\$ 6.8	\$ 13.9	\$ 1.5	\$ 2.8	\$ 53.2

Purchase obligations are contractual obligations for the purchase of goods or services. They are defined as agreements that are enforceable and legally binding for QAD which specify all significant terms, including fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction. Purchase obligations relate primarily to information technology infrastructure costs, hosting services agreements and costs associated with our sales and marketing events.

We have omitted unrecognized tax benefits from this table due to the inherent uncertainty regarding the timing of potential issue resolution. Specifically, either (a) the underlying positions have not been fully enough developed under audit to quantify at this time, or (b) the years relating to the issues for certain jurisdictions are not currently under audit. As of January 31, 2019, we had \$1.2 million of unrecognized tax benefits. This is before the netting required by ASU 2013-11 which requires the netting of unrecognized tax benefits against deferred tax assets for a loss or credit that would apply in settlement of the uncertain tax position. For further information regarding the unrecognized tax benefits see Note 4 “Income Taxes” within Notes to Consolidated Financial Statements.

Purchase orders or contracts for the purchase of supplies and other goods and services are not included in the table above. We are not able to determine the aggregate amount of such purchase orders that represent contractual obligations, as purchase orders may represent authorizations to purchase rather than binding agreements. Our purchase orders are based on our current procurement or development needs and are fulfilled by our vendors within short time frames. We do not have significant agreements for the purchase of supplies or other goods specifying minimum quantities or set prices that exceed our expected requirements for three months.

We have certain royalty commitments associated with the licensing of certain products. Royalty expense is generally based on the number of licenses delivered or being used in the cloud environment; or a percentage of the underlying revenue. Royalty expense, included in cost of subscription, license and maintenance and other revenue, was \$18.6 million, \$17.1 million and \$16.2 million in fiscal 2019, 2018 and 2017, respectively.

Note Payable

Effective May 30, 2012, QAD Ortega Hill, LLC entered into a variable rate credit agreement (the “2012 Mortgage”) with Rabobank, N.A., to refinance a pre-existing mortgage. The 2012 Mortgage has an original principal balance of \$16.1 million and bears interest at the one month LIBOR rate plus 2.25%. One month LIBOR was 2.51% at January 31, 2019. The 2012 Mortgage matures in June 2022 and is secured by the Company’s headquarters located in Santa Barbara, California. In conjunction with the 2012 Mortgage, QAD Ortega Hill, LLC entered into an interest rate swap with Rabobank, N.A. The swap agreement has an initial notional amount of \$16.1 million and a schedule matching that of the underlying loan that synthetically fixes the interest rate on the debt at 4.31% for the entire term of the 2012 Mortgage. The terms of the 2012 Mortgage provide for QAD Ortega Hill, LLC to make net monthly payments of \$88,100 consisting of principal and interest and one final payment of \$11.7 million. The unpaid balance as of January 31, 2019 was \$13.4 million.

Lease Obligations

We lease certain office facilities, office equipment and automobiles under operating lease agreements. Although our office lease agreements end on various dates through fiscal year 2028, they typically include termination options at earlier dates. The contractual obligations table reflects future minimum rental payments under non-cancellable operating lease commitments with terms of more than one year. For further discussion of our leased office facilities, see Item 2 entitled “Properties” included elsewhere in this Annual Report on Form 10-K.

Off-Balance Sheet Arrangements

As of January 31, 2019, we did not have any off-balance sheet arrangements as defined in Item 303(a)(4)(ii) of SEC Regulation S-K.

CRITICAL ACCOUNTING POLICIES

The SEC defines “critical accounting policies” as those that require application of management’s most difficult, subjective, or complex judgments. These policies often require us to make estimates about the effects of matters that are inherently uncertain and are subject to change in subsequent periods.

We consider the following policies to be critical because of the significance of these items to our operating results and the estimation processes and management judgment involved in each:

- Revenue
- Accounts receivable allowances for doubtful accounts
- Goodwill and intangible assets – impairment assessments
- Income taxes
- Stock-based compensation

Our senior management has reviewed these critical accounting policies and related disclosures. Historically, estimates described in our critical accounting policies that have required significant judgment and estimation on the part of management have been reasonably accurate.

Revenue. We offer our software using the same underlying technology via two models: a traditional on-premises licensing model and a cloud-based subscription model. The on-premises model involves the sale or license of software on a perpetual basis to customers who take possession of the software and install and maintain the software on their own hardware. Under the cloud-based subscription delivery model, we provide access to our software on a hosted basis as a service and customers generally do not have the contractual right to take possession of the software.

We generate revenue through sales of licenses and maintenance provided to our on-premises customers and through subscriptions of our cloud-based software. We offer professional services to both our on-premises and cloud customers to assist them with the design, testing and implementation of our software.

We determine revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer;
- Identification of the performance obligations in the contract;
- Determination of the transaction price;
- Allocation of the transaction price to the performance obligations in the contract; and
- Recognition of revenue when, or as, we satisfy a performance obligation.

Revenue is presented net of sales, value-added and other taxes collected from customers and remitted to government authorities.

Performance Obligations

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account under Topic 606. The transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied by transferring the promised good or service to the customer. We identify and track the performance obligations at contract inception so that we can monitor and account for the performance obligations over the life of the contract.

Our contracts which contain multiple performance obligations generally consist of the initial purchase of subscription or licenses and a professional services engagement. License purchases generally have multiple performance obligations as customers purchase maintenance in addition to the licenses. Our single performance obligation arrangements are typically maintenance renewals, subscription renewals and services engagements.

For contracts with multiple performance obligations where the contracted price differs from the standalone selling price (“SSP”) for any distinct good or service, we may be required to allocate the contract’s transaction price to each performance obligation using our best estimate for the SSP. SSP is assessed annually using a historical analysis of contracts with customers executed in the most recently completed fiscal year to determine the range of selling prices applicable to a distinct good or service.

Judgment is required to determine the SSP for each distinct performance obligation. We rarely license or sell our software products on a stand-alone basis, so we are required to estimate the range of SSPs for each performance obligation. In instances where SSP is not directly observable because we do not sell the license, product or service separately, we determine the SSP using information that may include market conditions and other observable inputs. In making these judgments, we analyze various factors, including our pricing methodology and consistency, size of the arrangement, length of term, customer demographics and overall market and economic conditions. Based on these results, the estimated SSP is set for each distinct product or service delivered to customers.

Subscription

Subscription revenue is recognized ratably over the initial subscription period committed to by the customer commencing when the cloud environment is made available to the customer. The initial subscription period is typically 12 to 60 months. We generally invoice our customers in advance in quarterly or annual installments and typical payment terms provide that customers make payment within 30 days of invoice.

Software Licenses

Transfer of control for software is considered to have occurred upon electronic delivery of the license key that provides immediate availability of the product to the customer. Our typical payment terms tend to vary by region but our standard payment terms are within 30-90 days of invoice.

Maintenance

Revenue from support services and product updates, referred to as maintenance revenue, is recognized ratably over the term of the maintenance period, which in most instances is one year. Software license updates provide customers with rights to unspecified software product updates, maintenance releases and patches released during the term of the support period on a when-and-if available basis. Product support includes Internet access to technical content, as well as Internet and telephone access to technical support personnel. Our customers purchase both product support and license updates when they acquire new software licenses. In addition, a majority of customers renew their support services contracts annually and typical payment terms provide that customers make payment within 30 days of invoice.

Professional Services

Revenue from professional services is typically comprised of implementation, development, training or other consulting services. Consulting services are generally sold on a time-and-materials or fixed fee basis and can include services ranging from software installation to data conversion and building non-complex interfaces to allow the software to operate in integrated environments. We recognize revenue for time-and-materials arrangements as the services are performed. In fixed fee arrangements, revenue is recognized as services are performed as measured by costs incurred to date, compared to total estimated costs to complete the services project. Management applies judgment when estimating project status and the costs necessary to complete the services projects. A number of internal and external factors can affect these estimates, including labor rates, utilization and efficiency variances and specification and testing requirement changes. Services are generally invoiced upon milestones in the contract or upon consumption of the hourly resources and payments are typically due 30 days after invoice.

Indirect Sales Channels

We execute arrangements through indirect sales channels via sales agents and distributors who are authorized to market our software products to end users. In arrangements with sales agents, QAD contracts directly with the customer and the sales agents are compensated on a commission basis. Distributor arrangements are those in which the resellers are authorized to market and distribute our software products to end users in specified territories and the distributor bears the risk of collection from the end user customer. We recognize revenue from transactions with distributors when the distributor submits a signed agreement and transfer of control has occurred to the distributor, in accordance with the five revenue recognition steps noted above. Revenue from distributor transactions is recorded on a net basis (the amount actually received by us from the distributor). We do not offer rights of return, product rotation or price protection to any of our distributors.

Disaggregated Revenue

We disaggregate revenue from contracts with customers by geography and by the customers' industry within manufacturing, as we believe it best depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors.

Our revenue by geography is as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
North America	\$ 162,307	\$ 141,614	\$ 129,436
EMEA	96,989	89,693	81,765
Asia Pacific	51,628	50,689	47,742
Latin America	22,092	23,022	19,030
Total revenue	<u>\$ 333,016</u>	<u>\$ 305,018</u>	<u>\$ 277,973</u>

Our revenue by industry is as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Automotive	\$ 128,249	\$ 113,579	\$ 96,794
Consumer products and food and beverage	53,637	47,273	47,796
High technology and industrial products	106,658	99,990	91,652
Life sciences and other	44,472	44,176	41,731
Total revenue	<u>\$ 333,016</u>	<u>\$ 305,018</u>	<u>\$ 277,973</u>

Management Judgments

More judgments and estimates are required under Topic 606 than were required under Topic 605. Due to the complexity of certain contracts, the actual revenue recognition treatment required under Topic 606 for our arrangements may be dependent on contract-specific terms and may vary in some instances.

Revenue is recognized over time for our subscription, maintenance and fixed fee professional services that are separate performance obligations. For professional services, revenue is recognized over time, generally using costs incurred or hours expended to measure progress. Judgment is required in estimating project status and the costs necessary to complete projects. A number of internal and external factors can affect these estimates, including labor rates, utilization, specification variances and testing requirement changes.

If a group of agreements are entered at or near the same time and so closely related that they are, in effect, part of a single arrangement, such agreements are deemed to be combined as one arrangement for revenue recognition purposes. We exercise judgment to evaluate the relevant facts and circumstances in determining whether agreements should be accounted for separately or as a single arrangement. Our judgments about whether a group of contracts comprise a single arrangement can affect the allocation of consideration to the distinct performance obligations, which could have an effect on results of operations for the periods involved.

If a contract includes variable consideration, we exercise judgment in estimating the amount of consideration to which the entity will be entitled in exchange for transferring the promised goods or services to a customer. When estimating variable considerations, we will consider all relevant facts and circumstances. Variable consideration will be estimated and included in the contract price only when it is probable that a significant reversal in the amount of revenue recognized will not occur.

Practical Expedients and Exemptions

There are several practical expedients and exemptions allowed under Topic 606 that impact timing of revenue recognition and our disclosures. Below is a list of practical expedients we applied in the adoption and application of Topic 606:

Application

- We do not evaluate a contract for a significant financing component if payment is expected within one year or less from the transfer of the promised items to the customer.
- We generally expense sales commissions and sales agent fees when incurred when the amortization period would have been one year or less. These costs are recorded within sales and marketing expense in the Consolidated Statement of Operations and Comprehensive Income (Loss).
- We also used the practical expedient to calculate contract acquisition costs based on a portfolio of contracts with similar characteristics instead of a contract by contract analysis.
- We do not disclose the value of unsatisfied performance obligations for contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed (applies to time-and-material engagements).

Modified Retrospective Transition Adjustments

- For contract modifications, we reflected the aggregate effect of all modifications that occurred prior to the adoption date when identifying the satisfied and unsatisfied performance obligations, determining the transaction price and allocating the transaction price to satisfied and unsatisfied performance obligations for the modified contract at transition.

Costs to Obtain and Fulfill a Contract

Our incremental direct costs of obtaining a contract consist of sales commissions and sales agent fees which are deferred and amortized ratably over the term of economic benefit which we have determined to be five years. These deferred costs are classified as current or non-current based on the timing of when we expect to recognize the expense. Incremental costs related to renewals are expensed as incurred because the term of economic benefit is one year or less. The current and non-current portions of deferred commissions are included in other current assets and other long-term assets, respectively, in our Consolidated Balance Sheets.

Costs to fulfill a contract, which are incurred upon initiation of certain services contracts and are related to initial customer setup, are included in other current assets and long-term assets in the Company's Consolidated Balance Sheets. These costs are amortized over the term of economic benefit which we have determined to be five years.

Recoverability of these costs is subject to various business risks. Quarterly, we compare the carrying value of these assets with the undiscounted future cash flows expected to be generated by them to determine if there is impairment. If impaired, these assets are reduced to an estimated fair value on a discounted cash flow basis. No impairment losses were recognized during the twelve months ended January 31, 2019.

Accounts Receivable Allowance for Doubtful Accounts. The accounts receivable allowance for doubtful accounts is comprised of the allowance for bad debt and the allowance for sales adjustments.

Allowance for Bad Debt

Trade accounts receivable are recorded at the invoiced amount and do not bear interest. We review the collectability of our accounts receivable each period by analyzing balances based on age and record specific allowances for any balances that we determine may not be fully collectible due to inability of the customers to pay. We also provide for a general reserve based on historical data including analysis of write-offs and other known factors. Provisions to the allowance for bad debt are included as bad debt expense in "General and Administrative" expense. Judgment is required in adjusting our receivables to amounts we believe are realizable, especially when a customer is experiencing financial difficulty or is in bankruptcy. Although we use the best information available in making our estimates, we may incur additional bad debt expense in future periods which could have a material effect on earnings in any given quarter should additional allowances for doubtful accounts be necessary. The determination to write-off specific accounts receivable balances is made based on likelihood of collection and past due status. Past due status is based on invoice date and terms specific to each customer.

Allowance for Sales Adjustments

We do not generally provide a contractual right of return; however, in the course of business we have occasionally allowed sales adjustments related to customer dispute resolution. We record a provision against revenue for estimated sales adjustments in the same period the related revenues are recorded or when current information indicates additional amounts are required. These estimates are based on historical experience, specifically identified customers and other known factors. Although we use the best information available in making our estimates, we may incur additional provisions against revenue in future periods which could have a material effect on earnings in any given quarter should additional allowances for sales returns be necessary.

Goodwill and Intangible Assets – Impairment Assessments. When we acquire a business, a portion of the purchase consideration is typically allocated to acquired technology and other identifiable intangible assets, such as customer relationships and developed technology. The excess of the purchase consideration over the net of the acquisition-date fair value of identifiable assets acquired and liabilities assumed is recorded as goodwill. The amounts allocated to acquired technology and other intangible assets represent our estimates of their fair values at the acquisition date. We amortize the acquired technology and other intangible assets with finite lives over their estimated useful lives. The estimation of acquisition-date fair values of intangible assets and their useful lives requires us to make assumptions and judgments, including but not limited to an evaluation of macroeconomic conditions as they relate to our business, industry and market trends, projections of future cash flows and appropriate discount rates.

We review the carrying value of goodwill using the methodology prescribed in FASB Accounting Standards Codification 350 *Intangibles—Goodwill and Other* ("ASC 350"). We test goodwill for impairment annually in our fourth fiscal quarter or sooner should events or changes in circumstances indicate potential impairment as required under Accounting Standard Update No. 2011-08, "Testing Goodwill for Impairment" ("ASU 2011-08"). ASU 2011-08 provides for an optional assessment of qualitative factors of impairment ("optional assessment") prior to necessitating a two-step quantitative impairment test. Should the optional assessment be utilized for any given fiscal year, qualitative factors to consider include cost factors; financial performance; legal, regulatory, contractual, political, business, or other factors; entity specific factors; industry and market considerations; macroeconomic conditions; and other relevant events and factors affecting the reporting unit. If, after assessing the totality of events or circumstances, it is more likely than not that the fair value of the reporting unit is greater than its carrying value, then performing the two-step impairment test is unnecessary.

Under the two-step quantitative impairment test, we use discounted cash flow models which include assumptions regarding projected cash flows. Variances in these assumptions could have a significant impact on our conclusion as to whether goodwill is impaired, or the amount of any impairment charge. Impairment charges, if any, result from instances where the fair values of net assets associated with goodwill are less than their carrying values. As changes in business conditions and our assumptions occur, we may be required to record impairment charges.

Management evaluates the Company as a single reporting unit for business and operating purposes as almost all of our revenue streams are generated by the same underlying technology whether acquired, purchased or developed. In addition, the majority of our costs are, by their nature, shared costs that are not specifically identifiable to a geography or product line but relate to almost all products. As a result, there is a high degree of interdependency among our revenues and cash flows for levels below the consolidated entity and identifiable cash flows for a reporting unit separate from the consolidated entity are not meaningful.

For our annual impairment assessments in fiscal 2019, 2018 and 2017 we did not utilize the optional assessment. An impairment analysis was performed at the enterprise level which compared our market capitalization to our net assets as of the test date, November 30. As our market capitalization substantially exceeded our net assets, there was no indication of goodwill impairment for fiscal 2019, 2018 and 2017.

We make judgments about the recoverability of purchased finite lived intangible assets whenever events or changes in circumstances indicate that an impairment may exist. Each fiscal year we evaluate the estimated remaining useful lives of purchased intangible assets and whether events or changes in circumstances warrant a revision to the remaining periods of amortization. Recoverability of finite lived intangible assets is measured by comparison of the carrying amount of the asset to the future undiscounted cash flows the asset is expected to generate.

Assumptions and estimates about future values and remaining useful lives of our intangible assets are complex and 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 and our internal forecasts. Although we believe the historical assumptions and estimates we have made are reasonable and appropriate, different assumptions and estimates could materially impact our reported financial results. We did not recognize any intangible asset impairment charges in fiscal 2019, 2018 and 2017.

Income Taxes. We are a U.S. based multinational company subject to tax in the U.S. (federal and state) and numerous foreign jurisdictions. Tax laws, regulations, and administrative practices in various jurisdictions may be subject to significant change, with or without notice, due to economic, political, and other conditions, and significant judgment is required in evaluating and estimating our provision and accruals for these taxes. There are many transactions that occur during the ordinary course of business for which the ultimate tax determination is uncertain. Our effective tax rate could be affected by numerous factors, such as intercompany transactions, the relative amount of foreign earnings, including earnings being lower than anticipated in jurisdictions where we have lower statutory rates and higher than anticipated in jurisdictions where we have higher statutory tax rates, the applicability of special tax regimes, losses incurred in jurisdictions for which we are not able to realize the related tax benefit, changes in our deferred tax assets and liabilities and their valuation, and changes in the relevant tax law, accounting, and other laws, regulations, administrative practices, principles and interpretations.

In December 2017, the Tax Act was signed into law. The Tax Act significantly changes how the U.S. taxes corporations. The Tax Act requires complex computations to be performed that were not previously required; significant judgments to be made in interpretation of the provisions and significant estimates in calculations. The U.S. Treasury Department, the Internal Revenue Service, and other standard-setting bodies could interpret or issue guidance on how provisions of the Tax Act will be applied or otherwise administered that is different from our interpretation.

The amount of income tax we pay is subject to ongoing audits by federal, state and foreign tax authorities, which sometimes results in proposed assessments. Our estimate of the potential outcome for any uncertain tax position requires judgment. For tax related contingencies, we account for uncertain tax positions based on a two-step approach: recognition and measurement. We recognize a tax position when we determine that it is more likely than not that the position will be sustained upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those positions that do not meet the recognition threshold, no tax benefit is recognized in the financial statements. For those tax positions that meet the recognition threshold, we measure the tax position as the largest amount of benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. We record interest and penalties related to income tax liabilities as income tax expense. We have reserves to address tax positions that could be challenged by taxing authorities, even though we believe that the positions taken are appropriate. Our tax reserves are reviewed on a quarterly basis and adjusted as events occur that could affect our liability.

The carrying value of our deferred tax assets reflects an amount that is more likely than not to be realized with taxable income generated by results of future operations. At January 31, 2019, we had \$20.4 million of deferred tax assets, net of valuation allowances and uncertain tax positions, consisting of \$56.1 million of gross deferred tax assets offset by valuation allowances of \$34.8 million and uncertain tax positions of \$0.9 million. In assessing the likelihood of realizing tax benefits associated with deferred tax assets and the need for a valuation allowance we consider the weight of all available evidence both positive and negative including expected future taxable income and tax planning strategies that are both prudent and feasible. For the year ended January 31, 2019, management continued to maintain a full valuation allowance on its U.S. federal and state deferred tax assets. The valuation allowance increased by \$1.2 million primarily due to increased foreign tax credits and net operating losses and the tax impact of the adoption of Topic 606.

Stock-Based Compensation. We account for share-based payments (“equity awards”) to employees in accordance with ASC 718, *Compensation—Stock Compensation* (“ASC 718”), which requires that share-based payments (to the extent they are compensatory) be recognized in our Consolidated Statements of Operations and Comprehensive Income (Loss) based on their fair values as measured at the grant date. The fair value of an equity award is recognized as stock-based compensation expense ratably over the vesting period of the equity award. Determining the fair value of stock-based awards at the grant date requires judgment and the fair value per share of historical grants of equity awards may not be indicative of the fair value per share for future grants of equity awards.

Fair Value of RSUs

The fair value of restricted stock units (“RSUs”) is determined on the grant date of the award as the market price of our common stock on the date of grant, reduced by the present value of estimated dividends foregone during the vesting period. As our stock price fluctuates, so does the fair value of our future RSU grants. Judgment is required in determining the present value of estimated dividends foregone during the vesting period. We estimate the dividends for purposes of this calculation based on our historical dividend payments per share, which has remained consistent over the last three years.

Fair Value of SARs

The fair value of stock-settled stock appreciation rights (“SARs”) is determined on the grant date of the award using the Black-Scholes-Merton valuation model. One of the inputs to the Black-Scholes-Merton valuation model is the fair market value on the date of the grant. As our stock price fluctuates, so does the fair value of our future SAR grants. Judgment is required in determining the remaining inputs to the Black-Scholes-Merton valuation model. Furthermore, the values underlying these inputs fluctuate, which impacts the fair value of our future SAR grants. These inputs include the expected life, volatility, the risk-free interest rate and the dividend rate. The following describes our policies with respect to determining these valuation inputs:

Expected Life – The expected life valuation input includes a computation that is based on historical vested SAR exercises and post-vest expiration patterns and an estimate of the expected life for SARs that were fully vested and outstanding. Furthermore, based on our historical pattern of SAR exercises and post-vest expiration patterns we determined that there are two discernible populations, which include QAD’s directors and officers and all other QAD employees. The estimate of the expected life for SARs that were fully vested and outstanding was determined as the midpoint of a range as follows: the low end of the range assumes the fully vested and outstanding SARs are exercised or expire unexercised on the evaluation date and the high end of the range assumes that these SARs are exercised or expire unexercised upon contractual term.

Volatility – The volatility valuation input is based on the historical volatility of our common stock, which we believe is representative of the expected volatility over the expected life of options and SARs.

Risk Free Interest Rate – The risk-free interest rate is based on the U.S. Treasury constant maturities in effect at the time of grant for the expected term of the SAR.

Dividend Rate – The dividend rate is based on our historical dividend payments per share. Historically, have we paid quarterly dividends at a rate of \$0.072 per share of Class A common stock and \$0.060 per share of Class B common stock.

We record deferred tax assets for equity awards that result in deductions on our income tax returns, based on the amount of stock-based compensation recognized and the fair values attributable to the vested portion of those equity awards. Because the deferred tax assets we record are based upon the stock-based compensation expenses in a particular jurisdiction, the aforementioned inputs that affect the fair values of our equity awards may also indirectly affect our income tax expense. If the tax deduction is less than the deferred tax asset, the calculated shortfall would increase our income tax expense. If the tax deduction is more than the deferred tax asset, the calculated windfall would decrease our income tax expense.

To the extent we change the terms of our employee stock-based compensation programs or experience fluctuations in the underlying criteria used to determine our equity award valuations, among other potential impacts, the stock-based compensation expense that we record in future periods and the tax benefits that we realize may differ significantly from what we have recorded in previous reporting periods.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Exchange Rates. We have operations in foreign locations around the world and we are exposed to risk resulting from fluctuations in foreign currency exchange rates. We have experienced significant foreign currency fluctuations in fiscal 2019 due primarily to the volatility of the euro and Mexican peso in relation to the U.S. dollar. However, while strengthening of the U.S. dollar compared to foreign currency exchange rates generally has the effect of reducing revenues it also has the effect of reducing expenses denominated in currencies other than the U.S. dollar. These foreign currency exchange rate movements could create a foreign currency gain or loss that could be realized or unrealized for us. Unfavorable movements in foreign currency exchange rates between the U.S. dollar and other foreign currencies may have an adverse impact on our operations. We did not have any foreign currency forward or option contracts, other foreign currency denominated derivatives or other financial instruments open as of January 31, 2019.

We face two risks related to foreign currency exchange rates—translation risk and transaction risk. Amounts invested in our foreign operations are translated into U.S. dollars using period-end exchange rates. The resulting translation adjustments are recorded as a component of accumulated other comprehensive loss in the Consolidated Balance Sheets. Revenues and expenses in foreign currencies translate into higher or lower revenues and expenses in U.S. dollars as the U.S. dollar weakens or strengthens against other currencies. Our international subsidiaries also hold U.S. dollar and euro-based net monetary accounts subject to revaluation that results in realized or unrealized foreign currency gains or losses. Furthermore, we have exposure to foreign exchange fluctuations arising from the remeasurement of non-functional currency assets, liabilities and intercompany balances into U.S. dollars for financial reporting purposes.

For fiscal 2019, 2018 and 2017, approximately 51% of our revenue was denominated in foreign currencies. We also incurred a significant portion of our expenses in currencies other than the U.S. dollar, approximately 41% for both fiscal 2019 and 2018 and 40% for fiscal 2017. Based on a hypothetical 10% adverse movement in all foreign currency exchange rates, our revenue would be adversely affected by approximately 5% partially offset by a positive effect on our expenses of approximately 4%, and our operating income would be adversely affected by approximately 37%.

For fiscal 2019, 2018 and 2017, foreign currency transaction and remeasurement (gains) losses totaled \$(0.2) million, \$2.5 million and \$0.2 million, respectively, and are included in “Other (income) expense, net” in our Consolidated Statements of Operations and Comprehensive Income (Loss). We performed a sensitivity analysis on the net U.S. dollar and euro-based monetary accounts subject to revaluation that are held by our international subsidiaries and on the non-functional currency assets, liabilities and intercompany balances that are remeasured into U.S. dollars. A hypothetical 10% adverse movement in all foreign currency exchange rates would result in foreign currency transaction and remeasurement losses of approximately \$3.9 million.

These estimates assume an adverse shift in all foreign currency exchange rates against the U.S. dollar, which do not always move in the same direction or in the same degrees, and actual results may differ materially from the hypothetical analysis.

Interest Rates. We invest our surplus cash in a variety of financial instruments, consisting principally of short-term marketable securities with maturities of less than 90 days at the date of purchase. Our investment securities are held for purposes other than trading. Cash balances held by subsidiaries are invested primarily in registered money market funds with local operating banks. Based on an interest rate sensitivity analysis of our cash and equivalents, we estimate a 10% adverse change in interest rates from the 2019 fiscal year-end rates would not have a material adverse effect on our cash flows or financial condition for the next fiscal year.

Our debt is comprised of a loan agreement, secured by real property, which bears interest at the one-month LIBOR rate plus 2.25%. In conjunction with the loan agreement we entered into an interest rate swap. The swap agreement has an initial notional amount and schedule matching that of the underlying loan that synthetically fixes the interest rate on the debt at 4.31%.

Our interest rate swap is accounted for using mark-to-market accounting. Accordingly, changes in the fair value of the swap each reporting period are adjusted through earnings, subjecting us to non-cash volatility in our results of operations. We prepared a sensitivity analysis using a modeling technique that measures the change in the fair values arising from a hypothetical 10% adverse movement in levels of interest rates across the entire yield curve, with all other variables held constant. Based upon the results of this analysis a 10% adverse change in interest rates from the January 31, 2019 rates would cause a \$0.1 million reduction in our results of operations. We believe it is prudent to hedge the expected volatility of the variable rate mortgage on our corporate headquarters. The swap fixes the interest rate on our mortgage to 4.31% over the entire term of the mortgage. Although the agreement allows us to prepay the loan and exit the agreement early, we have no intention of doing so. As a result, we will have non-cash adjustments through earnings each reporting period. However, over the term of the mortgage, the net impact of these mark-to-market adjustments on earnings will be zero.

ITEM 8. *FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA*

The response to this item is included in Item 15 of this Annual Report on Form 10-K.

ITEM 9. *CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE*

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

QAD maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in reports that it files or submits under the Securities Exchange Act of 1934 (the “Exchange Act”) is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to management, including the Chief Executive Officer and the Chief Financial Officer, to allow timely decisions regarding required disclosure. QAD’s management, under the supervision and with the participation of the Chief Executive Officer and the Chief Financial Officer, evaluated the effectiveness of QAD’s disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, QAD’s Chief Executive Officer and Chief Financial Officer have concluded that QAD’s disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) were effective at a reasonable assurance level.

(b) Management’s Report on Internal Control Over Financial Reporting

QAD’s management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. QAD’s system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. QAD’s internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of QAD’s assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that QAD’s receipts and expenditures are being made only in accordance with authorizations of QAD’s management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of QAD’s assets that could have a material effect on the financial statements.

Management has assessed the effectiveness of QAD’s internal control over financial reporting as of January 31, 2019 based on the criteria described in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Based on management’s assessment, management has concluded that QAD’s internal control over financial reporting was effective at the reasonable assurance level as of January 31, 2019. We reviewed the results of management’s assessment with our Audit Committee.

Our independent registered public accounting firm, KPMG LLP, has audited our internal control over financial reporting as of January 31, 2019, as stated in their report included in this Annual Report on Form 10-K.

(c) Changes in Internal Control over Financial Reporting

There were no changes in the Company’s internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Exchange Act Rules 13a-15 or 15d-15 that occurred during our last fiscal quarter that have materially affected, or are reasonably likely to materially affect, internal control over financial reporting.

(d) Limitations on the Effectiveness of Controls

QAD’s management does not expect that its disclosure controls and procedures or its internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within QAD have been detected. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information regarding QAD directors is set forth in the section entitled “Election of Directors” appearing in our Definitive Proxy Statement for the Annual Meeting of Stockholders (“Proxy Statement”) to be filed with the Securities and Exchange Commission within 120 days after the end of our fiscal year ended January 31, 2019, which information is incorporated herein by reference.

In addition, the other information required by Item 10 is incorporated by reference from the Proxy Statement.

EXECUTIVE OFFICERS OF THE REGISTRANT

Set forth below is certain information concerning our executive officers. All ages are as of March 31, 2019.

NAME	AGE	POSITION(S)
Pamela M. Lopker	64	President and Director
Anton Chilton	51	Chief Executive Officer and Director
Daniel Lender	52	Chief Financial Officer and Executive Vice President
Kara Bellamy	43	Chief Accounting Officer, Corporate Controller and Senior Vice President

Pamela M. Lopker founded QAD in 1979 and has been President since QAD Inc.’s incorporation in 1986. Ms. Lopker also served as Chairman of the Board from its incorporation until August 2018. Prior to founding QAD, Ms. Lopker served as Senior Systems Analyst for Comtek Research from 1977 to 1979. She is certified in Production and Inventory Management by the American Production and Inventory Control Society. Ms. Lopker earned a Bachelor of Arts degree in Mathematics from the University of California, Santa Barbara. The Board nominated Ms. Lopker to serve as a director because she is the founder and visionary for the Company, with over forty years of enterprise software company experience, extensive software industry expertise and a deep understanding of the Company’s products, customers, industry and global operational issues. Her history with and knowledge of QAD, combined with her unique skills, is important to the Board’s oversight of long-term strategy and provides the Board with a deep understanding of the Company’s business and operations.

Anton Chilton was appointed Chief Executive Officer and a member of QAD’s Board of Directors in December 2018. Before that, he served as Chief, Global Field Operations and Executive Vice President commencing in March 2017. Previously, he served as Executive Vice President, Global Services beginning in June 2015. Mr. Chilton joined QAD in 2004 as Services Director of the Company’s Asia-Pacific region, based in Australia. He subsequently served as Managing Director of QAD Australia and New Zealand from 2006 to 2009. Mr. Chilton transferred to QAD’s headquarters in 2009, serving as Senior Vice President – Strategic Global Accounts until 2011, when he became Senior Vice President - Professional Services. Prior to joining QAD, Mr. Chilton held senior roles in global systems integration at Atos Origin and Cap Gemini. Mr. Chilton began his career at British Steel designing software and infrastructure solutions and received his education in the Submarine Service, British Royal Navy. Mr. Chilton has an Executive MBA from INSEAD.

Daniel Lender was first appointed Chief Financial Officer and Executive Vice President in July 2003. Previously, he served as QAD’s Vice President of Global Sales Operations and Vice President of Latin America. Mr. Lender joined QAD in 1998 as Treasurer following a nine-year tenure with the former Republic National Bank of New York, last serving as Vice President and Treasurer of the Bank’s Delaware subsidiary. He earned a Master of Business Administration degree from the Wharton School of the University of Pennsylvania and a Bachelor of Science degree in applied economics and business management from Cornell University.

Kara Bellamy has served as Chief Accounting Officer, Corporate Controller and Senior Vice President since January 2008. Previously, she served as QAD’s Director of Finance, Americas beginning in 2006 and joined QAD as Assistant Corporate Controller in 2004. Prior to joining QAD, Ms. Bellamy served as Corporate Controller for Somera Communications, Inc. from 2002 through 2004. Prior to that, she was an audit manager with Ernst & Young. Ms. Bellamy is a Certified Public Accountant (inactive) and received a Bachelor of Arts degree in business economics with an accounting emphasis from the University of California, Santa Barbara.

ITEM 11. EXECUTIVE COMPENSATION

Information regarding executive compensation is set forth under the caption “Executive Compensation” in the Proxy Statement, which information is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information regarding security ownership of certain beneficial owners and management is set forth under the caption “Stock Ownership of Directors, Executive Officers and Certain Beneficial Owners” in the Proxy Statement, which information is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information regarding certain relationships and related transactions is set forth under the caption “Certain Relationships and Related Party Transactions” in the Proxy Statement, which information is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information regarding services performed by, and fees paid to, our independent auditors is set forth under the caption “Principal Accountant Fees and Services” in the Proxy Statement, which information is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

1. INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Consolidated Balance Sheets as of January 31, 2019 and 2018	59
Consolidated Statements of Operations and Comprehensive Income (Loss) for the years ended January 31, 2019, 2018 and 2017	60
Consolidated Statements of Stockholders' Equity for the years ended January 31, 2019, 2018 and 2017	61
Consolidated Statements of Cash Flows for the years ended January 31, 2019, 2018 and 2017	62
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2. INDEX TO FINANCIAL STATEMENT SCHEDULES

The following financial statement schedule is filed as a part of this Annual Report on Form 10-K:

	Page
SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS	90

All other schedules are omitted because they are not required or the required information is presented in the financial statements or notes thereto.

3. INDEX OF EXHIBITS

See the Index of Exhibits at page 91.

ITEM 16. FORM 10-K SUMMARY

None.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
QAD Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of QAD Inc. and subsidiaries (the Company) as of January 31, 2019 and 2018, the related consolidated statements of operations and comprehensive income (loss), stockholders' equity, and cash flows for each of the years in the three-year period ended January 31, 2019, and the related notes and financial statement schedule II (collectively, the consolidated financial statements). We also have audited 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.

In our opinion, the consolidated financial statements referred to above 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 years in the three-year period ended January 31, 2019, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective 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.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for revenue recognition effective February 1, 2018 due to the adoption of Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers*.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

We have served as the Company's auditor since 1990.

Los Angeles, California
April 16, 2019

QAD INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)

	January 31,	
	2019	2018
Assets		
Current assets:		
Cash and equivalents	\$ 139,413	\$ 147,023
Short-term investments	1,200	—
Accounts receivable, net of allowances of \$2,901 and \$1,763 at January 31, 2019 and 2018, respectively	81,577	83,518
Other current assets	22,150	15,856
Total current assets	244,340	246,397
Property and equipment, net	29,621	30,408
Capitalized software costs, net	1,598	990
Goodwill	12,423	11,023
Deferred tax assets, net	16,172	7,944
Other assets, net	13,020	3,055
Total assets	<u>\$ 317,174</u>	<u>\$ 299,817</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Current portion of long-term debt	\$ 487	\$ 466
Accounts payable	9,902	14,818
Deferred revenue	115,253	116,693
Other current liabilities	40,348	43,460
Total current liabilities	165,990	175,437
Long-term debt	12,836	13,313
Other liabilities	5,101	5,439
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, \$0.001 par value. Authorized 5,000,000 shares; none issued or outstanding	—	—
Common stock:		
Class A, \$0.001 par value. Authorized 71,000,000 shares; issued 16,605,215 shares at both January 31, 2019 and 2018	16	16
Class B, \$0.001 par value. Authorized 4,000,000 shares; issued 3,537,380 shares at both January 31, 2019 and 2018	4	4
Additional paid-in capital	196,723	200,456
Treasury stock, at cost (241,667 Class A shares and 273,474 Class B shares at January 31, 2019 and 572,983 Class A shares and 319,717 Class B shares at January 31, 2018)	(7,350)	(12,461)
Accumulated deficit	(48,485)	(75,559)
Accumulated other comprehensive loss	(7,661)	(6,828)
Total stockholders' equity	133,247	105,628
Total liabilities and stockholders' equity	<u>\$ 317,174</u>	<u>\$ 299,817</u>

See accompanying notes to consolidated financial statements.

QAD INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)
(in thousands, except per share data)

	Years Ended January 31,		
	2019	2018	2017
Revenue:			
Subscription fees	\$ 91,861	\$ 69,615	\$ 52,167
License fees	25,568	25,807	23,633
Maintenance and other	122,936	128,142	130,406
Professional services	92,651	81,454	71,767
Total revenue	333,016	305,018	277,973
Costs of revenue:			
Subscription fees	34,128	30,563	27,027
License fees	2,714	2,946	2,990
Maintenance and other	31,307	31,246	30,517
Professional services	87,735	84,670	70,317
Total cost of revenue	155,884	149,425	130,851
Gross profit	177,132	155,593	147,122
Operating expenses			
Sales and marketing	78,207	75,368	67,194
Research and development	53,993	47,661	43,587
General and administrative	35,248	35,222	32,318
Amortization of intangible assets from acquisitions	111	416	659
Total operating expenses	167,559	158,667	143,758
Operating income (loss)	9,573	(3,074)	3,364
Other (income) expense:			
Interest income	(2,600)	(1,547)	(696)
Interest expense	643	669	670
Other (income) expense, net	(387)	2,012	(436)
Total other (income) expense, net	(2,344)	1,134	(462)
Income (loss) before income taxes	11,917	(4,208)	3,826
Income tax expense	1,489	4,857	19,276
Net income (loss)	\$ 10,428	\$ (9,065)	\$ (15,450)
Basic net income (loss) per share:			
Class A	\$ 0.55	\$ (0.49)	\$ (0.84)
Class B	\$ 0.46	\$ (0.41)	\$ (0.70)
Diluted net income (loss) per share:			
Class A	\$ 0.50	\$ (0.49)	\$ (0.84)
Class B	\$ 0.44	\$ (0.41)	\$ (0.70)
Net income (loss)	\$ 10,428	\$ (9,065)	\$ (15,450)
Other comprehensive (loss) income			
Foreign currency translation adjustment	(833)	1,803	98
Total comprehensive income (loss)	\$ 9,595	\$ (7,262)	\$ (15,352)

See accompanying notes to consolidated financial statements.

QAD INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	Number of Shares			Amount		Additional	Treasury	Accumulated	Accumulated	Total
	Class A	Class B	Treasury	Class A	Class B	Paid-in Capital	Stock	Deficit	Other Comprehensive Loss	Stockholders' Equity
Balance, January 31, 2016	16,604	3,537	(1,366)	\$ 16	\$ 4	\$ 195,420	\$ (18,717)	\$ (40,983)	\$ (8,729)	\$ 127,011
Cumulative effect of the adoption of ASU 2016-09	—	—	—	—	—	388	—	607	—	995
Adjusted balance at February 1, 2016	16,604	3,537	(1,366)	\$ 16	\$ 4	\$ 195,808	\$ (18,717)	\$ (40,376)	\$ (8,729)	\$ 128,006
Net loss	—	—	—	—	—	—	—	(15,450)	—	(15,450)
Foreign currency translation adjustments	—	—	—	—	—	—	—	—	98	98
Stock award exercises	—	—	59	—	—	(1,406)	795	—	—	(611)
Stock-based compensation income tax benefits	—	—	—	—	—	89	—	—	—	89
Stock compensation expense	—	—	—	—	—	7,323	—	—	—	7,323
Dividends declared (\$0.288 and \$0.24 per Class A and Class B share, respectively)	—	—	—	—	—	—	—	(5,301)	—	(5,301)
Restricted stock	1	—	182	—	—	(4,220)	2,752	—	—	(1,468)
Balance, January 31, 2017	16,605	3,537	(1,125)	\$ 16	\$ 4	\$ 197,594	\$ (15,170)	\$ (61,127)	\$ (8,631)	\$ 112,686
Net loss	—	—	—	—	—	—	—	(9,065)	—	(9,065)
Foreign currency translation adjustments	—	—	—	—	—	—	—	—	1,803	1,803
Stock award exercises	—	—	63	—	—	(2,118)	1,129	—	—	(989)
Stock compensation expense	—	—	—	—	—	8,924	—	—	—	8,924
Dividends declared (\$0.288 and \$0.24 per Class A and Class B share, respectively)	—	—	—	—	—	—	—	(5,367)	—	(5,367)
Restricted stock	—	—	170	—	—	(3,944)	1,580	—	—	(2,364)
Balance, January 31, 2018	16,605	3,537	(892)	\$ 16	\$ 4	\$ 200,456	\$ (12,461)	\$ (75,559)	\$ (6,828)	\$ 105,628
Cumulative effect of the adoption of Topic 606 and ASU2016-16	—	—	—	—	—	—	—	22,125	—	22,125
Adjusted balance at February 1, 2018	16,605	3,537	(892)	\$ 16	\$ 4	\$ 200,456	\$ (12,461)	\$ (53,434)	\$ (6,828)	\$ 127,753
Net income	—	—	—	—	—	—	—	10,428	—	10,428
Foreign currency translation adjustments	—	—	—	—	—	—	—	—	(833)	(833)
Stock award exercises	—	—	196	—	—	(7,878)	3,430	—	—	(4,448)
Stock compensation expense	—	—	—	—	—	10,122	—	—	—	10,122
Dividends declared (\$0.288 and \$0.24 per Class A and Class B share, respectively)	—	—	—	—	—	—	—	(5,479)	—	(5,479)
Restricted stock	—	—	181	—	—	(5,977)	1,681	—	—	(4,296)
Balance, January 31, 2019	<u>16,605</u>	<u>3,537</u>	<u>(515)</u>	<u>\$ 16</u>	<u>\$ 4</u>	<u>\$ 196,723</u>	<u>\$ (7,350)</u>	<u>\$ (48,485)</u>	<u>\$ (7,661)</u>	<u>\$ 133,247</u>

QAD INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Years Ended January 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income (loss)	\$ 10,428	\$ (9,065)	\$ (15,450)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	5,517	5,772	6,046
Amortization of costs capitalized to obtain and fulfill contracts	4,176	—	—
Provision for doubtful accounts and sales adjustments	1,752	1,021	237
Loss on disposal of property and equipment	34	85	41
Net change in valuation allowance	3,224	1,695	16,861
Other deferred income taxes	(4,677)	(2,171)	(2,035)
Change in fair value of a derivative instrument	51	(377)	(485)
Stock compensation expense	10,122	8,924	7,323
Changes in assets and liabilities, net of effects from acquisitions:			
Accounts receivable	(1,515)	(12,562)	(4,141)
Costs capitalized to obtain and fulfill contracts	(4,130)	—	—
Other assets	(2,890)	(1,204)	(90)
Accounts payable	(4,369)	2,821	646
Deferred revenue	3,031	7,001	7,245
Other liabilities	(1,747)	8,478	2,482
Net cash provided by operating activities	19,007	10,418	18,680
Cash flows from investing activities:			
Purchase of property and equipment	(4,340)	(3,720)	(3,267)
Acquisition of businesses, net of cash acquired	(2,655)	—	—
Capitalized software costs	(1,067)	(1,019)	(146)
Purchase of short-term investments	(1,200)	—	—
Other, net	4	70	7
Net cash used in investing activities	(9,258)	(4,669)	(3,406)
Cash flows from financing activities:			
Repayments of debt	(468)	(445)	(434)
Dividends paid	(5,479)	(5,367)	(5,301)
Tax payments related to stock awards	(8,744)	(3,353)	(2,079)
Net cash used in financing activities	(14,691)	(9,165)	(7,814)
Effect of exchange rates on cash and equivalents	(2,668)	5,357	(109)
Net (decrease) increase in cash and equivalents	(7,610)	1,941	7,351
Cash and equivalents at beginning of year	147,023	145,082	137,731
Cash and equivalents at end of year	\$ 139,413	\$ 147,023	\$ 145,082
Supplemental disclosure of cash flow information:			
Cash paid during the period for:			
Interest	\$ 608	\$ 651	\$ 655
Income taxes, net of refunds	3,475	3,961	3,396

See accompanying notes to consolidated financial statements.

QAD INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. SUMMARY OF BUSINESS AND SIGNIFICANT ACCOUNTING POLICIES

BUSINESS

QAD is a leading provider of flexible, cloud-based enterprise software and services for global manufacturing companies. QAD Enterprise Applications supports operational requirements in the areas of financials, customer management, supply chain, manufacturing, service and support, analytics, business process management and integration. QAD's portfolio includes related solutions for quality management software, supply chain management software, transportation management software and business-to-business interoperability. QAD solutions are developed for customers in the automotive, consumer products, food and beverage, high technology, industrial manufacturing and life sciences industries to help streamline their processes, improve operational performance, comply with regulatory requirements and meet industry standards. QAD was founded in 1979, incorporated in California in 1986 and reincorporated in Delaware in 1997.

PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of QAD Inc. and all of its subsidiaries. All subsidiaries are wholly-owned and all significant balances and transactions among the entities have been eliminated from the consolidated financial statements.

USE OF ESTIMATES

The financial statements have been prepared in conformity with U.S. generally accepted accounting principles and, accordingly, include amounts based on informed estimates and judgments of management that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the Company's financial statements, and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates. Changes in estimates resulting from continuing changes in the economic environment will be reflected in the financial statements in future periods.

The Company considers certain accounting policies related to revenue, accounts receivable allowances for doubtful accounts, goodwill and intangible assets, income taxes, and accounting for stock-based compensation to be critical policies due to the significance of these items to its operating results and the estimation processes and management judgment involved in each.

FOREIGN CURRENCY TRANSLATIONS AND TRANSACTIONS

The financial position and results of operations of the Company's foreign subsidiaries are generally determined using the country's local currency as the functional currency. Assets and liabilities recorded in foreign currencies are translated at the exchange rates on the balance sheet date. Revenue and expenses are translated at average rates of exchange prevailing during the year. Translation adjustments resulting from this process are charged or credited to other comprehensive income (loss), which is included in "Accumulated other comprehensive loss" within the Consolidated Balance Sheets.

Gains and losses resulting from foreign currency transactions and remeasurement adjustments of monetary assets and liabilities not held in an entity's functional currency are included in earnings. Foreign currency transaction and remeasurement (gains) losses for fiscal 2019, 2018 and 2017 totaled \$(0.2) million, \$2.5 million and \$0.2 million, respectively, and are included in "Other (income) expense, net" in the accompanying Consolidated Statements of Operations and Comprehensive Income (Loss).

CASH AND EQUIVALENTS

Cash and equivalents consist of cash and short-term marketable securities with maturities of less than 90 days at the date of purchase. The Company considers all highly liquid investments purchased with an original maturity of 90 days or less to be cash equivalents. At January 31, 2019 and 2018, the Company's cash and equivalents consisted of money market mutual funds invested in U.S. Treasury and government securities, deposit accounts and certificates of deposit.

SHORT-TERM INVESTMENTS

At January 31, 2019, the Company's short-term investments consisted of certificates of deposit with maturities greater than 90 days and less than one year. Short-term investments are classified as held-to-maturity, since the Company has the intent and the ability to hold them to maturity, and are recorded at amortized cost, which approximates fair value. The Company considers all of its short-term investments as highly liquid and therefore includes these securities within current assets on the Consolidated Balance Sheets. Interest on short-term investments is included as a component of "Interest income".

ACCOUNTS RECEIVABLE, NET

Accounts receivable, net, consisted of the following as of January 31:

	2019	2018
	(in thousands)	
Accounts receivable	\$ 84,478	\$ 85,281
Less allowance for:		
Doubtful accounts	(487)	(396)
Sales adjustments	(2,414)	(1,367)
Accounts receivable, net	<u>\$ 81,577</u>	<u>\$ 83,518</u>

Trade accounts receivable are recorded at the invoiced amount and do not bear interest. The collectability of accounts receivable is reviewed each period by analyzing balances based on age. Specific allowances are recorded for any balances that the Company determines may not be fully collectible due to a customer's inability to pay. The Company also provides a general reserve based on historical data including an analysis of write-offs and other known factors. Provisions to the allowance for bad debts are included as bad debt expense in "General and Administrative" expense. The determination to write-off specific accounts receivable balances is based on the likelihood of collection and past due status. Past due status is based on invoice date and terms specific to each customer.

The Company does not generally provide a contractual right of return; however, in the course of business sales adjustments related to customer dispute resolution may occur. A provision is recorded against revenue for estimated sales adjustments in the same period the related revenues are recorded or when current information indicates additional amounts are required. These estimates are based on historical experience, specifically identified customers and other known factors.

FINANCIAL INSTRUMENTS AND CONCENTRATION OF CREDIT RISK

The carrying amounts of cash and equivalents, short-term investments, accounts receivable and accounts payable approximate fair value due to the short-term maturities of these instruments. The Company's note payable bears a variable market interest rate, subject to certain minimum interest rates. Therefore, the carrying amount outstanding under the note payable reasonably approximates fair value.

Concentration of credit risk with respect to trade receivables is limited due to the large number of customers comprising our customer base, and their dispersion across many different industries and locations throughout the world. During the fiscal year ended January 31, 2019 one customer accounted for 10% of total revenue and no other customer accounted for 10% or more of total revenue. No single customer accounted for 10% or more of the Company's total revenue during the fiscal years ended January 31, 2018 and 2017. In addition, no single customer accounted for 10% or more of accounts receivable at January 31, 2019 or 2018.

PROPERTY AND EQUIPMENT

Property and equipment are stated at cost. Additions and significant improvements to property and equipment are capitalized, while maintenance and repairs are expensed as incurred. For financial reporting purposes, depreciation is generally expensed via the straight-line method over the useful life of three years for computer equipment and software, five years for furniture and office equipment, 10 years for building improvements, and 39 years for buildings. Leasehold improvements are depreciated over the shorter of the lease term or the useful life of five years.

Certain costs associated with software developed for internal use, including payroll costs for employees, are capitalized once the project has reached the application development stage and are included in property and equipment classified as software. These costs are amortized using the straight-line method over the expected useful life of the software, beginning when the asset is substantially ready for use. Costs incurred during the preliminary project stage, maintenance, training and research and development costs are expensed as incurred.

Property and equipment, net consisted of the following as of January 31:

	2019	2018
	(in thousands)	
Buildings and building improvements	\$ 32,238	\$ 32,444
Computer equipment and software	17,671	17,312
Furniture and office equipment	7,672	7,632
Leasehold improvements	7,309	6,677
Land	3,850	3,850
Automobiles	54	54
	<u>68,794</u>	<u>67,969</u>
Less accumulated depreciation and amortization	(39,173)	(37,561)
	<u>\$ 29,621</u>	<u>\$ 30,408</u>

The changes in property and equipment, net, for the fiscal years ended January 31 were as follows:

	<u>2019</u>	<u>2018</u>
	<u>(in thousands)</u>	
Cost		
Balance at February 1	\$ 67,969	\$ 64,642
Additions	4,340	3,720
Disposals	(2,512)	(1,874)
Impact of foreign currency translation	(1,003)	1,481
Balance at January 31	<u>68,794</u>	<u>67,969</u>
Accumulated depreciation		
Balance at February 1	(37,561)	(33,770)
Depreciation	(4,734)	(4,562)
Disposals	2,474	1,719
Impact of foreign currency translation	648	(948)
Balance at January 31	<u>(39,173)</u>	<u>(37,561)</u>
Property and equipment, net at January 31	<u>\$ 29,621</u>	<u>\$ 30,408</u>

Depreciation and amortization expense of property and equipment for fiscal 2019, 2018 and 2017 was \$4.7 million, \$4.6 million and \$4.3 million, respectively. There was no impairment of property and equipment assets during fiscal 2019, 2018 and 2017.

CAPITALIZED SOFTWARE COSTS

The Company capitalizes software development costs incurred in connection with the localization and translation of its products once technological feasibility has been achieved based on a working model. A working model is defined as an operative version of the computer software product that is completed in the same software language as the product to be ultimately marketed, performs all the major functions planned for the product and is ready for initial customer testing (usually identified as beta testing). In addition, the Company capitalizes software purchased from third parties or through business combinations as acquired software technology, if the related software under development has reached technological feasibility.

The amortization of capitalized software costs is the greater of the straight-line basis over three years, the expected useful life, or a computation using a ratio of current revenue for a product compared to the estimated total of current and future revenues for that product. The Company periodically compares the unamortized capitalized software costs to the estimated net realizable value of the associated product. The amount by which the unamortized capitalized software costs of a particular software product exceeds the estimated net realizable value of that asset would be reported as a charge to the Consolidated Statements of Operations and Comprehensive Income (Loss).

Capitalized software costs and accumulated amortization at January 31 were as follows:

	<u>2019</u>	<u>2018</u>
	<u>(in thousands)</u>	
Capitalized software costs:		
Capitalized software development costs	\$ 2,314	\$ 1,516
Acquired software technology	135	—
	<u>2,449</u>	<u>1,516</u>
Less accumulated amortization	(851)	(526)
Capitalized software costs, net	<u>\$ 1,598</u>	<u>\$ 990</u>

The Company's capitalized software development costs relate to translations and localizations of QAD Enterprise Applications. Acquired software technology costs relate to technology purchased during the second quarter of fiscal 2019.

It is the Company's policy to write off capitalized software development costs once fully amortized. Accordingly, during fiscal 2019, \$0.3 million of costs and accumulated amortization was removed from the Consolidated Balance Sheet and was primarily related to acquired software technology which was fully amortized during fiscal 2019.

Amortization of capitalized software costs for fiscal 2019, 2018 and 2017 was \$0.6 million, \$0.8 million and \$1.0 million, respectively. Amortization of capitalized software costs is included in "Cost of license fees" in the accompanying Consolidated Statements of Operations and Comprehensive Income (Loss).

The following table summarizes the estimated amortization expense relating to the Company's capitalized software costs as of January 31, 2019:

Fiscal Years	(in thousands)
2020	\$ 759
2021	572
2022	226
2023	27
Thereafter	14
	<u>\$ 1,598</u>

GOODWILL AND INTANGIBLE ASSETS

Goodwill represents the excess of the purchase price over the fair value of net assets of purchased businesses. Goodwill is not amortized, but instead is subject to impairment tests on at least an annual basis and whenever circumstances suggest that goodwill may be impaired. The Company tests goodwill for impairment in the fourth quarter of each fiscal year. The Company performs a two-step impairment test. Under the first step of the goodwill impairment test, the Company is required to compare the fair value of a reporting unit with its carrying amount, including goodwill. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not considered impaired and the second step is not performed. If the results of the first step of the impairment test indicate that the fair value of a reporting unit does not exceed its carrying amount, then the second step of the goodwill impairment test is required. The second step of the goodwill impairment test compares the implied fair value of the reporting unit goodwill with the carrying amount of that goodwill. The impairment loss is measured by the excess of the carrying amount of the reporting unit goodwill over the implied fair value of that goodwill.

Management evaluates the Company as a single reporting unit for business and operating purposes as almost all of the Company's revenue streams are generated by the same underlying technology whether acquired, purchased or developed. In addition, the majority of the Company's costs are, by their nature, shared costs that are not specifically identifiable to a geography or product line but relate to almost all products. As a result, there is a high degree of interdependency among the Company's revenues and cash flows for levels below the consolidated entity and identifiable cash flows for a component separate from the consolidated entity are not meaningful. Therefore, the Company's impairment test considers the consolidated entity as a single reporting unit.

Judgments about the recoverability of purchased finite lived intangible assets are made whenever events or changes in circumstances indicate that an impairment may exist. Each fiscal year the Company evaluates the estimated remaining useful lives of purchased intangible assets and whether events or changes in circumstances warrant a revision to the remaining periods of amortization. Recoverability of finite-lived intangible assets is measured by comparison of the carrying amount of the asset to the future undiscounted cash flows the asset is expected to generate.

Assumptions and estimates about future values and remaining useful lives of intangible assets are complex and 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 the Company's business strategy or internal forecasts.

The changes in the carrying amount of goodwill for the fiscal years ended January 31, 2018 and 2019 were as follows:

	Gross Carrying Amount	Accumulated Impairment (in thousands)	Goodwill, Net
Balance at January 31, 2017	\$ 26,166	\$ (15,608)	\$ 10,558
Impact of foreign currency translation	465	—	465
Balance at January 31, 2018	26,631	(15,608)	11,023
Additions	1,510	—	1,510
Impact of foreign currency translation	(110)	—	(110)
Balance at January 31, 2019	<u>\$ 28,031</u>	<u>\$ (15,608)</u>	<u>\$ 12,423</u>

Additions to goodwill were a result of immaterial acquisitions where the purchase price exceeded the estimated fair value of the acquired net assets. Pro forma financial information for the acquisitions has not been presented, as the effects were not material to the Company's historical consolidated financial statements.

During each of the fourth quarters of fiscal 2019, 2018 and 2017, an impairment analysis was performed at the enterprise level which compared the Company's market capitalization to its net assets as of the test date, November 30. As the market capitalization substantially exceeded the Company's net assets, there was no indication of goodwill impairment for fiscal 2019, 2018 and 2017.

Intangible Assets

	January 31, 2019
	(in thousands)
Amortizable intangible assets	
Customer relationships	\$ 1,348
Less: accumulated amortization	(115)
Net amortizable intangible assets	<u>\$ 1,233</u>

The Company's intangible assets as of January 31, 2019 are related to the acquisitions completed in the second and third quarters of fiscal 2019. Intangible assets are included in "Other assets, net" in the accompanying Consolidated Balance Sheets, and are amortized over an estimated 5 year useful life.

The following table summarizes the estimated amortization expense relating to the Company's intangible assets as of January 31, 2019:

Fiscal Years	(in thousands)
2020	\$ 270
2021	270
2022	270
2023	270
Thereafter	153
	<u>\$ 1,233</u>

INCOME TAXES

Income tax expense includes U.S. (federal and state) and foreign income taxes. Tax legislation commonly known as the Tax Cuts and Jobs Act of 2017 (the "Tax Act") includes a mandatory one-time tax on accumulated earnings of foreign subsidiaries, and as a result, all previously unremitted earnings for which no U.S. deferred tax liability had been accrued have now become subject to U.S. federal income tax. The Company has completed the accounting associated with the Tax Act. The U.S. Securities and Exchange Commission ("SEC") provided accounting and reporting guidance that allowed the Company to report provisional amounts within a measurement period up to one year from the enactment date. Complexities inherent in adopting the changes included additional guidance, interpretations of the law, and further analysis of data and tax positions. During fiscal 2019, as part of completing its accounting, the Company recognized approximately \$1.3 million reduction to its final tax liability related to the Tax Act due to the ability to utilize additional foreign tax credits. The Company intends to continue to invest most or all of these earnings, as well as its capital in these subsidiaries, indefinitely outside of the U.S. and does not expect to incur any significant, additional taxes related to such amounts.

Deferred tax assets and liabilities reflect the effects of temporary differences between the carrying amounts of assets and liabilities and their tax bases and are stated at enacted tax rates under current enacted tax law that would apply when the temporary differences are expected to reverse. Deferred tax assets are evaluated for future realization and reduced by a valuation allowance to the extent the Company believes they will not be realized. The Company considers many factors when assessing the likelihood of future realization of its deferred tax assets, including recent cumulative loss experience and expectations of future earnings, the carry-forward periods available to the Company for tax reporting purposes, and other relevant factors.

The Company utilizes a two-step approach to recognizing and measuring uncertain income tax positions (tax contingencies). The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes. The second step is to measure the tax benefit as the largest amount which is more than 50% likely of being realized upon ultimate settlement. The Company considers many factors when evaluating its tax positions and estimating its tax benefits, which may require periodic adjustments and which may not accurately forecast actual outcomes. The Company includes interest and penalties related to its tax contingencies in income tax expense.

STOCK-BASED COMPENSATION

The Company accounts for share-based payments (“equity awards”) to employees in accordance with ASC 718, *Compensation—Stock Compensation* (“ASC 718”), which requires that share-based payments (to the extent they are compensatory) be recognized in the Consolidated Statements of Income and Comprehensive Income based on the fair values of the equity awards as measured at the grant date. The fair value of an equity award is recognized as stock-based compensation expense ratably over the vesting period of the equity award. Determining the fair value of equity awards at the grant date requires judgment.

Fair Value of RSUs

The fair value of restricted stock units (“RSUs”) is determined on the grant date of the award as the market price of the Company’s common stock on the date of grant, reduced by the present value of estimated dividends foregone during the vesting period. Judgment is required in determining the present value of estimated dividends foregone during the vesting period. The Company estimates the dividends for purposes of this calculation based on the Company’s historical dividend payments per share, which has remained consistent over the last three years.

Fair Value of SARs

The fair value of stock-settled stock appreciation rights (“SARs”) is determined on the grant date of the award using the Black-Scholes-Merton valuation model. One of the inputs to the Black-Scholes-Merton valuation model is the fair market value of the Company’s stock on the date of grant. Judgment is required in determining the remaining inputs to the Black-Scholes-Merton valuation model. These inputs include the expected life, volatility, the risk-free interest rate and the dividend rate. The following describes the Company’s policies with respect to determining these valuation inputs:

Expected Life - The expected life valuation input includes a computation that is based on historical vested SAR exercises and post-vest expiration patterns and an estimate of the expected life for SARs that were fully vested and outstanding. Furthermore, based on the Company’s historical pattern of SAR exercises and post-vest expiration patterns the Company determined that there are two discernible populations which include the Company’s directors and officers (“D&O”) and all other QAD employees. The estimate of the expected life for SARs that were fully vested and outstanding is determined as the midpoint of a range as follows: the low end of the range assumes the fully vested and outstanding SARs are exercised or expire unexercised on the evaluation date and the high end of the range assumes that these SARs are exercised or expire unexercised upon contractual term.

Volatility - The volatility valuation input is based on the historical volatility of the Company’s common stock, which the Company believes is representative of the expected volatility over the expected life of SARs.

Risk-Free Interest Rate - The risk-free interest rate is based on the U.S. Treasury constant maturities in effect at the time of grant for the expected term of the SARs.

Dividend Rate - The dividend rate is based on the Company’s historical dividend payments per share.

The Company records deferred tax assets for equity awards that result in deductions on its income tax returns, based on the amount of stock-based compensation recognized and the fair values attributable to the vested portion of those equity awards. Because the deferred tax assets the Company records are based upon the stock-based compensation expenses in a particular jurisdiction, the aforementioned inputs that affect the fair values of equity awards may also indirectly affect the income tax expense. If the tax deduction is less than the deferred tax asset, the calculated shortfall would increase income tax expense. If the tax deduction is more than the deferred tax asset, the calculated windfall would decrease income tax expense.

COMPREHENSIVE INCOME (LOSS)

Comprehensive income (loss) includes changes in the balances of items that are reported directly as a separate component of Stockholders’ Equity on the Consolidated Balance Sheets. The components of comprehensive income (loss) are net income (loss) and foreign currency translation adjustments. The Company does not provide for income taxes on foreign currency translation adjustments since it does not provide for taxes on the unremitted earnings of its foreign subsidiaries. The changes in “Accumulated other comprehensive loss” are included in the Company’s Consolidated Statements of Operations and Comprehensive Income (Loss).

ADVERTISING EXPENSES

Advertising costs are expensed as incurred. Advertising expenses were \$0.7 million, \$0.7 million and \$1.1 million for fiscal years 2019, 2018 and 2017.

RESEARCH AND DEVELOPMENT

All costs incurred to establish the technological feasibility of the Company's software products are expensed to research and development ("R&D") as incurred. R&D expenses totaled \$54.0 million, \$47.7 million and \$43.6 million in fiscal years 2019, 2018 and 2017, respectively.

OTHER (INCOME) EXPENSE, NET

The components of other (income) expense, net for fiscal 2019, 2018 and 2017 were as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Interest income	\$ (2,600)	\$ (1,547)	\$ (696)
Interest expense	643	669	670
Foreign exchange (gains) losses	(229)	2,466	180
Change in fair value of interest rate swap	51	(377)	(485)
Other income, net	(209)	(77)	(131)
Total other (income) expense, net	<u>\$ (2,344)</u>	<u>\$ 1,134</u>	<u>\$ (462)</u>

COMPUTATION OF NET INCOME (LOSS) PER SHARE

Net income (loss) per share of Class A common stock and Class B common stock is computed using the two-class method. Holders of Class A common stock are entitled to cash or stock dividends equal to 120% of the amount of such dividend payable with respect to a share of Class B common stock.

The following table sets forth the computation of basic and diluted net income (loss) per share:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands, except per share data)		
Net income (loss)	\$ 10,428	\$ (9,065)	\$ (15,450)
Less: dividends declared	(5,479)	(5,367)	(5,301)
Undistributed net income (loss)	<u>\$ 4,949</u>	<u>\$ (14,432)</u>	<u>\$ (20,751)</u>
Net income (loss) per share – Class A Common Stock			
Dividends declared	\$ 4,696	\$ 4,596	\$ 4,531
Allocation of undistributed net income (loss)	4,243	(12,358)	(17,742)
Net income (loss) attributable to Class A common stock	<u>\$ 8,939</u>	<u>\$ (7,762)</u>	<u>\$ (13,211)</u>
Weighted average shares of Class A common stock outstanding— <i>basic</i>	16,267	15,942	15,715
Weighted average potential shares of Class A common stock	1,585	—	—
Weighted average shares of Class A common stock and potential common shares outstanding— <i>diluted</i>	<u>17,852</u>	<u>15,942</u>	<u>15,715</u>
Basic net income (loss) per Class A common share	<u>\$ 0.55</u>	<u>\$ (0.49)</u>	<u>\$ (0.84)</u>
Diluted net income (loss) per Class A common share	<u>\$ 0.50</u>	<u>\$ (0.49)</u>	<u>\$ (0.84)</u>
Net income (loss) per share – Class B Common Stock			
Dividends declared	\$ 783	\$ 771	\$ 770
Allocation of undistributed net income (loss)	706	(2,074)	(3,009)
Net income (loss) attributable to Class B common stock	<u>\$ 1,489</u>	<u>\$ (1,303)</u>	<u>\$ (2,239)</u>
Weighted average shares of Class B common stock outstanding— <i>basic</i>	3,256	3,213	3,206
Weighted average potential shares of Class B common stock	166	—	—
Weighted average shares of Class B common stock and potential common shares outstanding— <i>diluted</i>	<u>3,422</u>	<u>3,213</u>	<u>3,206</u>
Basic net income (loss) per Class B common share	<u>\$ 0.46</u>	<u>\$ (0.41)</u>	<u>\$ (0.70)</u>
Diluted net income (loss) per Class B common share	<u>\$ 0.44</u>	<u>\$ (0.41)</u>	<u>\$ (0.70)</u>

Potential common shares consist of the shares issuable upon the release of restricted stock units (“RSUs”) and the exercise of stock options and stock appreciation rights (“SARs”). The Company’s unvested RSUs, unexercised stock options and unexercised SARs are not considered participating securities as they do not have rights to dividends or dividend equivalents prior to release or exercise.

The following table sets forth the number of potential common shares not included in the calculation of diluted earnings per share because their effects were anti-dilutive:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Class A	325	3,236	2,985
Class B	—	380	378

RECENT ACCOUNTING PRONOUNCEMENTS

With the exception of those discussed below, there have been no recent changes in accounting pronouncements issued by the Financial Accounting Standards Board (“FASB”) or adopted by the Company during the fiscal year ended January 31, 2019, that are of significance, or potential significance, to the Company.

Recent Accounting Pronouncements Adopted

In October 2016, the FASB issued ASU 2016-16, *Intra-Entity Transfers of Assets Other Than Inventory*, which removes the prohibition against the immediate recognition of the current and deferred income tax effects of intra-entity transfers other than inventory. The guidance is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2017 with early adoption permitted as of the beginning of the annual reporting period in which the ASU was issued. ASU 2016-16 was adopted by the Company effective February 1, 2018 on a modified retrospective basis, resulting in a \$9.6 million decrease to accumulated deficit and a corresponding increase to deferred tax assets.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows (Topic 230) Classification of Certain Cash Receipts and Cash Payments*, that modifies how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The guidance is effective for fiscal years beginning after December 15, 2017 and interim periods within those fiscal years, with earlier adoption permitted. ASU 2016-15 was adopted by the Company effective February 1, 2018 on a retrospective basis, with no material changes reflected in the Consolidated Statement of Cash Flows.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers* (Topic 606), which supersedes the revenue recognition requirements in *Revenue Recognition* (Topic 605) and Subtopic 985-605 *Software - Revenue Recognition*. Topic 605 and Subtopic 985-605 are collectively referred to as “Topic 605” or “prior GAAP.” Under Topic 606, revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In addition, Topic 606 requires enhanced disclosures, including disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.

The Company adopted Topic 606 on the first day of fiscal 2019 using the modified retrospective transition method. Under this method, QAD evaluated contracts that were in effect at the beginning of fiscal 2019 as if those contracts had been accounted for under Topic 606. The Company did not evaluate individual modifications for those periods prior to the adoption date, but the aggregate effect of all modifications as of the adoption date and such effects are provided below. Under the modified retrospective transition method, periods prior to the adoption date were not adjusted and continue to be reported in accordance with historical, pre-Topic 606 accounting. A cumulative catch-up adjustment was recorded to beginning accumulated deficit to reflect the impact of all existing arrangements under Topic 606.

The most significant impacts of the adoption of Topic 606 were as follows:

- Removal of vendor specific objective evidence (“VSOE”) under prior GAAP resulted in earlier recognition of license and services revenues in those instances where the Company sold a multi-element deal where services did not have VSOE. At adoption, QAD decreased accumulated deficit and deferred revenue by \$2.0 million as this revenue would otherwise have been recognized in future periods according to prior GAAP;

- Removal of the limitation on contingent revenue resulted in revenue being recognized earlier for certain contracts. At adoption, QAD decreased accumulated deficit and increased contract assets by \$0.8 million as this revenue would otherwise have been recognized in future periods as invoiced according to prior GAAP;
- Contracts containing a future option to the customer represented a material right which resulted in deferral of revenue. At adoption, QAD increased accumulated deficit and deferred revenue by \$0.3 million as this revenue would have been otherwise earned in previous periods according to prior GAAP;
- Commission expenses related to new cloud and maintenance contracts are no longer expensed as incurred; rather these incremental commission costs and other associated fringe benefits are capitalized and amortized over the associated term of economic benefit which the Company has determined to be five years. As a result, QAD decreased accumulated deficit and increased other current and non-current assets by \$9.1 million at the adoption date;
- Sales agent fees to obtain new cloud and maintenance contracts are no longer be expensed as incurred; rather these costs will be capitalized and amortized over the associated term of economic benefit which the Company has determined to be five years. As a result, QAD decreased accumulated deficit and increased other current and non-current assets by \$1.0 million at the adoption date; and
- Cloud environment setup costs incurred to fulfill new cloud customer contracts are no longer expensed as incurred; rather these costs are capitalized and amortized over the associated term of economic benefit which the Company has determined to be five years. As a result, QAD decreased accumulated deficit and increased other current and non-current assets by \$1.5 million at the adoption date.

The tax impact of the above adjustments was assessed and, at adoption, QAD increased accumulated deficit and decreased net deferred tax assets by \$1.6 million.

Adjustments to beginning consolidated balance sheet accounts

The following table presents the cumulative effect adjustments, net of income tax effects, to beginning consolidated balance sheet accounts for the new accounting standards adopted by the Company on the first day of fiscal 2019:

	Jan. 31, 2018	Topic 606	ASU2016-16 (1)	Feb. 1, 2018
		(in thousands)		
Assets				
Current assets:				
Cash and equivalents	\$ 147,023	\$ -	\$ -	\$ 147,023
Accounts receivable, net	83,518	-	-	83,518
Other current assets, net	15,856	4,013	-	19,869
Total current assets	246,397	4,013	-	250,410
Property and equipment, net	30,408	-	-	30,408
Capitalized software costs, net	990	-	-	990
Goodwill	11,023	-	-	11,023
Deferred tax assets, net	7,944	(1,643)	9,584	15,885
Other assets, net	3,055	8,421	-	11,476
Total assets	\$ 299,817	\$ 10,791	\$ 9,584	\$ 320,192
Liabilities and stockholders' equity				
Current portion of long-term debt	\$ 466	\$ -	\$ -	\$ 466
Accounts payable	14,818	-	-	14,818
Deferred revenue	116,693	(1,239)	-	115,454
Other current liabilities	43,460	-	-	43,460
Total current liabilities	175,437	(1,239)	-	174,198
Long-term debt	13,313	-	-	13,313
Other liabilities	5,439	(511)	-	4,928
Stockholders' equity				
Common stock - Class A	16	-	-	16
Common stock - Class B	4	-	-	4
Additional paid-in capital	200,456	-	-	200,456
Treasury stock	(12,461)	-	-	(12,461)
Accumulated deficit	(75,559)	12,541	9,584	(53,434)
Accumulated other comprehensive loss	(6,828)	-	-	(6,828)
Total stockholders' equity	105,628	12,541	9,584	127,753
Total liabilities and stockholders' equity	\$ 299,817	\$ 10,791	\$ 9,584	\$ 320,192

(1) For further information about the adoption of ASU2016-16 *Intra-entity Transfers of Assets Other Than Inventory* see Note 4 "Income Taxes."

The following table summarizes the effects of adopting Topic 606 on the Company's Consolidated Balance Sheet as of January 31, 2019:

	As reported under Topic 606	Adjustments (in thousands)	Balances under Prior GAAP
Assets			
Current assets:			
Cash and equivalents	\$ 139,413	\$ -	\$ 139,413
Short-term investments	1,200	-	1,200
Accounts receivable, net	81,577	-	81,577
Other current assets, net	22,150	(3,738)	18,412
Total current assets	244,340	(3,738)	240,602
Property and equipment, net	29,621	-	29,621
Capitalized software costs, net	1,598	-	1,598
Goodwill	12,423	-	12,423
Deferred tax assets, net	16,172	206	16,378
Other assets, net	13,020	(7,989)	5,031
Total assets	\$ 317,174	\$ (11,521)	\$ 305,653
Liabilities and stockholders' equity			
Current portion of long-term debt	\$ 487	\$ -	\$ 487
Accounts payable	9,902	-	9,902
Deferred revenue	115,253	5,811	121,064
Other current liabilities	40,348	-	40,348
Total current liabilities	165,990	5,811	171,801
Long-term debt	12,836	-	12,836
Other liabilities	5,101	422	5,523
Stockholders' equity			
Common stock - Class A	16	-	16
Common stock - Class B	4	-	4
Additional paid-in capital	196,723	-	196,723
Treasury stock	(7,350)	-	(7,350)
Accumulated deficit	(48,485)	(17,757)	(66,242)
Accumulated other comprehensive loss	(7,661)	3	(7,658)
Total stockholders' equity	133,247	(17,754)	115,493
Total liabilities and stockholders' equity	\$ 317,174	\$ (11,521)	\$ 305,653

The following table summarizes the effects of adopting Topic 606 on the Company's Consolidated Statement of Income for the twelve months ended January 31, 2019:

	As reported under Topic 606	Adjustments	Balances under Prior GAAP
	(in thousands, except per share amounts)		
Revenue			
Subscription fees	\$ 91,861	\$ (1,628)	\$ 90,233
License fees	25,568	(2,538)	23,030
Maintenance and other	122,936	298	123,234
Professional services	92,651	(1,969)	90,682
Total revenue	333,016	(5,837)	327,179
Cost of revenue:			
Subscription fees	34,128	(88)	34,040
License fees	2,714	-	2,714
Maintenance and other	31,307	-	31,307
Professional services	87,735	-	87,735
Total cost of revenue	155,884	(88)	155,796
Gross profit	177,132	(5,749)	171,383
Operating expenses:			
Sales and marketing	78,207	96	78,303
Research and development	53,993	(236)	53,757
General and administrative	35,248	-	35,248
Amortization of intangible assets from acquisitions	111	-	111
Total operating expenses	167,559	(140)	167,419
Operating income	9,573	(5,609)	3,964
Other (income) expense			
Interest income	(2,600)	-	(2,600)
Interest expense	643	-	643
Other income	(387)	-	(387)
Total other income, net	(2,344)	-	(2,344)
Income before income taxes	11,917	(5,609)	6,308
Income tax expense	1,489	(393)	1,096
Net income	\$ 10,428	\$ (5,216)	\$ 5,212
Basic income per share			
Class A	\$ 0.55	\$ (0.28)	\$ 0.27
Class B	\$ 0.46	\$ (0.23)	\$ 0.23
Diluted income per share			
Class A	\$ 0.50	\$ (0.25)	\$ 0.25
Class B	\$ 0.44	\$ (0.22)	\$ 0.22

The following table summarizes the effects of adopting Topic 606 on the financial statement line items of the Company's Consolidated Statement of Cash Flows for the twelve months ended January 31, 2019:

	As reported under Topic 606	Adjustments	Balances under Prior GAAP
	(in thousands)		
Net income	\$ 10,428	\$ (5,216)	\$ 5,212
Amortization of costs capitalized to obtain and fulfill contracts	4,176	(3,348)	828
Net change in valuation allowance	3,224	648	3,872
Changes in operating assets and liabilities:			
Costs capitalized to obtain and fulfill contracts	(4,130)	3,354	(776)
Other assets	(2,890)	76	(2,814)
Deferred revenue	3,031	4,483	7,514
Net cash provided by operating activities	19,007	(3)	19,004
Effect of exchange rates on cash and equivalents	(2,668)	3	(2,665)

Recent Accounting Pronouncements Not Yet Adopted

In February 2016, the FASB established Topic 842, Leases, by issuing Accounting Standards Update ("ASU") No. 2016-02, which requires lessees to recognize leases on-balance sheet and disclose key information about leasing arrangements. Topic 842 was subsequently amended by ASU No. 2018-01, Land Easement Practical Expedient for Transition to Topic 842; ASU No. 2018-10, Codification Improvements to Topic 842, Leases; and ASU No. 2018-11, Targeted Improvements. The new standard establishes a right-of-use ("ROU") model that requires a lessee to recognize an ROU asset and lease liability on the balance sheet for all leases with a term longer than 12 months. Leases will be classified as finance or operating, with classification affecting the pattern and classification of expense recognition in the income statement. The new standard is effective for QAD on February 1, 2019. QAD will adopt the new standard on its effective date.

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 transition requirements for existing leases also apply to leases entered into between the date of initial application and the effective date. The entity must also recast its comparative period financial statements and provide the disclosures required by the new standard for the comparative periods. QAD plans to elect to use the effective date as the date of initial application. Consequently, financial information will not be updated and the disclosures required under the new standard will not be provided for dates and periods before January 31, 2019.

The new standard provides a number of optional practical expedients in transition. QAD plans to elect the 'package of practical expedients', which permits the Company not to reassess under the new standard prior conclusions about lease identification, lease classification and initial direct costs. QAD also plans to elect the use-of-hindsight practical expedient.

QAD expects that this standard will have a material effect on its financial statements. While the effects of adoption are still being assessed, the Company currently believes the most significant effects relate to the recognition of new ROU assets and lease liabilities on the balance sheet for its office facilities leases and new disclosures about leasing activities. The Company does not expect ASC 2016-02 will have a material impact to the Company's consolidated statement of operations or net cash provided by operating activities. In addition, the Company does not expect a significant change in its leasing activities between now and adoption.

On adoption, the Company currently expects to recognize additional operating liabilities and corresponding ROU assets in the range of \$11.0 million to \$16.0 million based on the present value of the remaining minimum rental payments under current leasing standards for existing leases.

The new standard also provides practical expedients for an entity's ongoing accounting. The Company currently expects to elect the short-term lease recognition exemption for all leases that qualify. This means, for those leases that qualify, the Company will not recognize ROU assets or lease liabilities, and this includes not recognizing ROU assets or lease liabilities for existing short-term leases of those assets in transition. The Company also currently expects to elect the practical expedient to not separate lease and non-lease components for all of its leases.

In January 2017, the FASB issued ASU 2017-04, Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment, which simplifies the subsequent measurement of goodwill to eliminate Step 2 from the goodwill impairment test. In addition, it eliminates the requirements for any reporting unit with a zero or negative carrying amount to perform a qualitative assessment and, if that fails that qualitative test, to perform Step 2 of the goodwill impairment test. Therefore, the same impairment assessment applies to all reporting units. The amendments will be effective for the Company's fiscal year beginning February 1, 2020. Early adoption is permitted. The new guidance is required to be applied on a prospective basis. The Company does not believe adoption of ASU 2017-04 will have a material impact on its consolidated financial statements.

2. REVENUE

QAD offers its software using the same underlying technology via two models: a traditional on-premises licensing model and a cloud-based subscription model. The on-premises model involves the sale or license of software on a perpetual basis to customers who take possession of the software and install and maintain the software on their own hardware. Under the cloud-based subscription delivery model, QAD provides access to its software on a hosted basis as a service and customers generally do not have the contractual right to take possession of the software.

The Company generates revenue through sales of licenses and maintenance provided to its on-premises customers and through subscriptions of its cloud-based software. QAD offers professional services to both its on-premises and cloud customers to assist them with the design, testing and implementation of its software.

The Company determines revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer;
- Identification of the performance obligations in the contract;
- Determination of the transaction price;
- Allocation of the transaction price to the performance obligations in the contract; and
- Recognition of revenue when, or as, the Company satisfies a performance obligation.

Revenue is presented net of sales, value-added and other taxes collected from customers and remitted to government authorities.

Performance Obligations

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account under Topic 606. The transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied by transferring the promised good or service to the customer. The Company identifies and tracks the performance obligations at contract inception so that the Company can monitor and account for the performance obligations over the life of the contract.

The Company's contracts which contain multiple performance obligations generally consist of the initial purchase of subscription or licenses and a professional services engagement. License purchases generally have multiple performance obligations as customers purchase maintenance in addition to the licenses. The Company's single performance obligation arrangements are typically maintenance renewals, subscription renewals and services engagements.

For contracts with multiple performance obligations where the contracted price differs from the standalone selling price ("SSP") for any distinct good or service, the Company may be required to allocate the contract's transaction price to each performance obligation using its best estimate for the SSP. SSP is assessed annually using a historical analysis of contracts with customers executed in the most recently completed fiscal year to determine the range of selling prices applicable to a distinct good or service.

Judgment is required to determine the SSP for each distinct performance obligation. The Company rarely licenses or sells its software products on a stand-alone basis, so the Company is required to estimate the range of SSPs for each performance obligation. In instances where SSP is not directly observable because the Company does not sell the license, product or service separately, the Company determines the SSP using information that may include market conditions and other observable inputs. In making these judgments, the Company analyzes various factors, including its pricing methodology and consistency, size of the arrangement, length of term, customer demographics and overall market and economic conditions. Based on these results, the estimated SSP is set for each distinct product or service delivered to customers.

Subscription

Subscription revenue is recognized ratably over the initial subscription period committed to by the customer commencing when the cloud environment is made available to the customer. The initial subscription period is typically 12 to 60 months. The Company generally invoices its customers in advance in quarterly or annual installments and typical payment terms provide that customers make payment within 30 days of invoice.

Software Licenses

Transfer of control for software is considered to have occurred upon electronic delivery of the license key that provides immediate availability of the product to the customer. The Company's typical payment terms tend to vary by region but its standard payment terms are within 30-90 days of invoice.

Maintenance

Revenue from support services and product updates, referred to as maintenance revenue, is recognized ratably over the term of the maintenance period, which in most instances is one year. Software license updates provide customers with rights to unspecified software product updates, maintenance releases and patches released during the term of the support period on a when-and-if available basis. Product support includes Internet access to technical content, as well as Internet and telephone access to technical support personnel. The Company's customers purchase both product support and license updates when they acquire new software licenses. In addition, a majority of customers renew their support services contracts annually and typical payment terms provide that customers make payment within 30 days of invoice.

Professional Services

Revenue from professional services is typically comprised of implementation, development, training or other consulting services. Consulting services are generally sold on a time-and-materials or fixed fee basis and can include services ranging from software installation to data conversion and building non-complex interfaces to allow the software to operate in integrated environments. The Company recognizes revenue for time-and-materials arrangements as the services are performed. In fixed fee arrangements, revenue is recognized as services are performed as measured by costs incurred to date, compared to total estimated costs to complete the services project. Management applies judgment when estimating project status and the costs necessary to complete the services projects. A number of internal and external factors can affect these estimates, including labor rates, utilization and efficiency variances and specification and testing requirement changes. Services are generally invoiced upon milestones in the contract or upon consumption of the hourly resources and payments are typically due 30 days after invoice.

Indirect Sales Channels

The Company executes arrangements through indirect sales channels via sales agents and distributors who are authorized to market its software products to end users. In arrangements with sales agents, QAD contracts directly with the customer and sales agents are compensated on a commission basis. Distributor arrangements are those in which the resellers are authorized to market and distribute the Company's software products to end users in specified territories and the distributor bears the risk of collection from the end user customer. The Company recognizes revenue from transactions with distributors when the distributor submits a signed agreement and transfer of control has occurred to the distributor in accordance with the five revenue recognition steps noted above. Revenue from distributor transactions is recorded on a net basis (the amount actually received by the Company from the distributor). QAD does not offer rights of return, product rotation or price protection to any of its distributors.

Disaggregated Revenue

The Company disaggregates revenue from contracts with customers by geography and by the customers' industry within manufacturing, as it believes it best depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors.

The Company's revenue by geography is as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
North America	\$ 162,307	\$ 141,614	\$ 129,436
EMEA	96,989	89,693	81,765
Asia Pacific	51,628	50,689	47,742
Latin America	22,092	23,022	19,030
Total revenue	<u>\$ 333,016</u>	<u>\$ 305,018</u>	<u>\$ 277,973</u>

The Company's revenue by industry is as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Automotive	\$ 128,249	\$ 113,579	\$ 96,794
Consumer products and food and beverage	53,637	47,273	47,796
High technology and industrial products	106,658	99,990	91,652
Life sciences and other	44,472	44,176	41,731
Total revenue	<u>\$ 333,016</u>	<u>\$ 305,018</u>	<u>\$ 277,973</u>

Management Judgments

More judgments and estimates are required under Topic 606 than were required under Topic 605. Due to the complexity of certain contracts, the actual revenue recognition treatment required under Topic 606 for the Company's arrangements may be dependent on contract-specific terms and may vary in some instances.

Revenue is recognized over time for the Company's subscription, maintenance and fixed fee professional services that are separate performance obligations. For the Company's professional services, revenue is recognized over time, generally using costs incurred or hours expended to measure progress. Judgment is required in estimating project status and the costs necessary to complete projects. A number of internal and external factors can affect these estimates, including labor rates, utilization, specification variances and testing requirement changes.

If a group of agreements are entered at or near the same time and so closely related that they are, in effect, part of a single arrangement, such agreements are deemed to be combined as one arrangement for revenue recognition purposes. The Company exercises judgment to evaluate the relevant facts and circumstances in determining whether agreements should be accounted for separately or as a single arrangement. The Company's judgments about whether a group of contracts comprise a single arrangement can affect the allocation of consideration to the distinct performance obligations, which could have an effect on results of operations for the periods involved.

If a contract includes variable consideration, the Company exercises judgment in estimating the amount of consideration to which the entity will be entitled in exchange for transferring the promised goods or services to a customer. When estimating variable consideration, the Company will consider all relevant facts and circumstances. Variable consideration will be estimated and included in the contract price only when it is probable that a significant reversal in the amount of revenue recognized will not occur.

Contract Balances

The timing of revenue recognition may differ from the timing of invoicing to customers and these timing differences result in receivables, contract assets, or contract liabilities (deferred revenue) on the Company's Consolidated Balance Sheets. QAD records a contract asset when the Company has transferred goods or services but does not yet have the right to consideration. QAD records deferred revenue when the Company has received or has the right to receive consideration but has not yet transferred goods or services to the customer.

The contract assets indicated below are presented as other current and non-current assets in the Consolidated Balance Sheets. These assets primarily relate to professional services and subscription and consist of the Company's rights to consideration for goods or services transferred but not billed as of January 31, 2019. The contract assets are transferred to receivables when the rights to consideration become unconditional, usually upon completion of a milestone.

The Company's contract balances are as follows:

	As of	
	January 31, 2019	February 1, 2018
	(In thousands)	
Contract assets, short-term (in Other current assets, net)	\$ 2,058	\$ 890
Contract assets, long-term (in Other assets, net)	—	110
Total contract assets	\$ 2,058	\$ 1,000
Deferred revenue, short-term	\$ 115,253	\$ 115,454
Deferred revenue, long-term (in Other liabilities)	1,465	1,644
Total deferred revenue	\$ 116,718	\$ 117,098

During the fiscal year ended January 31, 2019, the Company recognized \$112.1 million of revenue that was included in the deferred revenue balance, as adjusted for Topic 606, at the beginning of the period. All other activity in deferred revenue is due to the timing of invoicing in relation to the timing of revenue recognition.

Revenue allocated to remaining performance obligations represents the transaction price allocated to the performance obligations that are unsatisfied, or partially unsatisfied, which includes unearned revenue and amounts that will be invoiced and recognized as revenue in future periods. Contracted but unsatisfied performance obligations were approximately \$262.4 million as of January 31, 2019, of which the Company expects to recognize approximately \$166.5 million as revenue over the next 12 months and the remainder thereafter. In instances where the timing of revenue recognition differs from the timing of invoicing, QAD has determined that its contracts generally do not include a significant financing component. The primary purpose of invoicing terms is to provide customers with simplified and predictable ways of purchasing the Company's products and services, and not to facilitate financing arrangements.

Deferred Revenue

The Company typically invoices its customers for subscription and support fees in advance on a quarterly or annual basis, with payment due at the start of the subscription or support term. Unpaid invoice amounts for non-cancelable services starting in future periods are included in accounts receivable and deferred revenue. The portion of deferred revenue that QAD anticipates will be recognized after the succeeding twelve-month period is recorded as non-current deferred revenue, and the remaining portion is recorded as current deferred revenue.

Deferred revenues consisted of the following:

	As of	
	January 31, 2019	January 31, 2018
	(in thousands)	
Deferred maintenance	\$ 77,037	\$ 80,811
Deferred subscription	34,020	31,034
Deferred professional services	2,146	3,523
Deferred license	1,713	756
Deferred other revenue	337	569
Deferred revenues, current	115,253	116,693
Deferred revenues, non-current (in Other liabilities)	1,465	2,156
Total deferred revenues	\$ 116,718	\$ 118,849

Practical Expedients and Exemptions

There are several practical expedients and exemptions allowed under Topic 606 that impact timing of revenue recognition and the Company's disclosures. Below is a list of practical expedients the Company applied in the adoption and application of Topic 606:

Application

- The Company does not evaluate a contract for a significant financing component if payment is expected within one year or less from the transfer of the promised items to the customer.
- The Company generally expenses sales commissions and sales agent fees when incurred when the amortization period would have been one year or less. These costs are recorded within sales and marketing expense in the Consolidated Statement of Operations and Comprehensive Income (Loss).
- The Company also used the practical expedient to calculate contract acquisition costs based on a portfolio of contracts with similar characteristics instead of a contract by contract analysis.
- The Company does not disclose the value of unsatisfied performance obligations for contracts for which the Company recognizes revenue at the amount to which it has the right to invoice for services performed (applies to time-and-material engagements).

Modified Retrospective Transition Adjustments

- For contract modifications, the Company reflected the aggregate effect of all modifications that occurred prior to the adoption date when identifying the satisfied and unsatisfied performance obligations, determining the transaction price and allocating the transaction price to satisfied and unsatisfied performance obligations for the modified contract at transition.

Costs to Obtain and Fulfill a Contract

The Company's incremental direct costs of obtaining a contract consist of sales commissions and sales agent fees which are deferred and amortized ratably over the term of economic benefit which the Company has determined to be five years. These deferred costs are classified as current or non-current based on the timing of when the Company expects to recognize the expense. Incremental costs related to renewals are expensed as incurred because the term of economic benefit is one year or less. The current and non-current portions of deferred commissions are included in other current assets and other long-term assets, respectively, in the Company's Consolidated Balance Sheets. At January 31, 2019 and February 1, 2018, the Company had \$11.0 million and \$10.1 million, respectively, of deferred commissions and sales agent fees. For the fiscal year ended January 31, 2019, \$3.6 million of amortization expense related to deferred commissions and sales agent fees was recorded in sales and marketing expense in the Company's Consolidated Statement of Operations and Comprehensive Income (Loss).

Costs to fulfill a contract, which are incurred upon initiation of certain services contracts and are related to initial customer setup, are included in other current assets and long-term assets in the Company's Consolidated Balance Sheets. At January 31, 2019 and February 1, 2018 the Company had deferred setup costs of \$1.5 million. These costs are amortized over the term of economic benefit which the Company has determined to be five years. During the fiscal year ended January 31, 2019, \$0.5 million of amortization expense related to deferred setup costs was recorded in cost of subscription in the Company's Consolidated Statement of Operations and Comprehensive Income (Loss).

Recoverability of these costs is subject to various business risks. Quarterly, the Company compares the carrying value of these assets with the undiscounted future cash flows expected to be generated by them to determine if there is impairment. If impaired, these assets are reduced to an estimated fair value on a discounted cash flow basis. No impairment losses were recognized during the twelve months ended January 31, 2019.

3. FAIR VALUE MEASUREMENTS

When determining fair value, the Company uses a three-tier value hierarchy which prioritizes the inputs used in measuring fair value. Whenever possible, the Company uses observable market data. The Company relies on unobservable inputs only when observable market data is not available. Classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement. The assessment of the significance of a particular item to the fair value measurement in its entirety requires judgment, including the consideration of inputs specific to the asset or liability.

- Level 1 - Money market mutual funds and short-term investments are recorded at fair value based upon quoted market prices.

- Level 2 - The asset or liability related to the interest rate swap is recorded at fair value based upon a valuation model that uses relevant observable market inputs at quoted intervals, such as forward yield curves.

The following table sets forth the financial assets, measured at fair value, as of January 31, 2019 and January 31, 2018:

	Fair value measurement at reporting date using		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2) (in thousands)	Significant Unobservable Inputs (Level 3)
Money market mutual funds as of January 31, 2019	\$ 107,855		
Money market mutual funds as of January 31, 2018	\$ 115,416		
Short-term investments as of January 31, 2019	\$ 1,200		
Short-term investments as of January 31, 2018	\$ —		
Asset related to the interest rate swap as of January 31, 2019		\$ 136	
Asset related to the interest rate swap as of January 31, 2018		\$ 187	

Money market mutual funds are classified as part of “Cash and equivalents” in the accompanying Consolidated Balance Sheets. The amount of cash and equivalents deposited with commercial banks was \$31.6 million and \$32 million at January 31, 2019 and January 31, 2018, respectively.

The Company’s note payable bears a variable market interest rate commensurate with the Company’s credit standing. Therefore, the carrying amount outstanding under the note payable reasonably approximates fair value based on Level 2 inputs.

There have been no transfers between fair value measurements levels during the twelve months ended January 31, 2019.

Derivative Instruments

The Company entered into an interest rate swap in May 2012 to mitigate the exposure to the variability of one month LIBOR for its floating rate debt described in Note 8 “Debt” within these Notes to Consolidated Financial Statements. The fair value of the interest rate swap is reflected as an asset or liability in the Consolidated Balance Sheets and the change in fair value is reported in “Other (income) expense, net” in the Consolidated Statements of Operations and Comprehensive Income (Loss). The fair value of the interest rate swap is estimated as the net present value of projected cash flows based upon forward interest rates at the balance sheet date.

The fair values of the derivative instrument at January 31, 2019 and January 31, 2018 were as follows (in thousands):

	Balance Sheet Location	Asset Fair Value	
		January 31, 2019	January 31, 2018
Derivative instrument:			
Interest rate swap	Other assets, net	\$ 136	\$ 187
Total		\$ 136	\$ 187

The change in fair value of the interest rate swap recognized in the Consolidated Statement of Operations and Comprehensive Income (Loss) for the twelve months ended January 31, 2019, 2018 and 2017 was \$(51,000), \$377,000 and \$485,000, respectively.

4. INCOME TAXES

On December 22, 2017, the United States signed into law the Tax Cuts and Job Act, (the “Tax Act”), which imposes a repatriation tax on accumulated earnings of foreign subsidiaries, implements a territorial tax system together with a current tax on accumulated foreign earnings and lowers the general corporate income tax rate to 21%. The Tax Act requires the Company to pay a one-time deemed repatriation income tax on the net accumulated earnings of its foreign subsidiaries at a tax rate of 15.5%.

The Tax Act significantly changes how the U.S. taxes corporations. The Tax Act requires complex computations to be performed that were not previously required, significant judgments to be made and significant estimates in calculations. The U.S. Treasury Department, the Internal Revenue Service, and other standard-setting bodies could interpret or issue guidance on how provisions of the Tax Act will be applied or otherwise administered that is different from the Company’s interpretation. The Securities and Exchange Commission staff issued Staff Accounting Bulletin No.118 *Income Tax Accounting Implications of the Tax Cuts and Jobs Act* (“SAB 118”). SAB118 allowed companies to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. The Company's accounting for the Tax Act was completed within the measurement period provided by SAB 118.

The Company completed its calculations of the one-time deemed repatriation tax and finalized its U.S. federal income tax return in the fourth quarter of fiscal 2019. The provisional tax expense for the one-time deemed repatriation tax was reduced from \$2.0 million estimated in fiscal 2018 to \$0.7 million, primarily due to the Company's ability to use more foreign tax credits to reduce the transition tax liability. In the fourth quarter of fiscal 2019, the Company recorded a tax benefit of \$1.3 million to reduce the initial accrual of \$2.0 million to \$0.7 million. The Company elected to pay the repatriation tax liability over a period of eight years as permitted by the Tax Act.

The Tax Act made broad fundamental changes to the U.S. international tax system with the enactment of Section 951A, global intangible low-tax income ("GILTI"). GILTI applies to the Company's foreign businesses that operate in corporate form and may cause the foreign income to be reported on its U.S. federal income tax return beginning in fiscal 2019. As a result, the Company's foreign earnings may be subject to U.S. taxes. The Company calculated the GILTI provision based on the proposed regulations released on September 13, 2018. These regulations provide computational, definitional, and anti-avoidance rule guidance relating to the determination of a U.S. shareholder's GILTI inclusion. For fiscal 2019, the Company does not have a GILTI inclusion due to a loss in Ireland.

The Company has elected to treat the deferred taxes related to GILTI provisions as a current-period expense when incurred (the "period cost method").

Consolidated net income (loss) before income taxes is summarized as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Domestic net income (loss) before income taxes	\$ 6,562	\$ (4,793)	\$ (3,774)
Foreign net income before income taxes	5,355	585	7,600
Consolidated net income (loss) before income taxes	<u>\$ 11,917</u>	<u>\$ (4,208)</u>	<u>\$ 3,826</u>

Income tax expense is summarized as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Current:			
U.S. federal	\$ (829)	\$ 2,862	\$ 437
State	(13)	38	30
Foreign	3,784	2,433	3,894
Subtotal	2,942	5,333	4,361
Deferred:			
U.S. federal	79	(519)	11,564
State	(30)	19	3,610
Foreign	(1,502)	24	(348)
Subtotal	(1,453)	(476)	14,826
Equity adjustment	—	—	89
Total	<u>\$ 1,489</u>	<u>\$ 4,857</u>	<u>\$ 19,276</u>

Actual income tax expense differs from that obtained by applying the statutory federal income tax rate to income before income taxes as follows:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Computed expected tax expense (benefit)	\$ 2,503	\$ (1,431)	\$ 1,301
State income taxes, net of federal income tax expense	96	(157)	(54)
Incremental tax expense from foreign operations	715	923	137
Equity compensation	(2,916)	(1,004)	(29)
Foreign withholding taxes	1,089	794	676
Net change in valuation allowance	3,224	5,448	16,861
Net change in contingency reserve	(71)	(81)	198
Non-deductible expenses	1,149	(407)	660
Benefit of tax credits	(3,483)	(1,766)	(1,243)
Subpart F income	101	302	345
U.S. Tax Reform (the "Tax Act")	(1,312)	1,951	—
Other	394	285	424
Total	\$ 1,489	\$ 4,857	\$ 19,276

The Company's foreign earnings were primarily from the following countries: China, India and Mexico. These countries have higher statutory tax rates and effective tax rates than the U.S. However, the Company benefits from operating in Ireland which has a lower statutory income tax rate and effective tax rate than the U.S.

The Company files U.S. federal, state, and foreign tax returns that are subject to audit by various tax authorities. The Company is currently under audit in:

- India for fiscal years ended March 31, 2010, 2013, and 2014
- Netherlands for fiscal year ended January 31, 2016
- Germany for fiscal years ended January 31, 2015, 2016 and 2017
- Switzerland for fiscal years ended January 31, 2014, 2015, 2016, 2017 and 2018
- Tennessee for fiscal years ended January 31, 2014, 2015, 2016, 2017 and 2018

During fiscal 2019, the Company closed the following audits with small or no adjustment:

- Iowa for fiscal year ended January 31, 2014
- Kentucky for fiscal year ended January 31, 2016
- South Africa for fiscal years ended January 31, 2016 and 2017

As of January 31, 2019, the Company continues to maintain its permanent reinvestment assertion under APB 23 for all of its foreign subsidiaries as it relates to withholding taxes, state taxes and currency translation. These permanently reinvested earnings are approximately \$89 million at January 31, 2019. It is not practicable for the Company to determine the amount of the related unrecognized deferred income tax liability.

Deferred income taxes reflect the net effects of the temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The Tax Act reduces the U.S. statutory tax rate from 35% to 21% for years after 2017. Accordingly, the Company has remeasured its deferred taxes as of January 31, 2019 to reflect the reduced rate.

Significant components of the Company's deferred tax assets and liabilities are as follows:

	January 31,	
	2019	2018
	(in thousands)	
Deferred tax assets:		
Allowance for doubtful accounts and sales adjustments	\$ 520	\$ 367
Accrued vacation	1,568	1,590
Tax credits	20,908	18,583
Deferred revenue	2,849	3,493
Net operating loss carry forwards	10,597	10,337
Accrued expenses - other	1,802	1,849
Other comprehensive income	1,189	1,164
Section 263(a) interest capitalization	198	206
Intellectual property	7,917	—
Equity compensation	4,626	4,380
Carryforward of Irish amortization	1,630	—
Other	2,345	1,243
Total deferred tax assets	56,149	43,212
Less valuation allowance	(34,898)	(33,665)
Less netting of unrecognized tax benefits against deferred tax assets	(886)	(930)
Deferred tax assets, net of valuation allowance	\$ 20,365	\$ 8,617
Deferred tax liabilities:		

Depreciation and amortization	(804)	(442)
Topic 606: capitalized commissions and cloud costs	(2,891)	—
Other	(498)	(231)
Total deferred tax liabilities	(4,193)	(673)
Total net deferred tax assets	<u>\$ 16,172</u>	<u>\$ 7,944</u>

The Company reviews its net deferred tax assets by jurisdiction on a quarterly basis to determine whether a valuation allowance is necessary based on the more-likely-than-not standard. Management assessed historic, current and future financial projections by jurisdiction to draw its conclusion. In fiscal year 2019, the Company continued to apply a valuation allowance against its U.S. federal and state deferred income tax assets due to a U.S. three-year cumulative loss, future earmarked investment in research and development, and hiring due to the Company's business transition to the cloud. When the Company's operating performance improves on a sustained basis, the conclusion regarding the need for a valuation allowance is likely to change, resulting in the reversal of some or all of the valuation allowance in the future. At January 31, 2019 and 2018, the worldwide valuation allowance attributable to deferred tax assets was \$34.9 million and \$33.7 million, respectively.

In the fourth quarter of fiscal 2018, the Company had an intra-entity sale of intellectual property that resulted in \$10 million of additional tax basis. Upon adoption of ASU 2016-16 in the first quarter of fiscal 2019, the Company established a deferred tax asset of \$9.6 million that will be amortized over six years for tax purposes. This benefit was recorded to retained earnings on February 1, 2018 under the transition rules.

The Company has gross net operating loss carryforwards of \$38.5 million and tax credit carryforwards of \$23.2 million as of January 31, 2019. The majority of the Company's net operating loss carryforwards do not expire. The Company's foreign tax credits will begin to expire in fiscal year 2028. The Company has \$6.5 million of U.S. and \$10.8 million of California R&D credits that have been valued. The Company has \$167,000 of U.S. R&D tax credit that will expire on October 2019. These credits are unlikely to be utilized before expiration. Australian and California R&D tax credits do not expire.

During the fiscal year ended January 31, 2019, the Company decreased its reserves for uncertain tax positions by \$0.5 million. Interest and penalties on accrued but unpaid taxes are classified in the Consolidated Statements of Operations and Comprehensive Income (Loss) as income tax expense. The liability for unrecognized tax benefits that may be recognized in the next twelve months is classified as short-term in the Company's Consolidated Balance Sheet while the remainder is classified as long-term.

The following table reconciles the gross amounts of unrecognized tax benefits at the beginning and end of the period:

	Years Ended January 31,	
	2019	2018
	(in thousands)	
Unrecognized tax benefits at beginning of the year	\$ 1,662	\$ 1,743
Decreases as a result of tax positions taken in a prior period	(26)	(115)
Increases as a result of tax positions taken in the prior period	—	58
Reduction as a result of a lapse of the statute of limitations	(44)	(24)
Decreases as a result of settlements with taxing authorities	(424)	—
Unrecognized tax benefit at end of year	<u>\$ 1,168</u>	<u>\$ 1,662</u>

All of the unrecognized tax benefits included in the Consolidated Balance Sheet at January 31, 2019 would impact the effective tax rate on income from continuing operations, if recognized.

The total amount of interest recognized in the Consolidated Statement of Operations and Comprehensive Income for unpaid taxes was \$9,000 for the year ended January 31, 2019. The total amount of interest and penalties recognized in the Consolidated Balance Sheet at January 31, 2019 was \$0.1 million.

The Company files U.S. federal, state, and foreign income tax returns in jurisdictions with varying statute of limitations. The years that may be subject to examination will vary by jurisdiction. Below is a list of our material jurisdictions and the years open for audit as of fiscal 2019:

Jurisdiction	Years Open for Audit
U.S. federal	Fiscal year 2016 and beyond
California	Fiscal year 2015 and beyond
Michigan	Fiscal year 2015 and beyond
New Jersey	Fiscal year 2015 and beyond
Australia	Fiscal year 2015 and beyond
France	Fiscal year 2016 and beyond
India	Fiscal years 2010, 2013 and 2014
Ireland	Fiscal year 2015 and beyond
United Kingdom	Fiscal year 2018 and beyond
China	Calendar year 2014 and beyond
Mexico	Calendar year 2014 and beyond

5. STOCKHOLDERS' EQUITY

Common Stock

The Company has two classes of common stock. Each share of Class B Common Stock entitles the holder to one vote and each share of Class A Common Stock entitles the holder to 1/20th of one vote. On all matters, the Class A Common Stock and the Class B Common Stock will vote as a single class, except as otherwise required by applicable law or the articles of incorporation. Neither the Class A Common Stock nor the Class B Common Stock are convertible into the other, unless either or both classes becomes subject to exclusion from the principal national securities exchange on which such securities are traded, in which case all outstanding shares of Class A Common Stock may be converted into shares of Class B Common Stock on a share-for-share basis by resolution of the Board of Directors. There are no restrictions on the transferability of either class.

The amount of any dividend payable in cash or non-cash property of the Company (other than a dividend payable solely in the Company's capital stock) with respect to each share of Class A Common Stock is equal to 120% of the value of any such dividend payable with respect to a share of Class B Common Stock, except for dividends declared for the purpose of distributing all or some of the proceeds received by the Company from any transaction determined by the Board to be a material transaction not in the ordinary course of business or for the purpose of effecting a spin-off of a subsidiary of the Company (in either case, such dividend will be paid ratably, on a per share basis, to all holders of Common Stock).

Dividends

The following table sets forth the dividends declared and paid by the Company during fiscal 2019:

Declaration Date	Record Date	Payable	Dividend Class A	Dividend Class B	(in thousands)
12/11/2018	12/26/2018	1/8/2019	\$ 0.072	\$ 0.06	\$ 1,374
9/11/2018	9/25/2018	10/2/2018	\$ 0.072	\$ 0.06	\$ 1,374
6/11/2018	6/25/2018	7/6/2018	\$ 0.072	\$ 0.06	\$ 1,372
4/10/2018	4/24/2018	5/1/2018	\$ 0.072	\$ 0.06	\$ 1,359

6. STOCK-BASED COMPENSATION

Stock Plans

On June 14, 2016, the stockholders approved the QAD Inc. 2016 Stock Incentive Program ("2016 Program"). The 2016 Program allows for equity awards in the form of incentive stock options, non-statutory stock options, restricted shares, rights to purchase stock, stock appreciation rights ("SARs") and other stock rights. The stockholders authorized a maximum of 4,000,000 shares to be issued under the 2016 Program. Prior to July 1, 2016, stock awards were issued under the QAD Inc. 2006 Stock Incentive Program. As of January 31, 2019, 3,011,000 Class A Common Shares were available for issuance.

The Company issues restricted stock units ("RSUs") to employees with the exception of the President of the Company. RSUs granted to employees under the 2016 Program and 2006 Program are generally released 25% after each year of service for four years and are contingent upon employment with the Company on the release date. Stock compensation is typically issued out of treasury shares. At January 31, 2019, there were 480,000 RSUs of Class A Common Stock outstanding under the 2016 Program and 183,000 RSUs of Class A Common Stock outstanding under the 2006 Program.

The Company also issues equity awards in the form of stock-settled SARs to the President of the Company. A SAR is a contractual right to receive value tied to the post-grant appreciation of the underlying stock. Although the Company has the ability to grant stock-settled or cash-settled SARs, the Company has only granted stock-settled SARs. Upon vesting, a holder of a stock-settled SAR receives shares in the Company's common stock equal to the intrinsic value of the SAR at time of exercise. Under the 2016 Program and 2006 Program, SARs have generally been granted for a term of eight years. They generally vest 25% after each year of service for four years and are contingent upon employment with the Company on the vesting date. Economically, a stock-settled SAR provides the same compensation value as a stock option, but the employee is not required to pay an exercise price upon exercise of the SAR. Stock compensation expense, as required under ASC 718, is the same for stock-settled SARs and stock options. At January 31, 2019, there were 427,000 SARs to purchase Class A Common Stock outstanding under the 2016 Program. At January 31, 2019, there were 1,828,000 and 278,000 SARs to purchase Class A Common Stock and Class B Common Stock outstanding under the 2006 Program, respectively.

Equity compensation is also issued to non-employee Board members that are newly-appointed or reelected at the Annual Meeting of Stockholders. They are granted Class A shares as stock payments that are fully vested on the date of grant. Equity awards to non-employee Board members are limited to \$250,000 per year, as determined for the Company's financial accounting purposes as of the date of grant.

Under the 2016 Program, officers, directors, employees, consultants and other independent contractors or agents of the Company or subsidiaries of the Company who are responsible for or contribute to the management, growth or profitability of its business are eligible for selection by the program administrators to participate. However, incentive stock options granted under the 2016 Program may only be granted to a person who is an employee of the Company or one of its subsidiaries.

Stock-Based Compensation

The following table sets forth reported stock compensation expense included in the Company's Consolidated Statements of Operations and Comprehensive Income (Loss) for the fiscal years ended January 31, 2019, 2018 and 2017:

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Stock-based compensation expense:			
Cost of subscription	\$ 252	\$ 161	\$ 113
Cost of maintenance and other revenue	497	384	299
Cost of professional services	1,219	1,085	848
Sales and marketing	2,111	1,510	1,200
Research and development	1,620	1,226	1,009
General and administrative	4,423	4,558	3,854
Total stock-based compensation expense	<u>\$ 10,122</u>	<u>\$ 8,924</u>	<u>\$ 7,323</u>

RSU Information

The following table summarizes the activity for RSUs for the fiscal years ended January 31, 2019, 2018 and 2017:

	RSUs (in thousands)	Weighted Average Grant Date Fair Value
Restricted stock at January 31, 2016	617	\$ 20.91
Granted	307	18.54
Released (1)	(259)	18.96
Forfeited	(42)	20.69
Restricted stock at January 31, 2017	623	\$ 20.56
Granted	295	30.69
Released (1)	(245)	20.48
Forfeited	(20)	22.36
Restricted stock at January 31, 2018	653	\$ 25.10
Granted	300	51.70
Released (1)	(263)	25.80
Forfeited	(27)	30.63
Restricted stock at January 31, 2019	<u>663</u>	<u>\$ 36.64</u>

- (1) The number of RSUs released includes shares withheld on behalf of employees to satisfy minimum statutory tax withholding requirements. During the fiscal years ended January 31, 2019, 2018 and 2017, the Company withheld 81,000 shares, 74,000 shares and 75,000 shares, respectively, for payment of these taxes. The value of the withheld shares for the fiscal years ended January 31, 2019, 2018 and 2017 were \$4.3 million, \$2.4 million and \$1.5 million, respectively.

Total unrecognized compensation cost related to RSUs was approximately \$19.1 million as of January 31, 2019. This cost is expected to be recognized over a period of approximately 2.9 years.

SAR Information

The weighted average assumptions used to value SARs are shown in the following table.

	Years Ended January 31,		
	2019	2018	2017
Expected life in years	5.50	5.50	5.25
Risk free interest rate	2.80%	1.82%	1.16%
Volatility	31%	33%	36%
Dividend rate	0.54%	0.91%	1.51%

The following table summarizes the activity for outstanding SARs for the fiscal years ended January 31, 2019, 2018 and 2017:

	Options/ SARs (in thousands)	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands)
Outstanding at January 31, 2016	2,596	\$ 14.74		
Granted	380	18.64		
Exercised	(158)	10.94		
Expired	(17)	12.56		
Forfeited	(8)	12.09		
Outstanding at January 31, 2017	2,793	\$ 15.51		
Granted	380	31.65		
Exercised	(139)	10.52		
Expired	(10)	9.74		
Outstanding at January 31, 2018	3,024	\$ 17.78		
Granted	380	53.50		
Exercised	(390)	9.43		
Expired	(5)	9.17		
Forfeited	(476)	37.14		
Outstanding at January 31, 2019	2,533	\$ 20.81	3.5	\$ 53,155
Vested and exercisable at January 31, 2019	2,058 (1)	\$ 17.04	2.9	\$ 48,873

(1) The number of SARs vested and exercisable at January 31, 2019 includes 877,500 Class A and 127,500 Class B shares previously held by Mr. Karl Lopker which will expire on August 25, 2019 if not exercised by his estate. Exercise prices for these SARs range from \$10.50 to \$31.65.

The aggregate intrinsic value in the table above represents the total pretax intrinsic value (the aggregate difference between the closing stock price of the Company's common stock based on the last trading day as of January 31, 2019 and the exercise price for in-the-money SARs) that would have been received by the holders if all SARs had been exercised on January 31, 2019. The total intrinsic value of SARs exercised in the years ended January 31, 2019, 2018 and 2017 was \$12.4 million, \$3.0 million and \$2.1 million, respectively. The weighted average grant date fair value per share of SARs granted in the years ended January 31, 2019, 2018 and 2017 was \$16.99, \$9.59 and \$5.43, respectively.

The number of SARs exercised includes shares withheld on behalf of employees to satisfy minimum statutory tax withholding requirements. During the fiscal years ended January 31, 2019, 2018 and 2017, the Company withheld shares 104,000, 31,000 and 25,000 shares for payment of these taxes. The value of the withheld shares for the fiscal years ended January 31, 2019, 2018 and 2017 were \$4.4 million, \$1.0 million and \$0.6 million, respectively.

At January 31, 2019, there was approximately \$4.3 million of total unrecognized compensation cost related to unvested SARs. This cost is expected to be recognized over a weighted average period of approximately 2.9 years.

7. OTHER BALANCE SHEET ACCOUNTS

	January 31,	
	2019	2018
	(in thousands)	
Other current assets		
Deferred cost of revenues	\$ 8,007	\$ 8,330
Prepaid expenses	6,597	5,847
Capitalized commissions and sales agent fees	3,502	—
Accrued revenue	2,058	106
Capitalized cloud setup costs	521	—
Income tax receivable, net of payables	255	213
Other	1,210	1,360
	<u>\$ 22,150</u>	<u>\$ 15,856</u>
Other assets, net		
Long-term capitalized commissions and sales agent fees	\$ 7,520	\$ —
Long-term deposits and prepaid expenses	3,061	2,463
Other intangible assets, net	1,233	—
Long-term capitalized cloud setup costs	934	—
Fair value of interest rate swap	136	187
Other long-term assets	136	405
	<u>\$ 13,020</u>	<u>\$ 3,055</u>
Accounts payable		
Trade payables	\$ 6,544	\$ 9,346
VAT payable	3,358	5,472
	<u>\$ 9,902</u>	<u>\$ 14,818</u>
Other current liabilities		
Accrued commissions and bonus	\$ 15,464	\$ 18,039
Accrued compensated absences	9,130	9,177
Other accrued payroll	5,251	6,038
Accrued professional fees	2,729	1,884
Accrued travel	1,696	1,839
Accrued contract labor	1,975	2,655
Other current liabilities	4,103	3,828
	<u>\$ 40,348</u>	<u>\$ 43,460</u>
Other liabilities		
Long-term deferred revenue	\$ 1,465	\$ 2,156
Accrued termination benefits	1,946	1,557
Lease restoration obligations	834	859
Long-term tax contingency reserve	282	688
Other	574	179
	<u>\$ 5,101</u>	<u>\$ 5,439</u>

8. DEBT

	January 31,	
	2019	2018
	(in thousands)	
Note payable	\$ 13,358	\$ 13,825
Less current maturities	(487)	(466)
Less loan origination costs, net	(35)	(46)
Long-term debt	<u>\$ 12,836</u>	<u>\$ 13,313</u>

Note Payable

Effective May 30, 2012, QAD Ortega Hill, LLC entered into a variable rate credit agreement (the “2012 Mortgage”) with Rabobank, N.A., to refinance a pre-existing mortgage. The 2012 Mortgage has an original principal balance of \$16.1 million and bears interest at the one month LIBOR rate plus 2.25%. One month LIBOR was 2.51% at January 31, 2019. The 2012 Mortgage matures in June 2022 and is secured by the Company’s headquarters located in Santa Barbara, California. In conjunction with the 2012 Mortgage, QAD Ortega Hill, LLC entered into an interest rate swap with Rabobank, N.A. The swap agreement has an initial notional amount of \$16.1 million and a schedule matching that of the underlying loan that synthetically fixes the interest rate on the debt at 4.31% for the entire term of the 2012 Mortgage. The terms of the 2012 Mortgage provide for QAD Ortega Hill, LLC to make net monthly payments of \$88,100 consisting of principal and interest and one final payment of \$11.7 million. The unpaid balance as of January 31, 2019 was \$13.4 million.

9. ACCUMULATED OTHER COMPREHENSIVE LOSS

The components of accumulated other comprehensive loss were as follows:

	Foreign Currency Translation Adjustments (in thousands)
Balance as of January 31, 2018	\$ (6,828)
Other comprehensive loss before reclassifications	(833)
Amounts reclassified from accumulated other comprehensive loss	—
Net current period other comprehensive loss	(833)
Balance as of January 31, 2019	<u>\$ (7,661)</u>

During fiscal 2019 there were no reclassifications from accumulated other comprehensive loss.

10. EMPLOYEE BENEFIT PLANS

The Company has a defined contribution 401(k) plan which is available to U.S. employees after 30 days of employment. Employees may contribute up to the maximum allowable by the Internal Revenue Code. The Company voluntarily matches 75% of the employees’ contributions up to the first four percent of the employee’s eligible compensation. In addition, the Company can make additional contributions at the discretion of the board of directors. Participants are immediately vested in their employee contributions. Vesting of employer contributions depends on an employee’s years of service, starting with 20% at one year of service and increasing 20% for each subsequent year of service until fully vested after five years of service. The Company’s contributions for fiscal years 2019, 2018 and 2017 were \$2.2 million, \$2.2 million and \$2.1 million, respectively.

Various QAD foreign subsidiaries also contribute to defined contribution pension plans. Employer contributions in these plans are generally based on employee salary and range from 2% to 20%. These plans are funded at various times throughout the year according to plan provisions, with aggregate employer contributions of \$5.3 million for fiscal 2019, \$4.4 million for fiscal 2018 and \$4.1 million for fiscal 2017.

11. COMMITMENTS AND CONTINGENCIES

Lease Obligations

The Company leases certain office facilities, office equipment and automobiles under operating lease agreements. The leases generally provide that the Company pays taxes, insurance and maintenance expenses related to the leased assets. Total rent expense for fiscal years 2019, 2018 and 2017 was \$5.0 million, \$4.9 million and \$4.9 million, respectively. Certain of the Company’s lease arrangements are subject to customary renewal and base rental fee escalation clauses, rent holidays and lessor incentives. Future minimum rental payments under non-cancelable operating lease commitments with terms of more than one year as of January 31, 2019 are as follows (in millions):

2020	\$ 5.6
2021	4.6
2022	2.8
2023	1.8
2024	1.5
Thereafter	2.8
	<u>\$ 19.1</u>

Purchase Obligations

At January 31, 2019, the Company had \$18.9 million of other non-cancelable contractual obligations, related to the purchase of goods and services not included in the table above.

Indemnifications

The Company sells software licenses and services to its customers under written agreements. Each agreement contains the relevant terms of the contractual arrangement with the customer and generally includes certain provisions for indemnifying the customer against losses, expenses and liabilities from damages that may be awarded against the customer in the event the Company's software is found to infringe upon certain intellectual property rights of a third party. The agreements generally limit the scope of and remedies for such indemnification obligations in a variety of industry-standard respects.

The Company believes its internal development processes and other policies and practices limit its exposure related to the indemnification provisions of the agreements. For several reasons, including the lack of prior indemnification claims and the lack of a monetary liability limit for certain infringement cases under the agreements, the Company cannot determine the maximum amount of potential future payments, if any, related to such indemnification provisions.

Legal Actions

The Company is subject to various legal proceedings and claims, either asserted or unasserted, which arise in the ordinary course of business. While the outcome of these claims cannot be predicted with certainty, management does not believe that the outcome of any of these legal matters will have a material adverse effect on the Company's consolidated results of operations, financial position or liquidity.

12. BUSINESS SEGMENT INFORMATION

The Company markets its products and services worldwide, primarily to companies in the manufacturing industry, including automotive, consumer products, food and beverage, high technology, industrial products and life sciences industries. The Company sells and licenses its products through its direct sales force in four geographic regions: North America; Europe, the Middle East and Africa ("EMEA"); Asia Pacific; and Latin America and through distributors where third parties can extend sales reach more effectively or efficiently. The North America region includes the United States and Canada. The EMEA region includes Europe, the Middle East and Africa. The Asia Pacific region includes Asia and Australia. The Latin America region includes South America, Central America and Mexico. In accordance with Topic 606, the Company reports disaggregated revenue by geography and by industry as the Company believes it best depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors. The Company does not consider reporting by industry an operating segment in accordance with ASC 280, *Segment Reporting*, because discrete financial information by industry is not available. The Company's Chief Operating Decision Maker, the Chief Executive Officer, reviews the consolidated results within one operating segment.

Subscription, license and maintenance revenues are generally assigned to the region where a majority of end users are located. Professional services revenue is assigned based on the region where the services are delivered.

Property and equipment, net are assigned by geographic region based on the location of each legal entity.

	Years Ended January 31,		
	2019	2018	2017
	(in thousands)		
Revenue:			
North America (1)	\$ 162,307	\$ 141,614	\$ 129,436
EMEA	96,989	89,693	81,765
Asia Pacific	51,628	50,689	47,742
Latin America	22,092	23,022	19,030
	<u>\$ 333,016</u>	<u>\$ 305,018</u>	<u>\$ 277,973</u>
	January 31,		
	2019	2018	
	(in thousands)		
Property and equipment, net:			
North America	\$ 24,735	\$ 25,546	
EMEA	3,090	3,444	
Asia Pacific	1,408	1,141	
Latin America	388	277	
	<u>\$ 29,621</u>	<u>\$ 30,408</u>	

(1) Sales into Canada accounted for 2% of North America total revenue for each of the fiscal years 2019, 2018 and 2017.

13. QUARTERLY INFORMATION (Unaudited)

	Quarters Ended			
	April 30	July 31	Oct. 31	Jan. 31
(in thousands, except per share data)				
Fiscal 2019				
Total revenue	\$ 86,190	\$ 84,543	79,577	82,706
Total costs and expenses	84,381	82,817	77,103	79,142
Gross margin	45,123	44,107	42,216	45,686
Operating income	1,809	1,726	2,474	3,564
Net income	1,397	1,113	2,982	4,936
Basic net income per share				
Class A	\$ 0.07	\$ 0.06	0.16	0.26
Class B	0.06	0.05	0.13	0.22
Diluted net income per share				
Class A	\$ 0.07	\$ 0.05	0.14	0.24
Class B	0.06	0.05	0.12	0.21
Fiscal 2018				
Total revenue	\$ 71,382	\$ 75,958	\$ 76,925	\$ 80,753
Total costs and expenses	72,741	75,415	76,495	83,441
Gross margin	36,516	39,264	38,879	40,934
Operating (loss) income	(1,359)	543	430	(2,688)
Net loss	(2,571)	(1,161)	(161)	(5,172)
Basic net loss per share				
Class A	\$ (0.14)	\$ (0.06)	\$ (0.01)	\$ (0.28)
Class B	(0.12)	(0.05)	(0.01)	(0.23)
Diluted net loss per share				
Class A	\$ (0.14)	\$ (0.06)	\$ (0.01)	\$ (0.28)
Class B	(0.12)	(0.05)	(0.01)	(0.23)

SCHEDULE II
SCHEDULE OF VALUATION AND QUALIFYING ACCOUNTS
(in thousands)

	Balance at Beginning of Period	Charged to Statements of Income	Write-Offs, Net of Recoveries	Impact of Foreign Currency Translation	Balance at End of Period
Year ended January 31, 2017					
Allowance for bad debt	\$ 1,242	\$ 40	\$ (184)	\$ (8)	\$ 1,090
Allowance for sales adjustments	1,400	197	(472)	(10)	1,115
Total allowance for doubtful accounts	<u>\$ 2,642</u>	<u>\$ 237</u>	<u>\$ (656)</u>	<u>\$ (18)</u>	<u>\$ 2,205</u>
Year ended January 31, 2018					
Allowance for bad debt	\$ 1,090	\$ 98	\$ (834)	\$ 42	\$ 396
Allowance for sales adjustments	1,115	923	(733)	62	1,367
Total allowance for doubtful accounts	<u>\$ 2,205</u>	<u>\$ 1,021</u>	<u>\$ (1,567)</u>	<u>\$ 104</u>	<u>\$ 1,763</u>
Year ended January 31, 2019					
Allowance for bad debt	\$ 396	\$ 144	\$ (31)	\$ (22)	\$ 487
Allowance for sales adjustments	1,367	1,608	(518)	(43)	2,414
Total allowance for doubtful accounts	<u>\$ 1,763</u>	<u>\$ 1,752</u>	<u>\$ (549)</u>	<u>\$ (65)</u>	<u>\$ 2,901</u>

See accompanying report of independent registered public accounting firm.

INDEX OF EXHIBITS

EXHIBIT NUMBER	EXHIBIT TITLE
3.1	<u>Amended and Restated Certificate of Incorporation of the Registrant, filed with the Delaware Secretary of State on December 15, 2010 (Incorporated by reference to Exhibit 3.1 of the Registrant's Annual Report on Form 10-K for the fiscal year ended January 31, 2011)</u>
3.2	<u>Revised Bylaws of the Registrant (Incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on December 13, 2013)</u>
4.1	<u>Specimen Class A and Class B Common Stock Certificate (Incorporated by reference to Exhibit 4.1 of the Registrant's Annual Report on Form 10-K for the fiscal year ended January 31, 2011)</u>
10.1	<u>QAD Inc. 2006 Stock Incentive Program (Incorporated by reference to Exhibit 4.4 of the Registrant's Registration Statement on Form S-8 (Commission File No. 333-137417))</u>
10.1(a)	<u>Forms of Agreement for QAD Inc. 2006 Stock Incentive Program (Incorporated by reference to Exhibit 10.2(a) of the Registrant's Annual Report on Form 10-K for the fiscal year ended January 31, 2009)</u>
10.2	<u>Form of Indemnification Agreement with Directors and Executive Officers (Incorporated by reference to Exhibit 10.3 of the Registrant's Registration Statement on Form S-1 (Commission File No. 333-28441))†</u>
10.3	<u>Executive Termination Policy (Incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended April 30, 2011)†</u>
10.4	<u>Change in Control Policy (Incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended April 30, 2011)†</u>
10.4(a)	<u>Change in Control Agreement for Anton Chilton†*</u>
10.4(b)	<u>Change in Control Agreement for Pam Lopker (Incorporated by reference to Exhibit 10.6 of the Registrant's Annual Report on Form 10-K for the fiscal year ended January 31, 2009)†</u>
10.4(c)	<u>Change in Control Agreement for Daniel Lender (Incorporated by reference to Exhibit 10.7(a) of the Registrant's Annual Report on Form 10-K for the fiscal year ended January 31, 2009)†</u>
10.5(a)	<u>Offer letter between the Registrant and Daniel Lender dated October 10, 2008 (Incorporated by reference to Exhibit 10.72 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended October 31, 2008)†</u>
10.5(b)	<u>Offer letter between the Registrant and Anton Chilton, dated December 19, 2018 (Incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on December 21, 2018)†</u>
10.6(a)	<u>Acknowledgement between the Registrant and Daniel Lender dated October 10, 2008 (Incorporated by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q for the quarter ended April 30, 2011)†</u>
10.6(b)	<u>Acknowledgement between the Registrant and Anton Chilton dated December 19, 2018†*</u>
10.7	<u>Credit Agreement between the Registrant and Rabobank, N.A. effective as of May 30, 2012 (Incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on June 5, 2012)</u>
10.7(a)	<u>Real Estate Term Loan Note between the Registrant and Rabobank, N.A. effective as of May 30, 2012 (Incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on June 5, 2012)</u>
10.7(b)	<u>Deed of Trust between the Registrant and Rabobank, N.A. effective as of May 30, 2012 (Incorporated by reference to Exhibit 10.3 of the Registrant's Form 8-K filed on June 5, 2012)</u>

EXHIBIT NUMBER	EXHIBIT TITLE
10.7(c)	<u>ISDA 2002 Master Agreement between the Registrant and Rabobank, N.A. effective as of May 30, 2012 (Incorporated by reference to Exhibit 10.4 of the Registrant's Form 8-K filed on June 5, 2012)</u>
10.7(d)	<u>ISDA Schedule to the 2002 Master Agreement between the Registrant and Rabobank, N.A. effective as of May 30, 2012 (Incorporated by reference to Exhibit 10.5 of the Registrant's Form 8-K filed on June 5, 2012)</u>
10.7(e)	<u>Confirmation of a Swap Transaction between the Registrant and Rabobank, N.A. effective as of June 4, 2012 (Incorporated by reference to Exhibit 10.6 of the Registrant's Form 8-K filed on June 5, 2012)</u>
10.8	<u>2016 Stock Incentive Program (Incorporated by reference to Exhibit A of the Company's Definitive Proxy Statement for the Registrant's 2016 Annual Meeting of Stockholders filed on Schedule 14A on April 29, 2016)†</u>
10.8(a)	<u>Form of Stock Rights Agreement under the 2016 Stock Incentive Program (Incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on June 17, 2016)†</u>
10.8(b)	<u>Form of Restricted Stock Unit Agreement under the 2016 Stock Incentive Program (Incorporated by reference to Exhibit 10.3 of the Registrant's Form 8-K filed on June 17, 2016)†</u>
10.8(c)	<u>Form of Stock Appreciation Rights Agreement under the 2016 Stock Incentive Program (Incorporated by reference to Exhibit 10.4 of the Registrant's Form 8-K filed on June 17, 2016)†</u>
10.9	<u>Partner Agreement between the Registrant and Progress Software Corporation dated February 1, 2007, as amended by First Amendment to Partner Agreement dated October 30, 2007, Second Amendment to Partner Agreement dated January 30, 2008, SaaS Amendment to Partner Agreement dated May 6, 2008, Third Amendment to Partner Agreement dated July 31, 2008, Savvion Amendment to Partner Agreement dated February 15, 2011, Sixth Amendment to Partner Agreement dated May 16, 2014, Seventh Amendment to Partner Agreement dated July 29, 2014, Eighth Amendment to Partner Agreement dated January 11, 2016, and Ninth Amendment to Partner Agreement dated January 22, 2016 (Incorporated by reference to Exhibit 10.11 of the Registrant's Form 10-K/A filed on June 30, 2017. Filed in redacted form as confidential treatment as to certain portions of such exhibit has been granted by the Securities and Exchange Commission and was separately filed with the SEC.)</u>
21.1	<u>Subsidiaries of the Registrant*</u>
23.1	<u>Consent of Independent Registered Public Accounting Firm*</u>
31.1	<u>Certification by the Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*</u>
31.2	<u>Certification by the Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*</u>
32.1	<u>Certification by the Chief Executive Officer and the Chief Financial Officer furnished pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**</u>
101.INS	XBRL Instance Document*
101.SCH	XBRL Taxonomy Extension Schema Document*
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document*
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document*
101.LAB	XBRL Taxonomy Extension Label Linkbase Document*
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document*

* Indicates the document is filed herewith.

** Indicates the document is furnished herewith.

† Indicates a management contract or compensatory plan or arrangement required to be filed as an exhibit.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on April 16, 2019.

QAD Inc.

By: /s/ Daniel Lender
Daniel Lender
Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the Registrant and in the capacities and on the date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ ANTON CHILTON</u> Anton Chilton	Chief Executive Officer, Director (Principal Executive Officer)	April 16, 2019
<u>/s/ PAMELA M. LOPKER</u> Pamela M. Lopker	President, Director	April 16, 2019
<u>/s/ DANIEL LENDER</u> Daniel Lender	Executive Vice President, Chief Financial Officer (Principal Financial Officer)	April 16, 2019
<u>/s/ KARA BELLAMY</u> Kara Bellamy	Sr. Vice President, Corporate Controller (Chief Accounting Officer)	April 16, 2019
<u>/s/ SCOTT J. ADELSON</u> Scott J. Adelson	Director	April 16, 2019
<u>/s/ PETER R. VAN CUYLENBURG</u> Peter R. van Cuylenburg	Chairman of the Board	April 16, 2019
<u>/s/ LEE D. ROBERTS</u> Lee D. Roberts	Director	April 16, 2019
<u>/s/ LESLIE J. STRETCH</u> Leslie J. Stretch	Director	April 16, 2019

CHANGE IN CONTROL AGREEMENT

This change in control agreement (this “Agreement”), is made and entered into as of December 19, 2018 (the “Effective Date”), by and between QAD Inc., a Delaware corporation (together with its successors and assigns permitted under this Agreement, the “Company”), and Anton Chilton, an individual (the “Employee”).

WITNESSETH:

Whereas the Board of Directors of the Company (the “Board”) has determined that it is in the best interests of the Company and its stockholders to assure that the Company will have the continued dedication of the Employee, notwithstanding the possibility, threat or occurrence of a Change in Control (as defined below) of the Company;

Whereas the Board believes it is imperative to diminish the inevitable distraction of the Employee by virtue of the personal uncertainties and risks created by a pending or threatened Change in Control, to encourage the Employee’s full attention and dedication to the Company currently and in the event of any threatened or pending Change in Control, and to provide the Employee with compensation arrangements upon a Change in Control which provide the Employee with individual financial security and which are competitive with those of other corporations; and

Whereas in order to accomplish these objectives, the Board has caused the Company to enter into this Agreement.

Now, Therefore, in consideration of the premises and mutual covenants contained herein and for other good and valuable consideration, the Company and the Employee (individually a “Party” and together the “Parties”) agree as follows.

1. Term of Agreement. This Agreement shall commence as of the Effective Date and shall continue in effect until June 30, 2019, PROVIDED, HOWEVER, that commencing on June 30, 2019 and on each June 30 thereafter, the term of this Agreement shall automatically be extended for one (1) additional year (e.g., on June 30, 2019 through June 30, 2020), unless either the Company or the Employee shall have given written notice to the other, at least one (1) year prior thereto, that the term of this Agreement shall not be so extended; and PROVIDED, FURTHER, HOWEVER, that notwithstanding any such notice by the Company not to extend, the term of this Agreement shall not terminate prior to the expiration of eighteen (18) months after the occurrence of a Change in Control during the term of this Agreement.

2. Definitions.

2.1 “Base Monthly Salary” shall mean the monthly base compensation of the Employee.

2.2 “Cause” shall mean (a) the Employee is convicted of a felony involving property of the Company, or (b) the Employee, in carrying out the Employee’s duties under this Agreement, is guilty of willful refusal to perform, or willful neglect of, the Employee’s duties.

2.3 “Change in Control” shall mean the first occurrence of any of the following events:

(a) Any person (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended) or persons acting as a group, other than Pamela M. Lopker and Karl F. Lopker as joint holders, or either of them (the “Lopkers”) or a living trust for their benefit over which they maintain control of the assets of the trust and the voting rights for shares in the trust is or becomes the “beneficial owner” (as defined in Rule 13d-3 under said Act), directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the total voting power represented by the Company’s then outstanding voting securities.

(b) A merger or consolidation of the Company with any other corporation, other than a merger or consolidation that would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) at least fifty percent (50%) of the total voting power represented by the voting securities of the Company, or such surviving entity, outstanding immediately after such merger or consolidation; or

(c) The sale or other disposition by the Company of all, or substantially all, of the Company’s assets, other than a transfer to (i) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to its stock, (ii) an entity, fifty percent (50%) or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (iii) a person, or persons acting as a group, that owns, directly or indirectly, fifty percent (50%) or more of the total value or voting power represented by the Company’s then outstanding voting securities, or (iv) an entity, fifty percent (50%) or more of the total value or voting power of which is owned, directly or indirectly, by a person described in clause (iii).

Each of the foregoing events is intended to qualify as a change in ownership or effective control for purposes of Section 409A(a)(2)(A)(v) of the Internal Revenue Code of 1986, as amended (the “Code”), and the provisions of this Section 2.3 shall be interpreted accordingly.

2.4 “Disability” shall mean that the Employee has been unable to perform their duties under this Agreement as a result of the Employee’s incapacity due to physical or mental illness with or without reasonable accommodation, and such inability, at least twenty-six (26) weeks after its commencement, is determined to be total and permanent by a physician selected by the Company, or its insurers, and acceptable to the Employee or the Employee’s legal representative (such statement of acceptability not to be unreasonably withheld).

2.5 “Division” shall mean a business unit or other substantial business operation within the Company that is operated as a separate profit center, but that is not maintained by the Company as a separate legal entity.

2.6 “Equity Compensation” shall mean any equity compensation granted under the QAD Inc. 2006 Stock Incentive Program, the QAD Inc. 2016 Stock Incentive Program and any subsequent shareholder-approved QAD Inc. stock incentive program.

3. Change in Control Severance Benefits. In the event there occurs a Change in Control and the Employee's employment with the Company is terminated on or before eighteen (18) months after the date of the Change in Control, then the following shall apply:

3.1 Voluntary Resignation; Termination for Cause. If the Employee's employment terminates in a voluntary resignation, or if the Employee is terminated for Cause, or if the Employee voluntarily accepts a position at the time of a Change in Control below the level currently held by the Employee, and such acceptance occurs at, or proximate to, the time of a Change in Control, then the Employee shall not be entitled to receive severance benefits except for those (if any) as may be available under the Company's severance and benefits plans and policies existing at the time of such termination.

3.2 Constructive Termination; Termination Without Cause. If the Employee suffers Constructive Termination (as defined below) or Termination without Cause, then the Employee shall be entitled to the following:

(a) payment, within thirty (30) days following the termination of the Employee's employment, of a lump sum cash amount equal to eighteen (18) months times the greater of (x) the Employee's Base Monthly Salary at the time of the Change in Control or (y) the Employee's Base Monthly Salary at the time of the termination of the Employee's employment; and

(b) payment, within thirty (30) days following the termination of the Employee's employment, of a lump sum cash amount equal to one point zero (1.5) multiplied by the greater of (x) the average annual bonus received by the Employee during the two (2) fiscal years immediately prior to the termination of the Employee's employment or (y) the annual bonus that would be due for the fiscal year in progress at the time of the termination of the Employee's employment if the Employee and the Company met the on target goals to receive such bonus; and

(c) immediate vesting of any Equity Compensation granted to the Employee; and

(d) payment, within thirty (30) days following termination of the Employee's employment, of a lump sum cash amount equivalent to the present value of the projected cost (based upon the Company's programs in effect immediately prior to the Change in Control) of continuation of all employee benefits and perquisites, including life insurance, health benefits, disability insurance, cars and expense reimbursement, and 401(k) matching payments for a period following such termination of employment for eighteen (18) months plus an amount equal to the portion of the Employee's unvested account balance (as of the date of termination of employment) under the Company's 401(k) plan that would vest if the Employee had eighteen (18) additional months of service for vesting purposes under the Company's 401(k) plan (subject to applicable taxes and withholding); and

(e) all benefits pursuant to the Consolidated Omnibus Reconciliation Act of 1986 ("COBRA") and the Company 401(k) Plan upon termination.

3.3 Effect on Existing Plans. This Agreement and the payments provided hereunder supersede the Company's existing severance and benefit plans, policies and agreements existing now and at the time of termination with respect to severance or termination benefits provided to Employee in the event of termination of employment during the eighteen (18) month period following a Change in Control, and are not in addition thereto.

3.4 Death; Disability. If the Employee's employment terminates due to the Employee's Disability or death, then such termination shall be treated as if it were a termination without Cause and severance and other benefits shall be provided in accordance with Section 3.2 above.

3.5 Payment to Specified Employee. If a payment obligation under this Agreement arises on account of the Employee's separation from service while the Employee is a "specified employee" (as defined under Section 409A of the Code and determined in good faith by the Compensation Committee of the Board), any payment of "deferred compensation" (as defined under Treasury Regulation Section 1.409A-1(b)(1), after giving effect to the exemptions in Treasury Regulation Sections 1.409A-1(b)(3) through (b)(12)) that is scheduled to be paid within six (6) months after such separation from service shall accrue with interest and shall be paid within 30 days after the end of the six-month period beginning on the date of such separation from service or, if earlier, within 30 days after the appointment of the personal representative or executor of the Employee's estate following his death. For purposes of the preceding sentence, interest shall accrue at the prime rate of interest published in the northeast edition of The Wall Street Journal on the date of Employee's separation from service.

3.6 Termination of Employment. For all purposes under this Agreement, references to "termination of employment," "employment terminates" and similar terms shall mean "separation from service" as defined for purposes of Section 409A of the Code and the regulations promulgated thereunder.

4 . Constructive Termination of Employment. "Constructive Termination" shall mean and exist if, without the Employee's prior written consent, one or more of the following events occurs and the Employee shall elect to terminate the Employee's employment with the Company:

(a) the assignment to Employee of duties which are wholly and clearly inconsistent with the position and status of an executive of the Company, or a substantial alteration in the nature, status or prestige of Employee's official position resulting in a decrease in authority or responsibilities from those in effect immediately prior to a Change in Control;

(b) The Employee's Base Monthly Salary is decreased by the Company, or the Employee's benefits or opportunities under any employee benefit or incentive plan or program of the Company is or are materially reduced other than in connection with a reduction in salary or benefits generally applicable to all employees of the Company;

(c) The Employee's own office location, as provided for in this Agreement, is relocated to a location more than twenty-five (25) miles from the Employee's then present location without the Employee's written consent;

(d) The Company fails to pay the Employee any deferred payments under any bonus or incentive plans in a timely manner;

(e) The Company fails to reimburse the Employee for business expenses in accordance with the Company's policies, procedures or practices;

(f) The Company fails to agree to or actually indemnify the Employee for the Employee's actions and/or inactions, as either a director or officer of the Company, to the fullest extent permitted by Delaware law, and the Company fails to maintain reasonable levels of directors and officers liability insurance coverage for the Employee when such insurance is available;

(g) The Company fails to obtain a written agreement from any successor or assign of the Company to assume and perform Employee's employment agreement as then in effect and this Agreement; or

(h) The Company purports to terminate the Employee's employment for Cause and such purported termination of employment is not effected in accordance with the procedures required by this Agreement, and for purposes of this Agreement, such purported termination of employment shall be invalid and of no force and effect.

5. Equity Compensation Acceleration

5.1 Equity Compensation Acceleration upon Change of Control. If the Employee does not terminate employment in the event of a Change of Control, fifty percent (50%) of the then unvested portion of any Equity Compensation held by the Employee under the Company's equity compensation plans and outstanding at the time of the Change in Control shall become vested and the Employee shall automatically have the right to exercise all, or any portion, of such Equity Compensation to the extent so vested in addition to any portion of the Equity Compensation exercisable prior to the Change in Control. Where the Change in Control results from a merger or consolidation of the Company with any other corporation, such vesting shall occur immediately prior to consummation of such merger or consolidation, and is contingent upon the consummation of such merger or consolidation.

5 . 2 Equity Compensation Acceleration Following Change in Control. Subject to the continued employment of the Employee, after acceleration of vesting under Section 5.1 above, the remaining unvested portion of any Equity Compensation granted to Employee prior to the Change in Control shall become fully vested upon the first anniversary of the Change in Control (or the vesting date of such Equity Compensation, if earlier). If, however, the Employee's employment terminates within the twelve (12) month period following the Change of Control, then the vesting of such Equity Compensation shall be handled in accordance with the Change in Control Severance Benefits set forth above in Section 3.1.

6 . No Mitigation; No Offset. In the event of any termination of employment covered by this Agreement, the Employee shall be under no obligation to seek other employment and there shall be no offset against amounts due the Employee under this Agreement on account of any remuneration attributable to any subsequent employment that the Employee may obtain. Any amounts due under this Agreement are in the nature of severance payments, or liquidated damages, or both, and are not in the nature of a penalty.

7 . Severance Pay and Benefits. The severance pay and benefits provided for in this Agreement shall be in lieu of any other severance or termination pay to which the Employee otherwise may be entitled as a result of termination of employment during the eighteen (18) month period following a Change in Control under any Company severance or termination plan, program, practice, agreement or arrangement, including any agreement relating to the Employee's employment with the Company. If the Employee receives severance or termination benefits or payments under this Agreement, the Employee may not receive severance or termination benefits under any other Company policy, plan, agreement or arrangement. The Employee's entitlement to any other compensation or benefits shall be determined in accordance with the Company's employee benefit plans and other applicable programs, policies and practices then in effect, provided such other compensation or benefits have not been addressed in this Agreement.

8. CERTAIN ADDITIONAL PAYMENTS.

8.1 Gross-Up Payment Amount. Notwithstanding anything in this Agreement to the contrary, in the event it shall be determined that any payment or distribution by the Company to or for the benefit of the Employee, whether paid, payable, distributed or distributable pursuant to this Agreement or otherwise (a "Payment") would be subject to the excise tax imposed by Section 4999 of the Code (or any successor provision) or any interest or penalties with respect to such excise tax (such excise tax, together with any such interest and penalties, are collectively referred to in this Agreement as the "Excise Tax"), then the Employee shall be entitled to receive an additional payment (a "Gross-Up Payment") in an amount such that after the payment by the Employee of all taxes (including any interest or penalties imposed with respect to such taxes), including any Excise Tax, imposed upon the Gross-Up Payment, the Employee retains an amount of the Gross-Up Payment equal to the Excise Tax imposed upon the Payment.

8.2 Determinations. Subject to the provisions of Section 8.3, all determinations required to be made under this Section 8, including whether and when a Gross-Up Payment is required and the amount of such Gross-Up Payment and the assumptions to be utilized in arriving at such determination, shall be made by an accounting firm of national standing reasonably selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations to both the Company and the Employee within fifteen (15) business days of the receipt of written notice from the Employee that there has been a Payment, or such earlier time as is requested by the Company. Any Gross-Up Payment, as determined pursuant to this Section 8, shall be paid by the Company to the Employee within fifteen (15) days of the receipt of the Accounting Firm's determination. All fees and expenses of the Accounting Firm shall be borne solely by the Company. Any determination by the Accounting Firm shall be binding upon the Company and the Employee. As a result of the possible uncertainty in application of Section 4999 of the Code at the time of the initial determination by the Accounting Firm hereunder, it is possible that Gross-Up Payments will not have been made by the Company that should have been made ("Underpayment"), consistent with the calculations required to be made hereunder. In the event that the Company exhausts its remedies pursuant to Section 8.3 and the Employee thereafter is required to make a payment of any Excise Tax, the Accounting Firm shall determine the amount of the Underpayment that has occurred and any such Underpayment shall be promptly paid by the Company to or for the benefit of the Employee.

8.3 IRS Claims. The Employee shall notify the Company in writing of any claim by the Internal Revenue Service that, if successful, would require the payment by the Company of the Gross-Up Payment. Such notification shall be given as soon as practicable but no later than ten (10) business days after the Employee is informed in writing of such claim and shall apprise the Company of the nature of such claim and the date on which such claim is to be paid. The Employee shall not pay such claim prior to the expiration of the thirty (30) -day period following the date on which the Employee gives such notice to the Company (or such shorter period ending on the date that any payment of taxes with respect to such claim is due). If the Company notifies the Employee in writing prior to the expiration of such period that it desires to contest such claim, the Employee shall:

(a) give the Company any information reasonably requested by the Company relating to such claim,

(b) take such action in connection with contesting such claim as the Company shall reasonably request in writing from time to time, including, without limitation, accepting legal representation with respect to such claim by an attorney selected by the Company and reasonably acceptable to the Employee,

(c) cooperate with the Company in good faith in order effectively to contest such claim, and

(d) permit the Company to participate in any proceedings relating to such claim; provided, however, that the Company shall bear and pay directly all costs and expenses (including additional interest and penalties) incurred in connection with such contest and shall indemnify and hold the Employee harmless, on an after-tax basis, for any Excise Tax or income tax (including interest and penalties with respect thereto) imposed as a result of such representation and payment of costs and expenses. Without limitation on the foregoing provisions of this Section, the Company shall control all proceedings taken in connection with such contest and, at its sole option, may pursue or forgo any and all administrative appeals, proceedings, hearings and conferences with the taxing authority in respect of such claim and may, at its sole option, either direct the Employee to pay the tax claimed and sue for a refund or contest the claim in any permissible manner, and the Employee agrees to prosecute such contest to a determination before any administrative tribunal, in a court of initial jurisdiction and in one or more appellate courts, as the Company shall determine; provided, however, that if the Company directs the Employee to pay such claim and sue for a refund, the Company shall advance the amount of such payment to the Employee, on an interest-free basis and shall indemnify and hold the Employee harmless, on an after-tax basis, from any Excise Tax or income tax (including interest or penalties with respect thereto) imposed with respect to such advance or with respect to any imputed income with respect to such advance; and further provided that any extension of the statute of limitations relating to payment of taxes for the taxable year of the Employee with respect to which such contested amount is claimed to be due is limited solely to such contested amount. Furthermore, the Company's control of the contest shall be limited to issues with respect to which a Gross-Up Payment would be payable hereunder and the Employee shall be entitled in his sole discretion to settle or contest, as the case may be, any other issue raised by the Internal Revenue Service or any other taxing authority.

8.4 Refunds. If, after receipt by the Employee of an amount advanced by the Company pursuant to Section 8.3, the Employee becomes entitled to receive any refund with respect to such claim, the Employee shall (subject to the Company's complying with the requirements of such Section) promptly pay to the Company the amount of such refund (together with any interest paid or credited thereon after taxes applicable thereto). If, after receipt by the Employee of an amount advanced by the Company pursuant to Section 8.3, a determination is made that the Employee shall not be entitled to any refund with respect to such claim and the Company does not notify the Employee in writing of its intent to contest such denial of refund prior to the expiration of thirty (30) days after such determination, then such advance shall be forgiven and shall not be required to be repaid and the amount of such advance shall offset, to the extent thereof, the amount of Gross-Up Payment required to be paid.

8.5 409A Payment Deadline. In all events, the Gross-Up Payment, if any, including any Underpayment, shall not be made later than the December 31 following Employee's taxable year in which Employee remits the Excise Tax.

9. Divestiture. Notwithstanding any other provision of this Agreement to the contrary, the termination of the Employee's employment with the Company in connection with the sale, divestiture or other disposition of a subsidiary or Division shall not be deemed to be a termination of employment of the Employee for purposes of this Agreement provided the Employee accepts employment offered by the purchaser or acquirer of such subsidiary or Division and provided the Company obtains an agreement from such purchaser or acquirer to honor the terms of this Agreement.

10. Confidentiality and Non-Compete.

10.1 Non-Disclosure of this Agreement. Employee agrees that the terms of this Agreement are a private matter, which shall not be divulged in any form to others. Accordingly, Employee hereby agrees that Employee will not disclose, disseminate and/or publicize or cause to be disclosed, disseminated and/or publicized any of the terms of this Agreement or the discussions which have led up to this Agreement to anyone, with the exception of Employee's attorney, any financial or tax advisors, and immediate family members, who shall not divulge its contents to any third party.

10.2 Confidential Information. Employee acknowledges that Employee may be in receipt of confidential information concerning the Company, agrees that any confidential information concerning the Company and its affiliates will be maintained in strict confidence and not be disclosed to any other person, including but not limited to, and past, present or prospective customers of the Company. The parties agree that money damages would not be a sufficient remedy for breach of this Section 10.2 and that, in addition to all other remedies which any party hereto may have, each party will be entitled to specific performance and injunctive or other equitable relief as a remedy for such breach. This Section 10.2 shall not supersede any other confidentiality agreement entered into between the parties.

10.3 Non-Compete. In the event of any termination covered by Section 3.2 and in return for the payment and benefits provided under this Agreement, the Employee agrees that, for a period of one (1) year after the last day of employment with the Company, Employee shall not:

- (a) compete with the Company, or assist any other party to compete with the Company, in any manner;
- (b) attempt to solicit or recruit the Company employees or otherwise interfere with the Company's relationship with its employees or customers;
- (c) make any comment, remark or statement that disparages the Company or portrays the Company in a negative manner.

11. At-Will Employment. The Company and the Employee acknowledge that the Employee's employment is at will and may be terminated at any time and for any reason, with or without notice. On termination of the Employee's employment, the Employee shall not be entitled to any payments, benefits, damages, awards or compensation other than as provided by this Agreement, or as may otherwise be available in accordance with the Company's established employee plans and policies at the time of termination.

12. Miscellaneous.

12.1 Governing Law. This Agreement shall be governed in all respects by the laws of the State of California.

12.2 Successors and Assigns. Except as otherwise provided herein, the provisions hereof shall inure to the benefit of, and be binding upon, the successors, assigns, heirs, executors and administrators of the parties hereto.

12.3 Entire Agreement: Amendment. This Agreement constitutes the full and entire understanding and agreement between the parties with regard to the subject hereof and thereof. Neither this Agreement nor any term hereof may be amended, waived, discharged or terminated other than by a written instrument signed by the Company and the Employee.

12.4 Notices. Except as may be otherwise provided herein, all notices and other communications required or permitted hereunder shall be in writing and shall be hand delivered or delivered via next day delivery, (a) if to the Employee, to such address as the Employee, or any of the Employee's successors or assigns, shall have furnished to the Company in writing or (b) if to the Company, to such address as the Company shall have furnished to the Employee or the Employee's successors or assignees in writing. Notices via next day delivery will be effective three (3) business days after delivery to the delivery firm, charges prepaid.

12.5 Delays or Omissions. No delay or omission to exercise any right, power or remedy accruing to the Employee, upon any breach or default of Company under this Agreement, shall impair any such right, power or remedy of the Employee, nor shall it be construed to be a waiver of any such breach or default, or an acquiescence therein, or of any similar breach or default thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. Any waiver, permit, consent or approval of any kind or character on the part of any holder of any breach or default under this Agreement, or any waiver on the part of any holder of any provisions or conditions of this Agreement, must be in writing and shall be effective only to the extent specifically set forth in such writing. All remedies, either under the Agreement, or by law or otherwise afforded to any holder shall be cumulative and not alternative.

12.6 Expenses. The Company and the Employee shall each bear their own expenses and legal fees incurred on their behalf with respect to this Agreement and the transactions contemplated hereby.

12.7 Counterparts. This Agreement may be executed in any number of counterparts, all of which together shall constitute one instrument.

12.8 Severability. In the event that any provision of this Agreement becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement shall continue to be in full force and effect without said provision; provided that no such severability shall be effective if it materially changes the economic benefit of this Agreement to any party.

12.9 Survival. The provisions of the sections entitled "Excise Tax Reduction", "Confidentiality and Non-Compete", "At-Will Employment" and "Miscellaneous" shall survive the expiration or termination of this Agreement.

12.10 Section 409A Compliance. This Agreement is intended not to result in the imposition of any tax, interest charge or other assessment, penalty or addition under Section 409A of the Code. In addition to any specific references to Section 409A of the Code in this Agreement, all terms and conditions of this Agreement are intended, and shall be interpreted and applied to the greatest extent possible in such manner as may be necessary, to comply with the provisions of Section 409A of the Code and any rules, regulations or other regulatory guidance issued under Section 409A of the Code. If any modification of this Agreement is necessary to comply with the provisions of Section 409A of the Code, and the making of such modification itself does not fail to comply with any requirement of Section 409A of the Code, then the Company and the Employee agree to modify this Agreement in the least restrictive manner necessary to accomplish such result without causing any diminution in the value of the payments to the Employee. With respect to any reimbursement of expenses of, or any provision of in-kind benefits to, the Employee, as specified under this Agreement, such reimbursement of expenses or provision of in-kind benefits shall be subject to the following conditions: (1) the expenses eligible for reimbursement or the amount of in-kind benefits provided in one taxable year shall not affect the expenses eligible for reimbursement or the amount of in-kind benefits provided in any other taxable year, except for any medical reimbursement arrangement providing for the reimbursement of expenses referred to in Section 105(b) of the Code; (2) the reimbursement of an eligible expense shall be made no later than the end of the year after the year in which such expense was incurred; and (3) the right to reimbursement or in-kind benefits shall not be subject to liquidation or exchange for another benefit. The preceding provisions, however, shall not be construed as a guarantee by the Company of any particular tax effect to Employee under this Agreement. The Company shall not be liable to Employee for any payment made under this Agreement that is determined to result in an additional tax, penalty, or interest under Section 409A of the Code, nor for reporting in good faith any payment made under this Agreement as an amount includible in gross income under Section 409A of the Code.

12.11 Arbitration. Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled by arbitration before one (1) arbitrator, in Santa Barbara, California, administered by the American Arbitration Association under its Employment Dispute Resolution Rules, and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. Unless otherwise provided for by law, the Company and the Employee shall each pay half of the costs and expenses of such arbitration.

EMPLOYEE HAS READ AND UNDERSTANDS THIS SECTION, WHICH PROVIDES FOR ARBITRATION. EMPLOYEE UNDERSTANDS THAT BY SIGNING THIS AGREEMENT, EMPLOYEE AGREES TO SUBMIT ANY CLAIMS ARISING OUT OF, OR RELATING TO, OR IN CONNECTION WITH THIS AGREEMENT, OR THE INTERPRETATION, VALIDITY, CONSTRUCTION, PERFORMANCE, BREACH OR TERMINATION OF THIS AGREEMENT TO BINDING ARBITRATION, AND THAT THIS ARBITRATION CLAUSE CONSTITUTES A WAIVER OF EMPLOYEE'S RIGHT TO A JURY TRIAL AND RELATES TO THE RESOLUTION OF ALL DISPUTES RELATING TO ALL ASPECTS OF THIS AGREEMENT.

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of the date first written above.

QAD INC., a Delaware corporation

By: /s/ Kaye Swanson
Kaye Swanson
Chief People Officer

EMPLOYEE:

/s/ Anton Chilton
Anton Chilton

ACKNOWLEDGEMENT AND CLARIFICATION

This ACKNOWLEDGEMENT AND CLARIFICATION, effective as of December 19, 2018, is between QAD Inc., a Delaware corporation, with its principal offices located at 100 Innovation Place, Santa Barbara, California 93108 ("QAD"), and Anton Chilton, residing at 5110 Cathedral Oaks Rd., Santa Barbara, CA 93111 ("Employee").

RECITALS

QAD and Employee hereby acknowledge and agree that severance benefits, as described in Employee's offer letter of December 19, 2018, are provided under and are subject to the terms and conditions of the Executive Termination Policy as approved by QAD Inc.'s Board of Directors and in effect as of December 18, 2008 (the "Policy"), but that any Benefits provided to Employee pursuant to such Policy shall be for a period of twelve (12) months instead of six (6) months.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on and as of the day and year first above written.

EMPLOYEE

QAD Inc.,
A Delaware Corporation

By:

/s/ Anton Chilton
Anton Chilton

/s/ Kaye Swanson
Kaye Swanson
Chief People Officer

QAD Inc.

LIST OF REGISTRANT'S SUBSIDIARIES
(all 100% owned)

<u>Subsidiary Name.</u>	<u>Country of Organization</u>
QAD Australia Pty. Limited	Australia
QAD Europe NV/SA	Belgium
QAD (Bermuda) Ltd.	Bermuda
QAD Brasil Ltda.	Brazil
QAD Canada ULC	Canada
Tradewind Compliance Inc.	Canada
QAD China Ltd.	China
QAD Europe s.r.o.	Czech Republic
QAD Europe S.A.S.	France
DynaSys S.A.S.	France
QAD Europe GmbH	Germany
QAD Asia Limited	Hong Kong
QAD India Private Limited	India
PT QAD Asia Indonesia	Indonesia
Precision Software Limited	Ireland
QAD Ireland Limited	Ireland
QAD Europe (Ireland) Limited	Ireland
QAD Italy S.r.l.	Italy
QAD Korea Limited	Korea
QAD Mexicana, S.A. de C.V.	Mexico
QAD Sistemas Integrados Servicios de Consultoria, S.A. de C.V.	Mexico
QAD EMEA Holdings B.V.	Netherlands
QAD Europe B.V.	Netherlands
QAD Netherlands B.V.	Netherlands
QAD Polska Sp. z o.o.	Poland
QAD Lusitana Europe — Software e Servicos, Unipessoal, Limitada	Portugal
QAD Singapore Private Limited	Singapore
QAD Software South Africa (Proprietary) Limited	South Africa
QAD Europe S.L.	Spain
QAD Europe SA/AG	Switzerland
QAD (Thailand) Ltd.	Thailand
QAD Europe Limited	United Kingdom
QAD United Kingdom Limited	United Kingdom
QAD Brazil, Inc.	USA
QAD Holdings Inc.	USA
QAD Japan Inc.	USA
QAD Ortega Hill, LLC	USA

Consent of Independent Registered Public Accounting Firm

The Board of Directors
QAD Inc.:

We consent to the incorporation by reference in the registration statements (Nos. 333-96065 and 333-198779) on Form S-3 and (Nos. 333-35367, 333-48381, 333-66610, 333-137417, 333-160125, and 333-212435) on Form S-8 of QAD Inc. of our report dated April 16, 2019, with respect to the consolidated balance sheets of QAD Inc. and subsidiaries as of January 31, 2019 and 2018, the related consolidated statements of operations and comprehensive income (loss), stockholders' equity, and cash flows for each of the years in the three-year period ended January 31, 2019 and the related notes and financial statement schedule II (collectively, the consolidated financial statements), and the effectiveness of internal control over financial reporting as of January 31, 2019, which report appears in the January 31, 2019 annual report on Form 10-K of QAD Inc.

The audit report covering the January 31, 2019 consolidated financial statements refers to a change in the method of accounting for the recognition of revenue effective February 1, 2018 due to the adoption of Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers*.

/s/ KPMG LLP

Los Angeles, California
April 16, 2019

**CERTIFICATIONS UNDER
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Anton Chilton, certify that:

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

Date: April 16, 2019

/s/ ANTON CHILTON
Anton Chilton
Chief Executive Officer
QAD Inc.

**CERTIFICATIONS UNDER
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Daniel Lender, certify that:

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

Date: April 16, 2019

/s/ DANIEL LENDER
Daniel Lender
Chief Financial Officer
QAD Inc.

**CERTIFICATION FURNISHED PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of QAD Inc. (the "Company") on Form 10-K for the period ending January 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Anton Chilton, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

Date: April 16, 2019

/s/ ANTON CHILTON
Anton Chilton
Chief Executive Officer
QAD Inc.

In connection with the Annual Report of QAD Inc. (the "Company") on Form 10-K for the period ending January 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Daniel Lender, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

Date: April 16, 2019

/s/ DANIEL LENDER
Daniel Lender
Chief Financial Officer
QAD Inc.