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

FORM 10-K

(Mark One)

- ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended April 30, 2019

OR

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

For the transition period from _____ to _____

Commission File Number 0-12456

AMERICAN SOFTWARE, INC.
(Exact name of registrant as specified in its charter)

Georgia

(State or other jurisdiction of
incorporation or organization)

58-1098795

(IRS Employer
Identification No.)

**470 East Paces Ferry Road, N.E.
Atlanta, Georgia**

(Address of principal executive offices)

30305

(Zip Code)

(404) 261-4381

Registrant's telephone number, including area code

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

Title of each class

None

Trading Symbol

Name of each exchange on which registered

None

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

Class A Common Shares, \$0.10 Par Value

(Title of class)

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

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

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

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input checked="" type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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 October 31, 2018, the last business day of the registrant’s most recently completed second fiscal quarter, 29,132,444 Class A Common Shares and 1,821,587 Class B Common Shares of the registrant were outstanding. The aggregate market value (based upon the closing price of Class A Common Shares as quoted on the NASDAQ National Market System on October 31, 2018) of the Class A Common Shares held by non-affiliates on that date was approximately \$356.3 million. As of July 5, 2019, 29,534,622 Class A Common Shares and 1,821,587 Class B Common Shares of the registrant were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE; LOCATION IN FORM 10-K

Portions of the Company’s Proxy Statement for its 2019 Annual Meeting of Shareholders are incorporated by reference into Part III.

American Software Inc.
ANNUAL REPORT ON FORM 10-K
For the Fiscal Year Ended April 30, 2019

TABLE OF CONTENTS

Item 1.	Business	1
Item 1A.	Risk Factors	12
Item 1B.	Unresolved Staff Comments	32
Item 2.	Properties	32
Item 3.	Legal Proceedings	32
Item 4.	Mine Safety Disclosures	32
Item 5.	Market for Registrant’s Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities	33
Item 6.	Selected Consolidated Financial Data	36
Item 7.	Management’s Discussion and Analysis of Financial Condition and Results of Operations	37
Item 7A.	Quantitative and Qualitative Disclosures about Market Risk	49
Item 8.	Consolidated Financial Statements and Supplementary Data	50
Item 9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	83
Item 9A.	Controls and Procedures	84
Item 9B.	Other Information	84
Item 10.	Directors, Executive Officers and Corporate Governance	84
Item 11.	Executive Compensation	84
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	84
Item 13.	Certain Relationships and Related Transactions, and Director Independence	85
Item 14.	Principal Accounting Fees and Services	85
Item 15.	Exhibits, Financial Statement Schedules	85
Item 16.	Form 10-K Summary	87

PART I

Item 1. BUSINESS

Special Cautionary Notice Regarding Forward-Looking Statements

We believe that it is important to communicate our future expectations to our shareholders and to the public. This report contains forward-looking statements, including, in particular, statements about our goals, plans, objectives, beliefs, expectations and prospects, under the headings "Item 1. Business" and "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in this report. You can identify these statements by forward-looking words such as "anticipate," "intend," "plan," "continue," "could," "grow," "may," "potential," "predict," "strive," "will," "seek," "estimate," "believe," "expect," and similar expressions that convey uncertainty of future events or outcomes. Any forward-looking statements herein are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include statements concerning future:

- *results of operations;*
- *liquidity, cash flow and capital expenditures;*
- *demand for and pricing of our products and services;*
- *viability and effectiveness of strategic alliances;*
- *industry conditions and market conditions;*
- *acquisition activities and the effect of completed acquisitions; and*
- *general economic conditions.*

Although we believe that the goals, plans, expectations, and prospects reflected by our forward-looking statements are reasonable in view of the information currently available to us, those statements are not guarantees of performance. There are many factors that could cause our actual results to differ materially from those anticipated by forward-looking statements made herein. These factors include, but are not limited to, continuing U.S. and global economic uncertainty, the timing and degree of business recovery, unpredictability and the irregular pattern of future revenues, dependence on particular market segments or customers, competitive pressures, delays, product liability and warranty claims and other risks associated with new product development, undetected software errors, market acceptance of our products, technological complexity, the challenges and risks associated with integration of acquired product lines, companies and services, as well as a number of other risk factors that could affect our future performance. Factors that could cause or contribute to such differences include, but are not limited to, those we discuss under the section captioned "Risk Factors" in Item 1A. of this Form 10-K as well as the cautionary statements and other factors that we discuss in other sections of this Form 10-K.

Company Overview

American Software, Inc. ("American Software" or the "Company") was incorporated in Georgia in 1970. The Company is headquartered in Atlanta, Georgia with U.S. offices in Boston, Chicago, Dallas, Indianapolis, New York, St. Louis, Miami, Pittsburgh and San Diego; and international offices in the United Kingdom, Sweden, Germany, The Netherlands, India, New Zealand and Australia.

We provide our software and services solutions through three major operating segments; (1) Supply Chain Management ("SCM"), (2) Information Technology Consulting ("IT Consulting") and (3) Other. In addition to our core SCM software business, we also offer technology staffing and consulting services through our wholly-owned subsidiary, The Proven Method, Inc., in the IT Consulting segment, and we continue to provide software and services to our legacy enterprise resource planning ("ERP") customers included in the Other segment.

Our primary operating units under our SCM segment include Logility, Inc., New Generation Computing, Inc. ("NGC"), Demand Management, Inc. ("DMI"), and Halo Business Intelligence. Logility and New Generation Computing are each a wholly-owned subsidiary of the Company. Demand Management, Inc. is a wholly-owned subsidiary of Logility, Inc. and Halo Business Intelligence is a division of Logility, Inc.

American Software enables enterprises to accelerate their operations from product concept to customer availability. Our four brands - Logility, Demand Solutions, Halo and NGC Software - provide a single platform spanning eight supply chain process areas, including demand optimization, inventory optimization, supply optimization, retail optimization, quality and compliance, product lifecycle management ("PLM"), sourcing management and integrated business planning. Our platform includes advanced

analytics and is fueled by supply chain master data, allowing for the automation of critical business processes through the application of artificial intelligence ("AI") and machine learning algorithms to a variety of internal and external data streams.

We believe enterprises are facing unprecedented rates of change and disruption across their operations. Increasing customer expectations for convenience and personalization, fast and free delivery and product freshness are forcing enterprises to adapt or be left behind. Given constraints arising from a shortage of skilled supply chain talent and a desire to keep costs at a minimum, we expect enterprises to embrace digital transformation initiatives to meet these challenges. Our solution collapses the business cycle time required from product concept to customer availability. Our platform enables organizations to create a digital twin of their physical supply chain network and to improve the speed and agility of their operations by implementing automated planning processes that evaluate multiple business scenarios. These processes continuously analyze business and market signals to better inform product design and development, increase forecast accuracy, optimize inventory across the supply chain and in-store and ensure high customer satisfaction.

Our platform is highly regarded by customers and industry analysts alike. We have been positioned in the Leaders quadrant in Gartner, Inc.'s ("Gartner") May 7, 2019 report, *Magic Quadrant for Sales and Operations Planning Systems of Differentiation*, and August 21, 2018 report, *Magic Quadrant for Supply Chain Planning System of Record*. We believe our platform is rated highly due to our flexible advanced analytics, underlying Software as a Service ("SaaS") architecture, ease of integration with third-party systems, lower total cost of ownership relative to competitors and the broad scope of supply chain planning functions supported.

We serve approximately 1,100 customers located in more than 80 countries and largely concentrated within key vertical markets, including apparel and other soft goods, chemical and process, consumer packaged goods, durable goods, life sciences and retail. Our solutions are marketed and sold through a direct sales team as well as an indirect global value-added reseller ("VAR") distribution network. While our solutions may be deployed in the cloud or on-premise, customers are increasingly opting for our cloud-based SaaS deployments. We further support our customers with an array of consulting, implementation and training services as well as technical support and hosting.

We derive revenues from four sources: subscriptions, software licenses, maintenance and services. We generally determine SaaS subscription and software license fees based on the breadth of functionality, users and/or divisions subscribed and/or licensed. Services and other revenues consist primarily of fees from software implementation, training, consulting services, SaaS, hosting, and managed services. We bill primarily under time and materials arrangements and recognize revenues as we perform services. Subscription and maintenance agreements typically are for a three to five-year term, commencing at the time of the initial contract. We generally bill these fees annually in advance and then recognize the resulting revenues ratably over the term of the agreement. Deferred revenues represent advance payments or billings for subscriptions, software licenses, services and maintenance billed in advance of the time we recognize the related revenues.

Market Opportunity

Today's manufacturers, distributors and retailers must respond to rising consumer expectations to buy anywhere, deliver anywhere and return anywhere even as global economic conditions and competitive pressures force businesses to reduce costs, decrease order cycle times and improve operating efficiencies. To meet these demands, we believe businesses must dramatically improve the performance of their supply chains, which can only be achieved through automation, artificial intelligence and advanced analytics. We leverage artificial intelligence and machine learning algorithms throughout our supply chain management software platform, enabling enterprises to accelerate the cycle time from product concept to customer availability.

Supply chain management refers to the process of managing the complex global network of relationships that organizations maintain with external trading partners (customers and suppliers) to design products, forecast demand, source supply, manufacture products, distribute and allocate inventory and deliver goods and services to the end customer. Supply chain management involves the activities related to sourcing and supplying and merchandising products or services as well as the sales and marketing activities that influence the demand for goods and services, such as new product introductions, promotions, pricing and forecasting. Additional aspects of supply chain management include comprehensive sales and operations planning ("S&OP") as well as PLM, product sourcing quality and vendor compliance to ensure the right products are brought to market on time and in good condition. Companies that effectively communicate, collaborate and integrate with their trading partners across the multi-enterprise network or supply chain can realize significant competitive advantages in the form of lower costs, greater customer loyalty, reduced stock-outs, more efficient sourcing, reduced inventory levels, synchronized supply and demand and increased revenue.

Gartner's March 25, 2019 report, *Forecast: Enterprise Application Software, Worldwide, 2017-2023, 1Q19 Update*, predicts spending on Supply Chain Management software solutions will exceed \$15 billion in 2019 and reach \$22 billion by 2023. This represents a compounded annual growth rate ("CAGR") of 9.8% through 2023. Within the Supply Chain Management software

market, Gartner includes solutions for supply chain planning, supply chain execution and procurement. We focus primarily on supply chain and retail planning processes and certain execution functions, which we estimate account for approximately one-third of the Supply Chain Management software market as defined by Gartner. Our platform includes more than thirty components spanning eight key supply chain planning processes that customers may adopt independently or as a comprehensive solution platform. We believe our opportunity to cross-sell and up-sell existing customers is significant given the potential for customers to adopt additional components over time.

Our supply chain optimization and retail planning functions involve the use of information and analysis to facilitate the on-time delivery of the right products to the right place at the right time and at the optimal total cost. The planning process includes demand forecasting and sensing, inventory and supply optimization, distribution, manufacturing planning and scheduling, sales and operations planning, retail financial planning, assortment and allocation, PLM, global sourcing and vendor compliance. Planning software is designed to increase revenues, improve forecast accuracy, optimize manufacturing scheduling, better leverage inventory investments, decrease order cycle times, reduce transportation costs and improve customer service. Customers are increasingly adopting planning, sourcing and optimization software that is implemented and accessed in the cloud, also referred to as SaaS.

Our supply chain execution functions address sourcing, manufacturing, distributing and delivering products to customers throughout the global network. Within the supply chain execution function, organizations are increasing their focus on vendor compliance and sourcing linked with supply chain planning and other enterprise applications, in order to increase the efficient and effective fulfillment of customer orders in both the business-to-business and the business-to-consumer sectors. These multi-enterprise supply chains have heightened the need for robust supply chain master data management ("MDM") to provide an accurate digital twin of the supply chain network, allowing enterprises to quickly plan strategically and accurately respond to dynamic market conditions to harness business opportunities and mitigate risk.

In order to effectively manage and coordinate supply chain activities, companies require integrated business planning S&OP, supply chain planning, allocation, sourcing, supply chain execution, and supply chain analytics software that enables integrated communication, optimization and collaboration among the various constituents throughout the supply chain network. Our advanced cognitive platform helps ensure that each stakeholder is aligned with the corporate strategy to minimize costs, increase service levels and deliver exceptional customer service.

Company Strategy

Our objective is to become a leading provider of collaborative supply chain optimization, advanced retail planning and supply chain management solutions to enable small, midsize, large and Fortune 500 companies to optimize their operations associated with the planning, sourcing, manufacturing, storage, distribution and allocation of products. Our strategy includes the following key elements:

Leverage Cloud Strategy. Our cloud computing initiative accelerates customers' deployment of our industry leading supply chain, advanced retail planning, PLM, product sourcing and vendor compliance solutions. Our cloud strategy includes SaaS licensing and services designed to enable the optimization of our customers' supply chains to reflect their global business needs.

Leverage and Expand Installed Base of Customers. We currently target businesses in the consumer goods, food and beverage, retail, apparel and softgoods, durable and hard lines, life sciences, chemicals, and wholesale distribution industries. We intend to continue to leverage our installed base of approximately 1,100 customers to introduce additional functionality, product upgrades, and complementary components. In addition, we intend to expand sales to new customers in our existing vertical markets and to target additional vertical markets over time. We will continue our focus on offering a best-in-class cloud solution and expect the growth trends we have experienced in this area to continue because many new and existing customers are pursuing cloud strategies for their business applications.

Continue to Expand Sales and Marketing. We intend to continue to pursue an increased share of the market for supply chain software solutions by expanding our sales and marketing activities. We believe our competitive advantages include providing rapid implementation, easy-to-maintain configuration, and quick time-to-benefit across the full spectrum of customer operations. We intend to continue building a direct sales force that is focused on selected vertical markets, such as consumer goods, retail, life sciences, wholesale distribution and manufacturing supply chains. NGC intends to continue to focus on the fashion product industries such as apparel, footwear, sewn products, and furniture, adding sales and marketing resources when appropriate.

Expand Indirect Channels to Increase Market Penetration. We believe that key relationships with value-added resellers ("VARs") will increase sales and expand market penetration of our products and services. DMI will leverage network of global

VARs to reach its markets. This experienced global VARs distribution network significantly expands the Company's reach and provides sales, implementation and support resources serving customers around the world.

Maintain Technology Leadership. We believe we are a technology leader in collaborative supply chain optimization solutions and advanced business analytics and we intend to continue to provide innovative, advanced solutions and services. We believe we were one of the earliest providers of SCM software solutions on a client/server platform and on Windows, and the first to introduce a collaborative supply chain planning solution to support multi-enterprise supply chain network planning over the Internet. We intend to continue to keep pace with technological developments and emerging industry standards while developing and introducing new and enhanced products.

Invest Aggressively to Build Market Share. We intend to continue investing to expand our sales channels, research and development efforts, and consulting infrastructure, balanced with our goal of increasing profitability. We believe these investments are necessary to increase our market share and to capitalize on the growth opportunities in the market.

Acquire or Invest in Complementary Businesses, Products and Technologies. We believe that select acquisitions or investments may provide opportunities to broaden our product offering to provide more advanced solutions for our target markets. We will evaluate acquisitions or investments that will provide us with complementary products and technologies, expand our geographic presence and distribution channels, penetrate additional vertical markets with challenges and requirements similar to those we currently meet, and further solidify our leadership position within the SCM market. In fiscal 2015, we acquired MID Retail, Inc., to extend our reach into retail operations and expand our ability to help customers improve their omni-channel performance. In fiscal 2017, we acquired AdapChain to provide supply chain MDM and streamlined integration between our portfolio of planning and optimization solutions to third party software applications. In fiscal 2018, we acquired certain assets of privately held Innovare Holding Co., Incorporated and its subsidiaries (collectively, "Halo"). Halo is a supplier of advanced analytics and business intelligence solutions for the supply chain market. These enriched analytics leverage interactive visualization, machine learning algorithms, and AI to transform both structured and unstructured data to accelerate business planning performance and proactively identify new business opportunities or mitigate risks.

Focus on Integrated Supply Chain Planning and Supply Chain Execution Platform. We believe we are one of the few providers of truly innovative SCM platform solutions addressing demand, supply and advanced retail planning as well as quality and compliance, PLM and sourcing management. We intend to continue focusing our development initiatives on enhancing our product concept to customer availability platform, expanding its embedded performance management architecture and introducing additional capabilities that complement our integrated solution suite.

Increase Penetration of International Markets. In the fiscal year ended April 30, 2019, we generated 20% of our total revenues from international sales, resulting from marketing relationships with a number of international distributors. Logility and its subsidiary DMI have over 30 VARs in its indirect channel, most of which are international. This experienced global distribution network expands Logility's reach and provides sales, implementation and support resources, serving customers in more than 80 countries. We intend to further expand our international presence by creating additional relationships with distributors in Africa, Asia, Australia, Europe, North America and South America.

Expand Strategic Relationships. We intend to develop strategic relationships with leading enterprise software and service providers and systems integrators to integrate our software solutions into their services and products and to create joint marketing opportunities. We have developed a network of international agents who assist in the sale and support of our solution platform. We intend to utilize these and future relationships with software and service organizations to enhance our sales and marketing position.

Continue to Focus on Providing High Quality Customer Service. Helping our customers become more successful our strategy. We intend to continue investing in technology and personnel to accommodate the needs of our growing customer base. We will continue to seek new ways to improve service to our customers.

Serve Large, Midsized and Small Business Markets. Our broad product portfolio allows us to address the unique business needs and complexity of a wide range of enterprises with large, midsized and small global operations.

There can be no assurance, however, that we will be successful in implementing the strategies outlined above.

Products and Services

We provide a comprehensive, cloud-architected supply chain management platform that helps customers manage eight critical planning processes, including demand optimization, inventory optimization, supply optimization, retail optimization, quality and compliance, PLM, sourcing management and integrated business planning. Within each of these process areas, we offer one or more components that customers may leverage independently, in combination, or as a comprehensive solution platform either in the cloud or on-premise. Our supply chain MDM platform and advanced analytics capabilities enable customers to derive new insights and automate planning processes that continuously analyze demand, production, supply and distribution signals to inform product design and development, increase forecast accuracy, optimize inventory across the global supply chain and in-store, and ensure high customer satisfaction.

Our platform encompasses the following planning processes and associated components:

Advanced Analytics leverage artificial intelligence, machine learning, algorithmic optimization, simulations, scenarios, and other forms of advanced analytics to provide new insights, automate planning and remove time, inventory and risk from the supply chain.

Integrated Business Planning combines volumetric and financial analysis and collaborative workflow to streamline the entire sales and operations planning process and provide a guide for allocating business resources to meet revenue, profitability, and customer service goals.

- *Integrated Business Planning* visualizes, elevates and optimizes strategic and tactical plans for products, channels, resources and investment to achieve business goals, drive shareholder value and increase operational efficiencies.
- *Sales and Operations Planning* aligns financial, sales, production, procurement and marketing information into a single plan rooted in supply chain reality. Strategic, tactical and operational plans can be produced via a single platform.

Demand Optimization focuses on improving forecast accuracy to drive better downstream supply chain plans that boost profitability, satisfy customers and synchronize supply chain partners.

- *Demand Sensing* evaluates multiple data streams to recognize complex patterns and identify actionable demand signals. It captures and analyzes demand signals from internal and external sources, including point of sale, demand signal repositories, and syndicated data, to identify near-term demand trends and enable fast, intelligent and cost effective market responses.
- *Demand Planning* helps reconcile differences between high-level business planning and detailed product forecasting. Aligning inventory with customer demand, this solution makes it easier to boost service levels, shorten cycle times and reduce inventory obsolescence.
- *Life Cycle Planning* provides control to model each phase over a product's entire lifecycle-including introduction, maturity, replacement, substitution and retirement. Using attribute-based modeling, this solution can improve the accuracy of new product introductions, short life cycle and phase-outs, which result in reduced stock-outs and lower obsolescence costs.
- *Proportion Profile Planning* automates the process of detailed SKU-level forecasting using attributes like style, color and size for large numbers of SKUs. Time-phased profiles meet the market goals for product categories while increasing forecast accuracy at the granular level.
- *Multivariable Demand Signal Management ("MDSM")* artificial intelligence ("AI") to correlate multiple external factors (i.e. weather, market trend, commodity prices, etc.) to enhance the demand forecast.

Inventory Optimization establishes optimal inventory targets at each node of multi-echelon manufacturing, distribution, and retail networks to match strategic inventory goals and service levels.

- *Inventory Optimization* optimizes strategic and tactical inventory investments across multi-echelon manufacturing, distribution, and retail networks to meet business and service level objectives for complex supply chains with multiple stages of inventory.

- *Inventory Planning* allows enterprises to effectively measure the tradeoff of finished goods inventory investments and desired customer service levels. This solution dynamically sets time-phased inventory targets based on specific safety stock and order quantity rules.

Supply Optimization enables constraint-based continuous and periodic planning to identify orders that are unprofitable or cannot be met based on current constraints and to analyze the impact of changing factors in production, distribution and storage on costs and customer service.

- *Supply Planning* optimizes complex sourcing and production decisions to balance supply, manufacturing and distribution constraints based on corporate goals for maximizing profit or minimizing costs.
- *Replenishment Planning* provides visibility into future customer demand, corresponding product and material requirements, and the actions needed to satisfy those demands.
- *Manufacturing Planning and Scheduling* optimizes constraint-based manufacturing schedules and evaluates multiple scenarios to determine the optimal trade-off between manufacturing efficiencies, inventory investments and greenhouse gas emissions, providing lower costs and increased product availability. These optimized schedules consider machine, personnel, tooling and inventory constraints to drive shorter lead times and reliable product availability.

Retail Optimization synchronizes sourcing from manufacturing to store merchandising and supports the creation of plans to boost sales, increase margins and cut inventory costs.

- *Merchandise and Assortment Planning* creates financial merchandise plans for total company and individual store locations to increase visibility and maintain “open to buy” plans, margin planning and unit ladder plans at various levels in the merchandise hierarchy. Innovative Inspiration Board features provide a Pinterest-like workspace where traditional text-based assortment plans become vibrant visual representations of collections merging the art and science of buyer and planner roles to gain greater visibility throughout the planning process and ensure each store location is able to meet its plan.
- *Allocation* optimizes short term unit sales and stock projections by store and facilitates automatic replenishment based on daily sales data. Capabilities also include pre-pack optimization to accelerate the receipt and shipment of inventory to specific store locations.

Quality & Compliance allows quality problems to be identified and remediated faster and ensures proper documentation for each participant in the supply chain to prevent disruptions in moving products around the globe.

- *Quality Management & Audits* identifies quality problems faster to reduce chargebacks and rework; enables inspections and audits to be performed at the manufacturing facilities via tablets; requests in-line, final, measurement and packing accuracy audits during the production process and provides notification if audits fail; and aids in the analysis of sourcing and factory improvement decisions.
- *Regulatory Document Management* reduces the risk of non-compliance and avoids costly litigation by enforcing control and accountability for all suppliers, vendors and other third parties involved in the design, manufacturing and delivery of products.
- *Global Logistics Management* creates barcode carton labels, inbound paperwork and ASNs via the web browser; produces a manifest, commercial invoice, bill of lading and packing list once barcoded cartons are placed on a shipment; and tracks each shipment while providing notification of any delays as they occur.

Product Lifecycle Management provides a common platform for planning, merchandising, design, costing, sampling, quality and sourcing, ensuring complete visibility from product concept to delivery.

- *Line Plans* provide the roadmap for development and specify SKU (stock keeping unit) counts by division, category and product, and are used to manage seasons, departments, collections and even specific styles to meet performance targets.
- *Tech Packs & Data Management* replace spreadsheets and emails with a single source of product data; manage images, extended attributes and media copy for all distribution channels; and share product information with other systems.

- *Product Design* leverages trend and competitive analysis when defining the direction of products and materials, supports the design and management of product concepts, ensures requirements and cost targets are met and enables product developers to efficiently develop and re-use designs, materials and product specification data.
- *Costing* allows for collaborative decision making with vendors to break down costs and compare by line item to optimize price points and margins, creates multiple cost sheets per product and performs “what-if” scenarios to determine which items achieve financial targets.
- *Sample Management* reduces sampling costs by establishing product viability prior to issuing sample requests, tracks the status and enters the results of requested samples and automatically notifies responsible parties of any rejections. Additional sample requests with corrections may also be created.

Sourcing Management gathers all of the requisite information in one place to make optimal sourcing decisions, protecting brand equity and reducing risk while increasing speed to market of products.

- *Strategic Sourcing* identifies and compares global suppliers, issues request for quotes and evaluates quotes from each participant. Vendors are notified of new requests and have complete visibility into the quoting, sampling and final selection process.
- *Supply Base Management* evaluates, manages, and reports on various factors including social and regulatory compliance, manufacturing capabilities and capacity to simplify the complexities of vendor management into one centralized system.
- *Supply Profiles and Score Cards* creates comprehensive, searchable vendor profiles and utilizes digital asset management technology to store and share pictures, videos and other digital media files.
- *Vendor Onboarding* optimizes the onboarding process to help organize, vet and manage vendors and factories to ensure overall compliance and mitigate risks; tracks performance; and creates, issues and manages corrective action plans if applicable.
- *CSR and GMP Audits* manage the complexities of Corporate Social Responsibility ("CSR") and ensure products are consistently produced to the quality standards through Good Manufacturing Practices ("GMP") audits.
- *Compliance Packets* maintain critical vendor information for transparency, accountability, responsible sourcing and worker non-retaliation. This solution also stores and manages all signed compliance documents and makes them accessible throughout the supply chain.

Supply Chain Master Data Management provides seamless integration with third-party ERP systems, big data and other IoT sources without the cost and effort associated with custom development.

- *AdapLink®* delivers tailored supply chain and enterprise integration leveraging predefined templates and incorporating artificial intelligence to validate and harmonize planning and related supply chain MDM and transactional data with ERP systems from suppliers such as SAP, Oracle, Microsoft and Infor.

We also provide a range of cloud services, technical support and professional services to support the adoption, implementation and optimization of our supply chain management platform by customers. Our platform may be deployed as SaaS, as a hosted solution or on-premise. Professional services include consulting, implementation, training and other managed services related to our platform.

Through our wholly-owned subsidiary, The Proven Method, Inc., we provide technology staffing and services to a diverse customer base to solve business issues. These services include professional services, product management, and project management outsourcing; staff augmentation in the areas of cloud, collaboration, network and security; and social media and analytic marketing.

We also continue to provide software, support and services related to our legacy American Software ERP products, which include our *e-Intelliprise solution* and *e-applications* for various integrated business functions.

See Note 9 to the Consolidated Financial Statements for further business segment information.

Customers

We primarily target businesses in the retail, apparel and footwear, consumer packaged goods, chemicals, oil and gas, life sciences, telecommunications, consumer electronics, industrial products and other manufacturing industries. A sample of companies that have purchased one or more of our products or services during the past two fiscal years is as follows:

<u>Consumer Goods</u>	<u>Chemicals, Oil & Gas, Life Sciences</u>	<u>Retail & Apparel (cont.)</u>	<u>Manufacturing and Others (cont.)</u>
3M Australia	Allnex	International Uniform, Inc.	Gardner-White Furniture
Antartico Comercializadora SA de CV	BERICAP Holding GMBH	Jantzen Brands Corp.	Groupo Herdez
Ashley Furniture	Berry Global	Jockey International	Henley Enterprises, Inc.
Avery Dennison Corporation	BP Singapore Pte. Limited	La La Land Creative Company LLC	Hilco
BodyBuilding.com	Bracco Imaging S.p.A.	Lacrosse Footwear	Husqvarna AB
Caribou Coffee Company	Chamberlain Group	Landau Uniform	Hy-Ko Products
Carrie Francis	CooperVision	Liz Claiborne	Interlock USA, Inc.
ClearGage, LLC	Croda Europe Limited	Lord Daniel Sportswear	Intertape Polymer Group
Cott Beverages Limited	Dow Chemical Company	Lucky Zone	Johnson Controls
Dometic Group AB	EGO Pharmaceuticals, PTY LTD	Manhattan Beachwear, LLC	KALE HAVACILIK Sanayi AS
Ergobaby	Genzyme Diagnostics	Men's Wearhouse	M&G DuraVent
Founders Brewing Company	Infineum	New Era Cap Co., Inc.	Mayville Engineering Company, Inc
Freddy Hirsch	Kremers Urban Pharmaceuticals	Orchard Brands	Nexans
Glen Raven, Inc.	Norbrook Laboratories	Orvis	Niagara Bottling
Griffith Laboratories Worldwide	Norgine	Patagonia	Nuplex Industries
Hamilton Beach	Novartis Pharma Services	PVH Corp.	OFS Fitel, LLC
Hancocks Wine, Spirits and Beer	Omega Pharma International NV	Quality Worldwide	ORBIS Corporation
Hostess Brands	OneMed Holdings	Randa Accessories	Parker Hannifin Corporation
Huhtamaki	Sandoz	Rawlings Sporting Goods	Pattonair Ltd.
J. R. Simplot Company	Sigma-Aldrich Corporation	Red Wing Shoe Company	Quality Steel Corporation
Jackson Family Wines	Smith & Nephew	Rhone Apparel, Inc	Reliable Automatic Sprinkler
Kelly Moore Paint Company, Inc	Sunovion Pharmaceuticals, Inc.	Rocky Brands	Sandvik
Kingston Technology Company	Thermo Fisher Scientific	Siemens Medical Solutions Diagnostics	Smithfield Foods
Le Creuset Group AG		SPANX	Sonoco Products
Levolor	<u>Retail & Apparel</u>	Sport Obermeyer	Southwire
Marquez Brothers International	5.11 Tactical	Summit Resource International	TD Automotive Compressor Georgia
Melissa and Doug	Accent Décor	Swatfame	Tillamook
Mercy Health Care	Aeropostale	Techstyle	Timken
MGA Entertainment	AGS Sports, Inc.	The Aldo Group	Universal Fiber Systems
Mizuno USA	Alberto Makali	The Echo Design Group	Walzcraft
Moen	American Textile	The Foschini Group Pty	
Mondelez International	Asics	Town & Country Living	<u>Telecommunications</u>
Neatfreak	Bernard Cap Co., Inc.	Unifirst Corp	Brightstar Corporation
Nestle	Big Lots!	Urban Outfitters	Ericsson
Online Drinks B.V.	Billabong International Unlimited	VF Corporation	Nokia
Polaris Industries	Biscotti	Winebow Inc.	Verizon Wireless
Procter & Gamble	Blair Corporation	Wohali Outdoors	
Ranir, LLC	Bobs Discount Furniture	Wolverine Worldwide	<u>Wholesale Distribution</u>
Reckitt Benckisen	Broder Brothers	Xcel Brands	American Hotel Register Company
Reily Foods	Brooks Brothers Group, Inc.		Balkamp, Inc.
Rockline Industries	C&A Mexico	<u>Manufacturing and Others</u>	ChemPoint
Sargent and Greenleaf, Inc.	Canada Goose	A.O. Smith	CHF Industries
Sazerac Company	Charles River Apparel	Actron Air	Dealer Tire
Starbucks	Color Image Apparel, Inc.	Amcors Rigid Plastics USA, LLC	Fastenal Company
Sunny Delight Beverages Company	Delta Apparel	American Bath Group	Fintyre S.p.A.
SweetWater Brewing Company, LLC	Destination XL	Ancestry.com Inc.	Groupe Seb Holdings
Taylor Fresh Foods	Dynasty Apparel	Avent, Inc	Johnstone Supply
Tillamook County Creamery Association	Elan International	Briggs & Stratton	Screwfix
Trident Seafoods Corporation	Evy of California	Busch-Transou, L.C.	Southern Eagle Distributing, LLC
Weber-Stephen (EMEA) GmbH	Fanatics Apparel, Inc.	Cintas Corporation	Standard Motor Products
	Finish Line	Clarios	The Gem Group, Inc.
	Follett Corporation	Cycles Lambert, Inc.	Trelleborg Wheel Systems
	Hunkemoller International BV	Ficosota Ltd., Ital Food S.A.	US Autoforce

We do not have a customer who had more than 10% of fiscal 2019 revenues. We typically experience a slight degree of seasonality, reflected in a slowing of services revenues during the annual winter holiday season, which occurs in the third quarter of our fiscal year. We are not reliant on government-sector customers.

Integrated System Design

While customers can use our software applications individually, we have designed them to be combined as integrated systems to meet unique customer requirements. The user may select virtually any combination of components to form an integrated solution for a particular business problem. The license or subscription for such a solution could range from one single module to a multi-module, multiple-user solution incorporating the full range of our products.

Customers frequently require services beyond those provided by our standard support/maintenance agreement. To meet those customers' needs, we established a separate professional services team that provides specialized business and software implementation consulting, development and configuration, system-to-system interfacing and extensive training and certification. We provide these services, frequently referred to as "systems integration services," for an additional fee, normally under a separate contract based upon time and materials utilized.

Sales and Marketing

We market our products globally through direct and indirect sales channels. We conduct our principal sales and marketing activities from corporate headquarters in Atlanta, Georgia, and have North American sales and/or support offices in Boston, Chicago, Dallas, Indianapolis, New York, St. Louis, Miami, Pittsburgh and San Diego. We manage sales and/or support outside of North America from our international offices in the United Kingdom, Sweden, Germany, The Netherlands, India, New Zealand and Australia.

In addition to our direct sales force, we have developed a network of VARs who assist in selling our products globally. We intend to utilize these and future relationships with software and service organizations to enhance our sales and marketing position. These independent distributors and resellers, located in North America, South America, Mexico, Europe, South Africa, and the Asia/Pacific region, distribute our product lines domestically and in foreign countries. These vendors typically sell their own consulting and systems integration services in conjunction with contracts for our products. Our global distribution channel consists of approximately 30 organizations with sales, implementation and support resources serving customers in more than 80 countries.

We support our sales activities with a variety of marketing efforts, including public relations, direct marketing, advertising, trade shows, product seminars, industry speakers, user group conferences and ongoing customer communication and industry analyst programs. We also participate in industry conferences such as those organized by the Association for Supply Chain Management, the Council of Supply Chain Management Professionals, and the Institute Business Forecasting.

We also engage in third-party alliances with other software vendors. These programs generally provide some type of assistance for developing or marketing software products that are compatible or complementary with products of the other party. Under one such program, we were designated a Microsoft Gold Certified Partner to provide integrated supply chain products for Microsoft's Dynamics GP and NAV solutions.

Subscriptions and Licenses

Like many business application software firms, our software revenue consists principally of fees generated from licensing our software products. In consideration of the payment of license fees, we typically grant non-exclusive, nontransferable, perpetual licenses, which are primarily business segment- and user-specific and geographically restricted. A growing segment of product revenue is coming from SaaS subscription contracts. Our typical initial subscription is three years.

Our standard agreements contain provisions designed to prevent disclosure and unauthorized use of our software. In these agreements, we warrant that our products will function in accordance with the specifications set forth in our product documentation.

The prices for our products are typically functions of the depth of functionality, number of business processes, users and sites for which the solution is deployed.

Customer Service and Support

We provide the following services and support to our customers:

Cloud and Managed Services. We offer our customers the option to deploy Voyager, Demand Solutions and NGC Software solutions in a SaaS, hosted or on-premise model. Our Cloud Services offer companies a choice of deployment methodology and services that best suit their individual needs and allow them to evolve as their business changes, moving between SaaS, on-premise, and managed services as their IT strategies transform. Managed Services leverage our resources to assist and augment the customer's technical and operational needs on a day-to-day basis.

Implementation Support. We offer our customers a professional and proven implementation program that facilitates rapid implementation of our software products. Our consultants help customers define the nature of their project and subsequently proceed through the implementation process. We provide training for all users and managers involved. We first establish measurable financial and logistical performance indicators and then evaluate them for conformance during and after implementation. Additional services beyond implementation may include post-implementation reviews and benchmarks to further enhance the benefits to customers.

Implementation; General Training Services and Certification. We offer our customers post-delivery professional services consisting primarily of implementation and training services, for which we typically charge on a daily basis. Customers that invest in implementation services receive assistance in integrating our solution with existing enterprise software applications and databases. Implementation of our products typically requires three to nine months, depending on factors such as the complexity of a customer's existing systems, the breadth of functionality, number of business units and team of users. Additional training and user certification services also help our customers gain greater advantage from our robust planning platform.

Product Maintenance and Updates; Support Services. We provide our customers with ongoing product support services. Typically, these services are included in subscription fees, whereas for licenses we enter into support or maintenance contracts with customers for an initial one- to three-year term, billed annually in advance, at the time of the product license with renewal for additional periods thereafter. Under these contracts, we provide telephone consulting, product updates and releases of new versions of products previously purchased by the customer, as well as error reporting and correction services. We provide ongoing support and maintenance services on a seven-days-a-week, 24-hours-a-day basis through telephone, electronic mail and web-based support, using a call logging and tracking system for quality assurance.

Research and Development

Our future success depends in part upon our ability to continue to enhance existing products, respond to changing customer requirements, develop and introduce new or enhanced products, and keep pace with technological developments and emerging industry standards. We focus our development efforts on several areas, including, but not limited to, enhancing artificial intelligence, machine learning and advance analytics platforms, in-memory computing, and adding functionality to existing products. These development efforts will continue to focus on deploying applications within a complex global supply chain landscape. Our cloud-architected solutions designed for SaaS deployment with MDM built in will be increasingly important for our long-term growth. As of April 30, 2019, we employed 101 persons in product research, development and enhancement activities.

Competition

Our competitors are diverse and offer a variety of solutions targeted at various aspects of the supply chain, retail and general enterprise application market. Our existing competitors include, but are not limited to:

- Large ERP application software vendors such as SAP, Oracle and Infor, each of which offers sophisticated ERP solutions that currently, or may in the future, incorporate supply chain management, advanced planning and scheduling, warehouse management, transportation, collaboration or sales and operations planning software components;
- Vendors focusing on the supply chain application software market, including, but not limited to, JDA Software, Kinaxis and Anaplan;
- Other business application software vendors that may broaden their product offerings by internally developing, or by acquiring or partnering with independent developers of, supply chain management software; and
- Internal development efforts by corporate information technology departments.

We also expect to face additional competition as other established and emerging companies enter the market for advanced retail planning and supply chain management software and/or introduce new products and technologies. In addition, current and potential competitors have made and may continue to make strategic acquisitions or establish cooperative relationships among themselves or with third parties, thereby increasing the ability of their products to address the needs of our prospective customers. Accordingly, it is possible that new competitors or alliances among current and new competitors may emerge and rapidly gain significant market share. Increased competition could result in fewer customer orders, reduced gross margins and loss of market share.

The principal competitive factors in the target markets in which we compete include product functionality and quality, domain expertise, integration technologies, product suite integration, breadth of products, and related services such as customer support, training and implementation. Other factors important to customers and prospects include:

- customer service and satisfaction;

- ability to provide relevant customer references;
- compliance with industry-specific requirements and standards;
- flexibility to adapt to changing business requirements;
- ability to generate business benefits;
- rapid payback and measurable return on investment;
- vendor financial stability and company and product reputation; and
- initial license price, cost to implement and long term total cost of ownership.

Many of our competitors and potential competitors have a broader worldwide presence, significantly greater financial, technical, marketing and other resources, greater name recognition, and a larger installed base of customers than we have. Some competitors have become more aggressive with their prices, payment terms and contractual implementation terms or guarantees. In order to be successful in the future, we must continue to develop innovative software solutions and respond promptly and effectively to technological change and competitors' innovations. We may also have to lower prices or offer other more favorable terms. Our competitors may be able to respond more quickly to new or emerging technologies and changes in customer requirements or devote greater resources to the development, promotion and sale of their products.

We believe that our principal competitive advantages are our comprehensive, single solutions platform, our list of referenceable customers, the ability of our solutions to quickly generate business benefits for our customers, our substantial investment in product development, our deep domain expertise, the ease of use of our software products, our customer support and implementation services, our ability to deploy quickly, and our ability to deliver rapid return on investment for our customers.

Proprietary Rights and Licenses

Our success and ability to compete are dependent in part upon our proprietary technology. To protect our proprietary technology, we rely on a combination of copyright and trade secret laws, confidentiality procedures and contractual provisions. However, these may afford only limited protection. In addition, effective copyright and trade secret protection may be unavailable or limited in certain foreign countries. Although we take advantage of the protection available through such confidential and contractual procedures and intellectual property laws, we also believe that factors such as the knowledge, ability, and experience of our personnel, new product developments, frequent product enhancements, reliable maintenance and timeliness and quality of support services are essential to establishing and maintaining a technology leadership position. The source code for our proprietary software is protected as a trade secret and as a copyrighted work. Generally, copyrights expire 95 years after the year of first publication of each product. We enter into confidentiality or similar agreements with our employees, consultants and customers, and control access to and distribution of our software, documentation and other proprietary information and deliver only object code (compiled source code) to our customers. In addition, we have registered a number of trademarks and have registration applications pending for others.

As is customary in the software industry, in order to protect our intellectual property rights, we do not sell or transfer title to our products to our customers. Although our license and subscription agreements place restrictions on the customer's use of our products, unauthorized use nevertheless may occur.

Despite measures we have taken to protect our proprietary rights, unauthorized parties may attempt to reverse engineer or copy aspects of our products or obtain and use information that we regard as proprietary. Policing unauthorized use of our products is difficult and expensive. In addition, litigation may be necessary in the future to enforce our intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement or invalidity. Such litigation could result in substantial costs and diversion of resources and could have a material adverse effect on our business, operating results and financial condition.

In the future, we may increasingly be subject to claims of intellectual property infringement as the number of products and competitors in our industry segment grows and the functionality of products in different industry segments overlaps. Although we are not aware that any of our products infringe upon the proprietary rights of third parties, there can be no assurance that third parties will not claim infringement by us with respect to current or future products. In addition, we may initiate claims or litigation against third parties for infringement of our proprietary rights or to establish the validity of our proprietary rights. Any such claims against us, with or without merit, as well as claims initiated by us against third parties, can be time consuming and expensive to defend, prosecute or resolve. Moreover, an adverse outcome in litigation or similar adversarial proceedings could subject us to significant liabilities to third parties, require the expenditure of significant resources to develop non-infringing technology, require

a substantial amount of attention from management, require disputed rights to be licensed from others, require us to enter into royalty arrangements or require us to cease the marketing or use of certain products, any of which would have a material adverse effect on our business, operating results and financial condition. To the extent that we desire or are required to obtain licenses to patents or proprietary rights of others, there can be no assurance that any such licenses will be made available on terms acceptable to us, if at all.

We have re-licensed, and expect in the future to re-license, certain software from third parties for use in connection with our products. There can be no assurance that these third-party software vendors will not change their product offerings or that these software licenses will continue to be available to us on commercially reasonable terms, if at all. The termination of any such licenses or product offerings, or the failure of the third-party licensors to adequately maintain or update their products, could result in delays in our ability to deliver certain of our products while we seek to implement technology offered by alternative sources. Any required replacement licenses could prove costly. Further, any such delay, if it becomes extended, could result in a material adverse effect on our results of operations.

Employees

As of April 30, 2019, we had 424 full-time employees, including 101 in product research, development and enhancement, 38 in customer support, 158 in professional services, 81 in marketing, sales and sales support, and 46 in accounting, facilities and administration. We believe that our continued success will depend in part on our ability to continue to attract and retain highly skilled technical, marketing and management personnel, who may be in great demand. We believe our employee relations are good. We have never had a work stoppage and no employees are represented under collective bargaining arrangements.

Available Information

We make our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to these reports available free of charge on or through our website, located at <http://www.amssoftware.com>, as soon as reasonably practicable after they are filed with or furnished to the Securities and Exchange Commission ("SEC"). Reference to our website does not constitute incorporation by reference of the information contained on the site and should not be considered part of this document.

ITEM 1A. RISK FACTORS

A variety of factors may affect our future results and the market price of our stock.

We have included certain forward-looking statements in Management's Discussion and Analysis of Financial Condition and Results of Operations and elsewhere in this Form 10-K. We may also make oral and written forward-looking statements from time to time, in reports filed with the SEC and otherwise. We undertake no obligation to revise or publicly release the results of any revisions to these forward-looking statements based on circumstances or events which occur in the future, unless otherwise required by law. Actual results may differ materially from those projected in any such forward-looking statements due to a number of factors, including those set forth below and elsewhere in this Form 10-K.

We operate in a dynamic and rapidly changing environment that involves numerous risks and uncertainties. New risk factors emerge from time-to-time, and it is not possible for management to predict all such risk factors, nor can it assess the potential impact of all such risk factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those in any forward-looking statements. The following section lists some, but not all, of the risks and uncertainties that we believe may have a material adverse effect on our business, financial condition, cash flow or results of operations. In that case, the trading price of our securities could decline and you may lose all or part of your investment in our Company. This section should be read in conjunction with the audited Consolidated Financial Statements and Notes thereto, and Management's Discussion and Analysis of Financial Condition and Results of Operations included in this Form 10-K.

We cannot predict every event and circumstance that may affect our business, and therefore the risks and uncertainties discussed below may not be the only ones you should consider.

The risks and uncertainties discussed below are in addition to those that apply to most businesses generally. Furthermore, as we continue to operate our business, we may encounter risks of which we are not aware at this time. These additional risks may cause serious damage to our business in the future, the impact of which we cannot estimate at this time.

RISK FACTORS RELATED TO THE ECONOMY

Disruptions in the financial and credit markets, a slow economic recovery, and other external influences in the U.S. and global markets may reduce demand for our software and related services, which may negatively affect our revenues and operating results.

Our revenues and profitability depend on the overall demand for our software, professional services and maintenance services. Regional and global changes in the economy and financial markets, such as the severe global economic downturn in 2008 followed by a slow and relatively weak recovery, have resulted in companies generally reducing their spending for technology projects and therefore delaying or reconsidering potential purchases of our products and related services. Adverse conditions in credit markets, lagging consumer confidence and spending, the fluctuating cost of fuel and commodities and their effects on the U.S. and global economies and markets are examples of negative factors that have delayed or canceled certain potential customer purchases. Furthermore, the uncertainty posed by the long-term effects of conflicts in the Middle East, terrorist activities, related uncertainties and risks, and other geopolitical issues may also adversely affect the purchasing decisions of current or potential customers. Weakness in European economies may adversely affect demand for our products and services, both directly and by affecting U.S. customers that rely heavily on European sales. There can be no assurance that government responses to the disruptions in the financial markets or to weakened economies will sufficiently restore confidence, stabilize markets or increase liquidity and the availability of credit.

We are a technology company selling technology-based solutions with total pricing, including software and services, in many cases exceeding \$500,000. Reductions in the capital budgets of our customers and prospective customers could have an adverse impact on our ability to sell our solutions. These economic and political conditions may reduce the willingness or ability of our customers and prospective customers to commit funds to purchase our products and services, or to renew existing post-contract support agreements, or their ability to pay for our products and services after purchase. Future declines in demand for our products or services, or a broadening or protracted extension of these conditions would have a significant negative impact on our revenues and operating results.

There may be an increase in customer bankruptcies due to weak economic conditions.

We have been in the past, and may be in the future, affected by customer bankruptcies that occur in periods subsequent to the software license sale. During weak economic conditions there is an increased risk that some of our customers will file a petition for bankruptcy. When our customers file a petition for bankruptcy, we may be required to forego collection of pre-petition amounts owed and to repay amounts remitted to us during the 90-day preference period preceding the filing. Accounts receivable balances related to pre-petition amounts may in some of these instances be large, due to extended payment terms for software license fees and significant billings for consulting and implementation services on large projects. The bankruptcy laws, as well as the specific circumstances of each bankruptcy, may severely limit our ability to collect pre-petition amounts, and may force us to disgorge payments made during the 90-day preference period. We also face risk from international customers that file for bankruptcy protection in foreign jurisdictions, as the application of foreign bankruptcy laws may be more difficult to predict. Although we believe that we have sufficient reserves to cover anticipated customer bankruptcies, there can be no assurance that such reserves will be adequate, and if they are not adequate, our business, operating results and financial condition would be adversely affected.

Changes in the value of the U.S. dollar, as compared to the currencies of foreign countries where we transact business, could harm our operating results.

Our international revenues and the majority of our international expenses, including the wages of some of our employees, have been denominated primarily in currencies other than the U.S. dollar. Therefore, changes in the value of the U.S. dollar as compared to these other currencies may adversely affect our operating results. We do not hedge our exposure to currency fluctuations affecting future international revenues and expenses and other commitments. For the foregoing reasons, currency exchange rate fluctuations have caused, and likely will continue to cause, variability in our foreign currency denominated revenue streams and our cost to settle foreign currency denominated liabilities.

RISK FACTORS RELATED TO COMPETITION

Our markets are very competitive, and we may not be able to compete effectively.

The markets for our solutions are very competitive. The intensity of competition in our markets has significantly increased, in part as a result of the slow growth in investment in IT software as a result of slow overall GDP growth within the United States and other geographic regions in which we operate. We expect this intensity of competition to increase in the future. Our current and potential competitors have made and may continue to make acquisitions of other competitors and may establish cooperative relationships among themselves or with third parties. Any significant consolidation among ERP or supply chain software companies

could adversely affect our competitive position. Increased competition has resulted and in the future could result in price reductions, lower gross margins, longer sales cycles and loss of market share. Each of these developments could have a material adverse effect on our operating performance and financial condition.

Many of our current and potential competitors have significantly greater resources than we do, and therefore we may be at a disadvantage in competing with them.

We directly compete with other supply chain software vendors, including SAP, Oracle Corporation, JDA Software Group, Kinaxis, Inc., Infor, Inc. and others. Some of our current and potential competitors have significantly greater financial, marketing, technical and other competitive resources than we do, as well as greater name recognition and a larger installed base of clients. The ERP software market has experienced significant consolidation, including numerous mergers and acquisitions. It is difficult to estimate what long-term effect these acquisitions will have on our competitive environment. We have encountered competitive situations where we suspect that large competitors, in order to encourage customers to purchase licenses of non-retail applications and gain retail market share, have also offered to license at no charge certain retail software applications that compete with our solutions. If competitors such as Oracle and SAP AG and other large private companies are willing to license their retail and/or other applications at no charge, this may result in a more difficult competitive environment for our products. In addition, we could face competition from large, multi-industry technology companies that historically have not offered an enterprise solution set to the retail supply chain market. We cannot guarantee that we will be able to compete successfully for customers against our current or future competitors, or that such competition will not have a material adverse effect on our business, operating results and financial condition. Also, some prospective buyers are reluctant to purchase applications that could have a short lifespan, as an acquisition could result in the application's life being abruptly cut short. In addition, increased competition and consolidation in these markets is likely to result in price reductions, reduced operating margins and changes in market share, any one of which could adversely affect us. If customers or prospects want fewer software vendors, they may elect to purchase competing products from a larger vendor than us since those larger vendors offer a wider range of products. Furthermore, some of these larger vendors, such as Oracle, may be able to bundle their software with their database applications, which underlie a significant portion of our installed applications. When we compete with these larger vendors for new customers, we believe that these larger businesses often attempt to use their size as a competitive advantage against us.

Many of our competitors have well-established relationships with our current and potential clients and have extensive knowledge of our industry. As a result, they may be able to adapt more quickly to new or emerging technologies and changes in client requirements or to devote greater resources to the development, promotion and sale of their products than we can. Some competitors have become more aggressive with their prices and payment terms and issuance of contractual implementation terms or guarantees. In addition, third-party service companies may offer competing maintenance and implementation services to our customers and thereby reduce our opportunities to provide those services. We may be unable to continue to compete successfully with new and existing competitors without lowering prices or offering other favorable terms. Furthermore, potential customers may consider outsourcing options, including application service providers, data center outsourcing and service bureaus, as alternatives to licensing our software products. Any of these factors could materially impair our ability to compete and have a material adverse effect on our operating performance and financial condition.

We also face competition from the corporate IT departments of current or potential customers capable of internally developing solutions and we compete with a variety of more specialized software and services vendors, including:

- Internet (on demand) software vendors;
- single-industry software vendors;
- enterprise resource optimization software vendors;
- human resource management software vendors;
- financial management software vendors;
- merchandising software vendors;
- services automation software vendors; and
- outsourced services providers.

As a result, the market for enterprise software applications has been and continues to be intensely competitive. We expect competition to persist and intensify, which could negatively affect our operating results and market share.

Due to competition, we may change our pricing practices, which could adversely affect operating margins or customer ordering patterns.

The intensely competitive markets in which we compete can put pressure on us to reduce our prices. If our competitors offer deep discounts on certain products or services in an effort to recapture or gain market share or to sell other products or services, we may need to lower prices or offer other favorable terms in order to compete successfully. For these and other reasons, in the future we may choose to make changes to our pricing practices. For example, we may (1) offer additional discounts to customers, (2) increase (or decrease) the use of pricing that involves periodic fees based on the number of users of a product, or (3) change maintenance pricing. Such changes could materially and adversely affect our margins, and our revenues may be negatively affected if our competitors are able to recapture or gain market share.

RISK FACTORS RELATED TO OUR OPERATIONS

Our growth is dependent upon the successful further development of our direct and indirect sales channels.

We believe that our future growth will depend on developing and maintaining successful strategic relationships with systems integrators and other technology companies. Our strategy is to continue to increase the proportion of customers served through these indirect channels, so we are currently investing, and plan to continue to invest, significant resources to develop them. This investment could adversely affect our operating results if these efforts do not generate license and service revenue necessary to offset our investment. Also, our inability to partner with other technology companies and qualified systems integrators could adversely affect our results of operations. Because lower unit prices are typically charged on sales made through indirect channels, increased indirect sales could reduce our average selling prices and result in lower gross margins. In addition, sales of our products through indirect channels will likely reduce our consulting service revenues, as third-party systems integrators generally provide these services. As indirect sales increase, our direct contact with our customer base will decrease, and we may have more difficulty accurately forecasting sales, evaluating customer satisfaction and recognizing emerging customer requirements. In addition, these systems integrators and third-party software providers may develop, acquire or market products competitive with our products. Our strategy of marketing our products directly to customers and indirectly through systems integrators and other technology companies may result in distribution channel conflicts. Our direct sales efforts may compete with those of our indirect channels and, to the extent that different systems integrators target the same customers, systems integrators may also come into conflict with each other. Any channel conflicts that develop may have a material adverse effect on our relationships with systems integrators or harm our ability to attract new systems integrators.

We may be required to defer recognition of license revenue for a significant period of time after entering into an agreement, which could negatively affect our results of operations.

We are required to delay recognizing license revenue for a significant period of time based on a variety of factors, including:

- whether the license agreement includes cloud services such as managing the application and hosting the server that are performed over the term of the contract;
- whether the license agreement relates to then-unavailable software products;
- whether transactions include both currently deliverable software products and software products that are under development or other undeliverable elements;
- whether the customer demands services that include significant modifications, customizations or complex interfaces that could delay product delivery or acceptance;
- whether the transaction involves acceptance criteria that may preclude revenue recognition or if there are identified product-related issues, such as known defects; and
- whether the transaction involves payment terms or fees that depend upon contingencies.

These factors and other specific accounting requirements under U.S. generally accepted accounting principles ("GAAP") for software revenue recognition require that we have very precise terms in our license agreements to allow us to recognize revenue when we initially deliver software or perform services. Although we have a standard form of license agreement that we believe meets the criteria under GAAP for current revenue recognition on delivered elements, we negotiate and revise these terms and

conditions in many transactions. Therefore, we may license our software or provide services with terms and conditions that do not permit revenue recognition at the time of delivery or even as work on the project is completed.

We are dependent upon the retail industry for a significant portion of our revenues.

Historically, we have derived a significant percentage of our revenues from the license of software products and the sale of collaborative applications that address vertical market opportunities with manufacturers and wholesalers that supply retail customers. The success of our customers is directly linked to economic conditions in the retail industry, which in turn are subject to intense competitive pressures and are affected by overall economic conditions. In addition, we believe that the licensing of certain of our software products involves a large capital expenditure, which is often accompanied by large-scale hardware purchases or other capital commitments. As a result, demand for our products and services could decline in the event of instability or potential downturns in our customers' industries.

We believe the retail industry remains relatively cautious in its level of investment in IT when compared to other industries. We remain concerned about weak and uncertain economic conditions, consolidations and the disappointing results of retailers in certain markets, especially if such weak economic conditions persist for an extended period of time. Weak and uncertain economic conditions have negatively affected our revenues in the past and may do so in the future, including potential deterioration of our maintenance revenue base as customers look to reduce their costs, elongation of our selling cycles, and reduction in the demand for our products. As a result, it is difficult in the current economic environment to predict exactly when specific software licenses will close. In addition, weak and uncertain economic conditions could impair our customers' ability to pay for our products or services. We also believe the retail business transformation from retail brick-and-mortar to technology-enabled omni-channel commerce models will be a multi-year trend. Consequently, we cannot predict when the repercussions from this transformation may moderate or end. Any of these factors could adversely affect our business, our quarterly or annual operating results and our financial condition.

We have observed that as the retail industry consolidates it is experiencing increased competition in certain geographic regions that could negatively affect the industry and our customers' ability to pay for our products and services. Such consolidation has negatively impacted our revenues in the past and may continue to do so in the future, which may reduce the demand for our products, and may adversely affect our business, operating results and financial condition.

We may derive a significant portion of our revenues in any quarter from a limited number of large, non-recurring license sales.

We expect to continue to experience from time-to-time large, individual license sales, which may cause significant variations in quarterly license fees. We also believe that purchasing our products is relatively discretionary and generally involves a significant commitment of a customer's capital resources. Therefore, a downturn in any customer's business could result in order cancellations that could have a significant adverse impact on our revenues and quarterly results. Moreover, continued uncertainty about general economic conditions could precipitate significant reductions in corporate spending for IT, which could result in delays or cancellations of orders for our products.

Our lengthy sales cycle makes it difficult to predict quarterly revenue levels and operating results.

Because fees for our software products are substantial and the decision to purchase our products typically involves members of our customers' senior management, the sales process for our solutions is lengthy. Accordingly, the timing of our license revenues is difficult to predict, and the delay of an order could cause our quarterly revenues to fall substantially below our expectations and those of public market analysts and investors. Moreover, to the extent that we succeed in shifting customer purchases away from individual software products and toward more costly integrated suites of software and services, our sales cycle may lengthen, which could increase the likelihood of delays and cause the effect of a delay to become more pronounced. Delays in sales could cause significant shortfalls in our revenues and operating results for any particular period. Also, it is difficult for us to forecast the timing and recognition of revenues from sales of our products because our existing and prospective customers often take significant time evaluating our products before purchasing them. The period between initial customer contact and a purchase by a customer may vary from nine months to more than one year. During the evaluation period, prospective customers may decide not to purchase or may scale down proposed orders of our products for various reasons, including:

- reduced demand for enterprise software solutions;
- introduction of products by our competitors;
- lower prices offered by our competitors;

- changes in budgets and purchasing priorities; and
- reduced need to upgrade existing systems.

Our existing and prospective customers routinely require education regarding the use and benefits of our products. This may also lead to delays in receiving customers' orders.

We derive a significant portion of our services revenues from a small number of customers. If these customers were to discontinue the usage of our services or delay their implementation our total revenues would be adversely affected.

We derive a significant portion of our services revenues, and total revenues, from a small number of customers using our services for product enhancement and other optional services. If these customers were to discontinue or delay the usage of these services, or obtain these services from a competitor, our services revenues and total revenues would be adversely affected. Customers may delay or terminate implementation of our services due to budgetary constraints related to economic uncertainty, dissatisfaction with product quality, the difficulty of prioritizing numerous IT projects, changes in business strategy, personnel or priorities, or for other reasons. Such customers may be less likely to invest in additional software in the future and to continue to pay for software maintenance. Since our business relies to a large extent upon sales to existing customers and since maintenance and services revenues are key elements of our revenue base, any reduction in these sales or these maintenance and services payments could have a material adverse effect on our business, results of operations, cash flows and financial condition.

Services revenues carry lower gross margins than license revenues and an overall increase in services revenues as a percentage of total revenues could have an adverse impact on our business.

Because our service revenues have lower gross margins than do our license revenues, an increase in the percentage of total revenues represented by service revenues or a change in the mix between services that are provided by our employees versus services provided by third-party consultants could have a detrimental impact on our overall gross margins and could adversely affect operating results.

If our customers elect not to renew maintenance contracts after the initial maintenance period and the loss of those customers is not offset by new maintenance customers, our maintenance revenues and total revenues would be adversely affected.

Upon the purchase of a software license, our customers typically enter into a maintenance contract with a term from approximately one to three years. If, after this initial maintenance period, customers elect not to renew their maintenance contracts and we do not offset the loss of those customers with new maintenance customers as a result of new license fees, our maintenance revenues and total revenues would be adversely affected.

If accounting interpretations relating to revenue recognition change or companies we acquire have applied such standards differently than we do or have not applied them at all, our reported revenues could decline or we could be forced to make changes in our business practices or we may incur the expense and risks associated with an audit or restatement of the acquired company's financial statements.

There are several accounting standards and interpretations covering revenue recognition for the software industry. These standards address software revenue recognition matters primarily from a conceptual level and do not include specific implementation guidance. We believe that we currently comply with these standards.

The accounting profession and regulatory agencies continue to discuss various provisions of these pronouncements with the objective of providing additional guidance on their application and with respect to potential interpretations. These discussions and the issuance of new interpretations could lead to unanticipated changes in our current revenue accounting practices, which could change the timing of recognized revenue. They could also drive significant adjustments to our business practices which could result in increased administrative costs, lengthened sales cycles and other changes that could adversely affect our reported revenues and results of operations. In addition, companies we acquire historically may have interpreted software revenue recognition rules differently than we do or may not have been subject to U.S. GAAP as a result of reporting under local GAAP in a foreign country. If we discover that companies we have acquired have interpreted and applied software revenue recognition rules differently than prescribed by U.S. GAAP, we could be required to devote significant management resources, and incur the expense associated with an audit, restatement or other examination of the acquired companies' financial statements.

Our future growth depends upon our ability to develop and sustain relationships with complementary vendors to market and implement our software products, and a failure to develop and sustain these relationships could have a material adverse effect on our operating performance and financial condition.

We are developing, maintaining and enhancing significant working relationships with complementary vendors, such as software companies, consulting firms, resellers and others that we believe can play important roles in marketing our products and solutions. We are currently investing, and intend to continue to invest, significant resources to develop and enhance these relationships, which could adversely affect our operating margins. We may be unable to develop relationships with organizations that will be able to market our products effectively. Our arrangements with these organizations are not exclusive and, in many cases, may be terminated by either party without cause. Many of the organizations with which we are developing or maintaining marketing relationships have commercial relationships with our competitors. There can be no assurance that any organization will continue its involvement with us and our products. The loss of relationships with such organizations could materially and adversely affect our operating performance and financial condition.

Failure to maintain our margins and service rates for implementation services could have a material adverse effect on our operating performance and financial condition.

A significant portion of our revenues is derived from implementation services. If we fail to scope our implementation projects correctly, our services margins may suffer. We bill for implementation services predominately on an hourly or daily basis (time and materials) and sometimes under fixed price contracts, and we generally recognize revenue from those services as we perform the work. If we are not able to maintain the current service rates for our time and materials implementation services, and cannot make corresponding cost reductions, or if the percentage of fixed price contracts increases and we underestimate the costs of our fixed price contracts, our operating performance may suffer. The rates we charge for our implementation services depend on a number of factors, including the following:

- perceptions of our ability to add value through our implementation services;
- complexity of services performed;
- competition;
- pricing policies of our competitors and of systems integrators;
- use of globally sourced, lower-cost service delivery capabilities within our industry; and
- economic, political and market conditions.

Our past and future acquisitions may not be successful and we may have difficulty integrating acquisitions.

We continually evaluate potential acquisitions of complementary businesses, products and technologies. We have in the past acquired and invested, and may continue to acquire or invest, in complementary companies, products and technologies, and enter into joint ventures and strategic alliances with other companies. Acquisitions, joint ventures, strategic alliances, and investments present many risks, and we may not realize the financial and strategic goals that were contemplated at the time of any transaction. Risks commonly encountered in such transactions include:

- risk that an acquired company or assets may not further our business strategy or that we paid more than the company or assets were worth;
- difficulty of assimilating the operations and retaining and motivating personnel of an acquired company;
- risk that we may not be able to integrate acquired technologies or products with our current products and technologies;
- potential disruption of our ongoing business and the diversion of our management's attention from other business concerns;
- inability of management to maximize our financial and strategic position through the successful integration of an acquired company;
- adverse impact on our annual effective tax rate;
- dilution of existing equity holders caused by capital stock issuance to the shareholders of an acquired company or stock option grants to retain employees of an acquired company;

- difficulty in maintaining controls, procedures and policies;
- potential adverse impact on our relationships with partner companies or third-party providers of technology or products;
- impairment of relationships with employees and customers;
- potential assumption of liabilities of our acquisition targets;
- significant exit or impairment charges if products acquired in business combinations are unsuccessful; and
- issues with product quality, product architecture, legal contingencies, product development issues, or other significant issues that may not be detected through our due diligence process.

Accounting rules require the use of the purchase method of accounting in all new business acquisitions. Many acquisition candidates have significant intangible assets, so an acquisition of these businesses would likely result in significant amounts of goodwill and other intangible assets. The purchase method of accounting for business combinations may require large write-offs of any in-process research and development costs related to companies being acquired, as well as ongoing amortization costs for other intangible assets. Goodwill and certain other intangible assets are not amortized to income, but are subject to at least annual impairment reviews. If the acquisitions do not perform as planned, future write-offs and charges to income arising from such impairment reviews could be significant. In addition, these acquisitions could involve acquisition-related charges, such as one-time acquired research and development charges. Such write-offs and ongoing amortization charges may have a significant negative impact on operating margins and net earnings in the quarter of the combination and for several subsequent years. We may not be successful in overcoming these risks or any other problems encountered in connection with such transactions.

Fully integrating an acquired company or business into our operations may take a significant amount of time. In addition, we may only be able to conduct limited due diligence on an acquired company's operations. Following an acquisition, we may be subject to liabilities arising from an acquired company's past or present operations, including liabilities related to data security, encryption and privacy of customer data, and these liabilities may be greater than the warranty and indemnity limitations that we negotiate. We cannot assure you that we will be successful in overcoming these risks or any other problems encountered with acquisitions. To the extent we do not successfully avoid or overcome the risks or problems related to any acquisitions, our results of operations and financial condition could be adversely affected. Future acquisitions also could impact our financial position and capital needs, and could cause substantial fluctuations in our quarterly and yearly results of operations.

Our business may require additional capital.

We may require additional capital to finance our growth or to fund acquisitions or investments in complementary businesses, technologies or product lines. Our capital requirements may be influenced by many factors, including:

- demand for our products;
- timing and extent of our investment in new technology;
- timing and extent of our acquisition of other companies;
- level and timing of revenue;
- expenses of sales and marketing and new product development;
- success and related expense of increasing our brand awareness;
- cost of facilities to accommodate a growing workforce;
- extent to which competitors are successful in developing new products and increasing their market shares; and
- costs involved in maintaining and enforcing intellectual property rights.

To the extent that our resources are insufficient to fund our future activities, we may need to raise additional funds through public or private financing. However, additional funding, if needed, may not be available on terms attractive to us, or at all. Our inability to raise capital when needed could have a material adverse effect on our business, operating results and financial condition.

If additional funds are raised through the issuance of equity securities, the percentage ownership of our company by our current shareholders would be diluted.

Business disruptions could affect our operating results.

A significant portion of our research and development activities and certain other critical business operations are concentrated in a few geographic areas. We are a highly automated business and a disruption or failure of our systems could cause delays in completing sales and providing services. A major earthquake, fire or other catastrophic event that results in the destruction or disruption of any of our critical business or IT systems could severely affect our ability to conduct normal business operations and, as a result, our future operating results could be materially and adversely affected.

Our international operations and sales subject us to risks associated with unexpected activities outside of the United States.

The global reach of our business could cause us to be subject to unexpected, uncontrollable and rapidly changing events and circumstances in addition to those experienced within the United States. As we grow our international operations, we may need to recruit and hire new consulting, product development, sales and marketing and support personnel in the countries in which we have or will establish offices or otherwise have a significant presence. Entry into new international markets typically requires the establishment of new marketing and distribution channels, as well as the development and subsequent support of localized versions of our software. International introductions of our products often require a significant investment in advance of anticipated future revenues. In addition, the opening of a new office typically results in initial recruiting and training expenses and reduced labor efficiencies associated with the introduction of products to a new market. If we are less successful in a new market than we expect, we may not be able to realize an adequate return on our initial investment and our operating results could suffer. We cannot guarantee that the countries in which we operate will have a sufficient pool of qualified personnel from which to hire, that we will be successful at hiring, training or retaining such personnel or that we can expand or contract our international operations in a timely, cost-effective manner. If we have to downsize certain international operations, particularly in Europe, the costs to do so are typically much higher than downsizing costs in the United States. The following factors, among others, could have an adverse impact on our business and earnings:

- failure to properly comply with foreign laws and regulations applicable to our foreign activities including, without limitation, software localization requirements;
- failure to properly comply with U.S. laws and regulations relating to the export of our products and services;
- compliance with multiple and potentially conflicting regulations in Europe, Asia and North America, including export requirements, tariffs, import duties and other trade barriers, as well as health and safety requirements;
- difficulties in managing foreign operations and appropriate levels of staffing;
- longer collection cycles;
- tariffs and other trade barriers, including the economic burden and uncertainty placed on our customers by the imposition and threatened imposition of tariffs by the U.S., China and perhaps other countries;
- seasonal reductions in business activities, particularly throughout Europe;
- reduced protection for intellectual property rights in some countries;
- proper compliance with local tax laws which can be complex and may result in unintended adverse tax consequences;
- anti-American sentiment due to conflicts in the Middle East and other American policies that may be unpopular in certain countries;
- increasing political instability, adverse economic conditions and the potential for war or other hostilities in many of these countries;
- difficulties in enforcing agreements through foreign legal systems;
- fluctuations in exchange rates that may affect product demand and may adversely affect the profitability in U.S. dollars of products and services provided by us in foreign markets where payment for our products and services is made in the

local currency, including any fluctuations caused by uncertainties relating to the June 2016 referendum vote by the United Kingdom to exit the European Union (“Brexit”);

- changes in general economic and political conditions in countries where we operate;
- impact of Brexit on the United Kingdom’s access to the European Union Single Market, the related regulatory environment, the global economy and the resulting impact on our business, including the delay of execution of contracts by our customers;
- potential labor strikes, lockouts, work slowdowns and work stoppages; and
- restrictions on downsizing operations in Europe and expenses and delays associated with any such activities.

It may become increasingly expensive to obtain and maintain liability insurance.

Our products are often critical to the operations of our customers’ businesses and provide benefits that may be difficult to quantify. If our products fail to function as required, we may be subject to claims for substantial damages. Courts may not enforce provisions in our contracts that would limit our liability or otherwise protect us from liability for damages. Although we maintain general liability insurance coverage, including coverage for errors or omissions, this coverage may not continue to be available on reasonable terms or in sufficient amounts to cover claims against us. In addition, our insurers may disclaim coverage as to any future claim. If claims exceeding the available insurance coverage are successfully asserted against us, or our insurers impose premium increases, large deductibles or co-insurance requirements on us, our business and results of operations could be adversely affected.

We contract for insurance to cover a variety of potential risks and liabilities, including those relating to the unexpected failure of our products. In the current market, insurance coverage for all types of risk is becoming more restrictive, and when insurance coverage is offered, the amount for which we are responsible is larger. In light of these circumstances, it may become more difficult to maintain insurance coverage at historical levels or, if such coverage is available, the cost to obtain or maintain it may increase substantially. This may result in our being forced to bear the burden of an increased portion of risks for which we have traditionally been covered by insurance, which could negatively impact our results of operations.

Adverse litigation results could affect our business.

We may be subject to various legal proceedings and claims involving customer, shareholder, consumer, competitor and other issues on a national or global basis. Litigation or other dispute resolution can be lengthy, expensive and disruptive to our operations, and results cannot be predicted with certainty. An adverse decision could result in monetary damages or injunctive relief that could affect our business, operating results or financial condition.

Growth in our operations could increase demands on our managerial and operational resources.

If the scope of our operating and financial systems and the geographic distribution of our operations and customers increase dramatically, this may increase demands on our management and operations. Our officers and other key employees will need to implement and improve our operational, customer support and financial control systems and effectively expand, train and manage our employee base.

Further, we may be required to manage an increasing number of relationships with various customers and other third parties. We may not be able to manage future expansion successfully, and our inability to do so could harm our business, operating results and financial condition.

Unanticipated changes in effective tax rates or adverse outcomes resulting from examination of our income or other tax returns could adversely affect our operating results and financial condition.

We are subject to income taxes in the U.S. and various foreign jurisdictions, and our domestic and international tax liabilities are subject to the allocation of expenses in differing jurisdictions. Our future effective tax rates could be subject to volatility or adversely affected by a number of factors, including:

- changes in the valuation of our deferred tax assets and liabilities?
- expected timing and amount of the release of tax valuation allowances;
- expiration of, or detrimental changes in, research and development tax credit laws;

- tax effects of stock-based compensation;
- costs related to intercompany restructurings;
- changes in tax laws, regulations, accounting principles or interpretations thereof; and
- future earnings being lower than anticipated in countries where we have lower statutory tax rates and higher than anticipated earnings in countries where we have higher statutory tax rates.

In addition, we may be subject to audits of our income and sales taxes by the Internal Revenue Service and foreign and state tax authorities. Outcomes from these audits could have an adverse effect on our operating results and financial condition.

RISK FACTORS RELATED TO OUR PRODUCTS

We may not be successful in convincing customers to migrate to current or future releases of our products, which may lead to reduced services and maintenance revenues and less future business from existing customers.

Our customers may not be willing to incur the costs or invest the resources necessary to complete upgrades to current or future releases of our products. This may lead to a loss of services and maintenance revenues and future business from customers that continue to operate prior versions of our products or choose to no longer use our products.

We depend on third-party technology which, if it should become unavailable or if it contains defects, could result in increased costs or delays in the production and improvement of our products.

We license critical third-party software products that we incorporate into our own software products. We are likely to incorporate and include additional third-party software into and with our products and solutions as we expand our product offerings. The operation of our products would be impaired if errors occur in the third-party software that we utilize. It may be more difficult for us to correct any defects in third-party software because the software is not within our control. Accordingly, our business could be adversely affected in the event of any errors in this software. There can be no assurance that these third parties will continue to make their software available to us on acceptable terms, invest the appropriate levels of resources in their products and services to maintain and enhance the capabilities of their software, or even remain in business. Further, due to the limited number of vendors of certain types of third-party software, it may be difficult for us to replace such third-party software if a vendor terminates our license of the software or our ability to license the software to customers. If our relations with any of these third-party software providers are impaired, and if we are unable to obtain or develop a replacement for the software, our business could be harmed. In addition, if the cost of licensing any of these third-party software products significantly increases, our gross margin levels could significantly decrease.

The use of open source software in our products may expose us to additional risks and harm our intellectual property.

Some of our products use or incorporate software that is subject to one or more open source licenses. Open source software is typically freely accessible, usable and modifiable. Certain open source software licenses require a user who intends to distribute the open source software as a component of the user's software to disclose publicly part or all of the source code to the user's software. In addition, certain open source software licenses require the user of such software to make any derivative works of the open source code available to others on unfavorable terms or at no cost. This can subject previously proprietary software to open source license terms.

While we monitor the use of all open source software in our products, processes and technology and try to ensure that no open source software is used in such a way as to require us to disclose the source code to the related product or solution, such use could inadvertently occur. Additionally, if a third-party software provider has incorporated certain types of open source software into software we license from such third party for our products and solutions, we could, under certain circumstances, be required to disclose the source code to our products and solutions. This could harm our intellectual property position and have a material adverse effect on our business, results of operations, cash flow and financial condition.

We may be unable to retain or attract customers if we do not develop new products and enhance our current products in response to technological changes and competing products.

As a software company, we have been required to migrate our products and services from mainframe to customer server to web-based environments. In addition, we have been required to adapt our products to emerging standards for operating systems, databases and other technologies. We will be unable to compete effectively if we are unable to:

- maintain and enhance our technological capabilities to correspond to these emerging environments and standards;
- develop and market products and services that meet changing customer needs; or
- anticipate or respond to technological changes on a cost-effective and timely basis.

A substantial portion of our research and development resources is devoted to product upgrades that address regulatory and support requirements. Only the remainder of our limited research and development resources is available for new products. New products require significant development investment. That investment is further constrained because of the added costs of developing new products that work with multiple operating systems or databases. We face uncertainty when we develop or acquire new products because there is no assurance that a sufficient market will develop for those products. If we do not attract sufficient customer interest in those products, we will not realize a return on our investment and our operating results will be adversely affected.

Our core products face competition from new or modified technologies that may render our existing technology less competitive or obsolete, reducing the demand for our products. As a result, we must continually redesign our products to incorporate these new technologies and to adapt our software products to operate on, and comply with evolving industry standards for, hardware and software platforms. Maintaining and upgrading our products to operate on multiple hardware and database platforms reduces our resources for developing new products. Because of the increased costs of developing and supporting software products across multiple platforms, we may need to reduce the number of those platforms. In addition, conflicting new technologies present us with difficult choices of which new technologies to adopt. If we fail to anticipate the most popular platforms, fail to respond adequately to technological developments, or experience significant delays in product development or introduction, our business and operating results will be negatively impacted.

In addition, to the extent we determine that new technologies and equipment are required to remain competitive, the development, acquisition and implementation of such technologies may require us to make significant capital investments. We may not be able to obtain capital for these purposes and investments in new technologies may not result in commercially viable products. The loss of revenue and increased costs to us from such changing technologies would adversely affect our business and operating results.

If our products are not able to deliver quick, demonstrable value to our customers, our business could be seriously harmed.

Enterprises are requiring their application software vendors to provide faster returns on their technology investments. We must continue to improve our speed of implementation and the pace at which our products deliver value or our competitors may gain important strategic advantages over us. If we cannot successfully respond to these market demands, or if our competitors respond more successfully than we do, our business, results of operations and financial condition could be materially and adversely affected.

If we do not maintain software performance across accepted platforms and operating environments, our license and services revenue could be adversely affected.

The markets for our software products are characterized by rapid technological change, evolving industry standards, changes in customer requirements and frequent new product introductions and enhancements. We continuously evaluate new technologies and implement advanced technology into our products. However, if in our product development efforts we fail to accurately address, in a timely manner, evolving industry standards, new technology advancements or important third-party interfaces or product architectures, sales of our products and services will suffer.

Market acceptance of new platforms and operating environments may require us to undergo the expense of developing and maintaining compatible product lines. We can license our software products for use with a variety of popular industry standard relational database management system platforms using different programming languages and underlying databases and architectures. There may be future or existing relational database platforms that achieve popularity in the marketplace and that may or may not be architecturally compatible with our software product design. In addition, the effort and expense of developing, testing, and maintaining software product lines will increase as more hardware platforms and operating systems achieve market acceptance within our target markets. Moreover, future or existing user interfaces that achieve popularity within the business application marketplace may or may not be architecturally compatible with our current software product design. If we do not

achieve market acceptance of new user interfaces that we support, or adapt to popular new user interfaces that we do not support, our sales and revenue may be adversely affected. Developing and maintaining consistent software product performance characteristics across all of these combinations could place a significant strain on our resources and software product release schedules, which could adversely affect revenues and results of operations.

Our software products and product development are complex, which make it increasingly difficult to innovate, extend our product offerings, and avoid costs related to correction of program errors.

The market for our software products is characterized by rapid technological change, evolving industry standards, changes in customer requirements and frequent new product introductions and enhancements. For instance, existing products can become obsolete and unmarketable when vendors introduce products utilizing new technologies or new industry standards emerge. As a result, it is difficult for us to estimate the life cycles of our software products. There can be no assurance that we will successfully identify new product opportunities or develop and bring new products to the market in a timely and cost-effective manner, or that products, capabilities or technologies developed by our competitors will not render our products obsolete. Our future success will depend in part upon our ability to:

- continue to enhance and expand our core applications;
- continue to sell our products;
- continue to successfully integrate third-party products;
- enter new markets and achieve market acceptance; and
- develop and introduce new products that keep pace with technological developments, including developments related to the Internet, satisfy increasingly sophisticated customer requirements and achieve market acceptance.

Despite testing by us, our software programs, like all software programs generally, may contain a number of undetected errors or “bugs” when we first introduce them or as new versions are released. We do not discover some errors until we have installed the product and our customers have used it. Errors may result in the delay or loss of revenues, diversion of software engineering resources, material non-monetary concessions, negative media attention, or increased service or warranty costs as a result of performance or warranty claims that could lead to customer dissatisfaction, resulting in litigation, damage to our reputation, and impaired demand for our products. Correcting bugs may result in increased costs and reduced acceptance of our software products in the marketplace. Further, such errors could subject us to claims from our customers for significant damages, and we cannot assure you that courts would enforce the provisions in our customer agreements that limit our liability for damages. The effort and expense of developing, testing and maintaining software product lines will increase with the increasing number of possible combinations of:

- vendor hardware platforms;
- operating systems and updated versions;
- application software products and updated versions; and
- database management system platforms and updated versions.

Developing consistent software product performance characteristics across all of these combinations could place a significant strain on our development resources and software product release schedules.

If the open source community expands into enterprise application and supply chain software, our license fee revenues may decline.

The open source community is comprised of many different formal and informal groups of software developers and individuals who have created a wide variety of software and have made that software available for use, distribution and modification, often free of charge. Open source software, such as the Linux operating system, has been gaining in popularity among business users. If developers contribute enterprise and supply chain application software to the open source community, and that software has competitive features and scale to support business users in our markets, we will need to change our product pricing and distribution strategy to compete successfully.

Implementation of our products can be complex, time-consuming and expensive, customers may be unable to implement our products successfully, and we may become subject to warranty or product liability claims, which could be costly to resolve and result in negative publicity.

Our products must integrate with the many existing computer systems and software programs of our customers. This can be complex, time-consuming and expensive, and may cause delays in the deployment of our products. Our customers may be unable to implement our products successfully or otherwise achieve the benefits attributable to our products. Although we test each of our new products and product enhancement releases and evaluate and test the products we obtain through acquisitions before introducing them to the market, there may still be significant errors in existing or future releases of our software products, with the possible result that we may be required to expend significant resources in order to correct such errors or otherwise satisfy customer demands. In addition, defects in our products or difficulty integrating our products with our customers' systems could result in delayed or lost revenues, warranty or other claims against us by customers or third parties, adverse customer reactions and negative publicity about us or our products and services or reduced acceptance of our products and services in the marketplace, any of which could have a material adverse effect on our reputation, business, results of operations and financial condition.

An increase in sales of software products that require customization would result in revenue being recognized over the term of the contract for those products and could have a material adverse effect on our operating performance and financial condition.

Historically, we generally have been able to recognize software license revenue upon delivery of our solutions and contract execution. Customers and prospects could ask for unique capabilities in addition to our core capabilities to give them a competitive edge in the market place. These instances could cause us to recognize more of our software license revenue on a contract accounting basis over the course of the delivery of the solution rather than upon delivery and contract execution. The period between the initial contract and the completion of the implementation of our products can be lengthy and is subject to a number of factors (over many of which we have little or no control) that may cause significant delays. These factors include the size and complexity of the overall project. As a result, a shift toward a higher proportion of software license contracts requiring contract accounting would have a material adverse effect on our operating performance and financial condition and cause our operating results to vary significantly from quarter to quarter.

We sometimes experience delays in product releases, which can adversely affect our business.

Historically, we have issued significant new releases of our software products periodically, with minor interim releases issued more frequently. As a result of the complexities inherent in our software, major new product enhancements and new products often require long development and testing periods before they are released. On occasion, we have experienced delays in the scheduled release dates of new or enhanced products, and we cannot provide any assurance that we will achieve future scheduled release dates. The delay of product releases or enhancements, or the failure of such products or enhancements to achieve market acceptance, could materially affect our business and reputation.

We may not receive significant revenues from our current research and development efforts for several years.

Developing and localizing software is expensive, and the investment in product development may involve a long payback cycle. Our future plans include significant investments in software research and development and related product opportunities. We believe that we must continue to dedicate a significant amount of resources to our research and development efforts to maintain our competitive position. However, we do not expect to receive significant revenues from these investments for several years, if at all.

We have limited protection of our intellectual property and proprietary rights and may potentially infringe third-party intellectual property rights.

We consider certain aspects of our internal operations, software and documentation to be proprietary, and rely on a combination of copyright, trademark and trade secret laws; confidentiality agreements with employees and third parties; and protective contractual provisions (such as those contained in our agreements with consultants, vendors, partners and customers) and other measures to protect this information. Existing copyright laws afford only limited protection. We believe that the rapid pace of technological change in the computer software industry has made trade secret and copyright protection less significant than factors such as:

- knowledge, ability and experience of our employees;
- frequent software product enhancements;

- customer education; and
- timeliness and quality of support services.

Our competitors may independently develop technologies that are substantially equivalent or superior to our technology. The laws of some countries in which our software products are or may be licensed do not protect our software products and intellectual property rights to the same extent as the laws of the United States.

We generally enter into confidentiality or similar agreements with our employees, customers, consultants, and vendors. These agreements control access to and distribution of our software, documentation, and other proprietary information. Despite our efforts to protect our proprietary rights, unauthorized parties may copy aspects of our products, obtain and use information that we regard as proprietary, or develop similar technology through reverse engineering or other means. Preventing or detecting unauthorized use of our products is difficult. There can be no assurance that the steps we take will prevent misappropriation of our technology or that our license agreements will be enforceable. In addition, we may resort to litigation to enforce our intellectual property rights, protect our trade secrets, determine the validity and scope of others' proprietary rights, or defend against claims of infringement or invalidity in the future. Such litigation could result in significant costs or the diversion of resources. This could materially and adversely affect our business, operating results and financial condition.

Third parties may assert infringement claims against us. Although we do not believe that our products infringe on the proprietary rights of third parties, we cannot guarantee that third parties will not assert or prosecute infringement or invalidity claims against us. These assertions could distract management, require us to enter into royalty arrangements, and result in costly and time-consuming litigation, including damage awards. Such assertions or the defense of such claims may materially and adversely affect our business, operating results, or financial condition. In addition, such assertions could result in injunctions against us. Injunctions that prevent us from distributing our products would have a material adverse effect on our business, operating results, and financial condition. If third parties assert such claims against us, we may seek to obtain a license to use such intellectual property rights. There can be no assurance that such a license would be available on commercially reasonable terms. If a patent claim against us were successful and we could not obtain a license on acceptable terms or license a substitute technology or redesign to avoid infringement, we may be prevented from distributing our software or required to incur significant expense and delay in developing non-infringing software.

We may experience liability claims arising out of the licensing of our software and provision of services.

Our agreements normally contain provisions designed to limit our exposure to potential liability claims and generally exclude consequential and other forms of extraordinary damages. However, these provisions could be rendered ineffective, invalid or unenforceable by unfavorable judicial decisions or by federal, state, local or foreign laws or ordinances. For example, we may not be able to avoid or limit liability for disputes relating to product performance or the provision of services. If a claim against us were to be successful, we may be required to incur significant expense and pay substantial damages, including consequential or punitive damages, which could have a material adverse effect on our business, operating results and financial condition. Even if we prevail in contesting such a claim, the accompanying publicity could adversely affect the demand for our products and services.

We also rely on certain technology that we license from third parties, including software that is integrated with our internally developed software. Although these third parties generally indemnify us against claims that their technology infringes on the proprietary rights of others, such indemnification is not always available for all types of intellectual property. Often such third-party indemnifiers are not well capitalized and may not be able to indemnify us in the event that their technology infringes on the proprietary rights of others. As a result, we may face substantial exposure if technology we license from a third party infringes on another party's proprietary rights. Defending such infringement claims, regardless of their validity, could result in significant cost and diversion of resources.

Concerns that our products do not adequately protect the privacy of consumers could inhibit sales of our products.

One of the features of our software applications is the ability to develop and maintain profiles of customers for use by businesses. Typically, these products capture profile information when customers and employees visit an Internet web site and volunteer information in response to survey questions concerning their backgrounds, interests and preferences. Our products augment these profiles over time by collecting usage data. Although we have designed our products to operate with applications that protect user privacy, privacy concerns may nevertheless cause visitors to resist providing the personal data necessary to support this profiling capability. If we cannot adequately address customers' privacy concerns, these concerns could materially and adversely harm our business, financial condition and operating results.

We face risks associated with the security of our products, and if our data protection or other security measures are compromised and as a result our data, our customers' data or our IT systems are accessed improperly, made unavailable, or improperly modified, our products and services may be perceived as vulnerable, our brand and reputation could be damaged, the IT services we provide to our customers could be disrupted, and customers may stop using our products and services, all of which could reduce our revenue and earnings, increase our expenses and expose us to legal claims and regulatory actions.

Maintaining the security of computers and computer networks is an issue of critical importance for our customers. Attempts by experienced computer programmers, or hackers, to penetrate client network security or the security of web sites to misappropriate confidential information have become an industry-wide phenomenon that affects computers and networks across all platforms. We have included security features in certain of our Internet browser-enabled products that are intended to protect the privacy and integrity of customer data. In addition, some of our software applications use encryption technology to provide the security necessary to affect the secure exchange of valuable and confidential information. Despite these security features, our products may be vulnerable to break-ins and similar problems caused by hackers, which could jeopardize the security of information stored in and transmitted through the computer systems of our customers. Actual or perceived security vulnerabilities in our products (or the Internet in general) could lead some customers to seek to reduce or delay future purchases or to purchase competitors' products which are not Internet-based applications. Customers may also increase their spending to protect their computer networks from attack, which could delay adoption of new technologies. Any of these actions by customers and the cost of addressing such security problems may have a material adverse effect on our business.

Although our license agreements with our customers contain provisions designed to limit our exposure as a result of the situations listed above, such provisions may not be effective. Existing or future federal, state, or local laws or ordinances or unfavorable judicial decisions could affect their enforceability. To date, we have not experienced any such product liability claims, but there can be no assurance that this will not occur in the future. Because our products are used in essential business applications, a successful product liability claim could have a material adverse effect on our business, operating results, and financial condition. Additionally, defending such a suit, regardless of its merits, could entail substantial expense and require the time and attention of key management.

Any interruptions or delays in services from third-parties, including data center hosting facilities and cloud computing platform providers, or our inability to adequately plan for and manage service interruptions or infrastructure capacity requirements, could impair the delivery of our services and harm our business.

We currently serve our customers from third-party data center hosting facilities and cloud computing platform providers located in the United States and other countries. Any damage to, or failure of our systems generally, including the systems of our third-party platform providers, could result in interruptions in our services. We have from time to time experienced interruptions in our services and such interruptions may occur in the future. As we increase our reliance on these third-party systems, the risk of service interruptions may increase. Interruptions in our services may cause customers to make warranty or other claims against us or terminate their subscriptions and adversely affect our ability to attract new customers, all of which would reduce our revenues. Our business also would be harmed if customers and potential customers believe our services are unreliable.

These data and cloud computing platforms may not continue to be available at reasonable prices, on commercially reasonable terms or at all. Any loss of the right to use any of these cloud computing platforms could significantly increase our expenses and otherwise result in delays in providing our services until equivalent technology is either developed by us or, if available, is identified, purchased or licensed and integrated into our services.

If we do not accurately plan for our infrastructure capacity requirements and we experience significant strains on our data center capacity, our customers could experience performance degradation or service outages that may subject us to financial liabilities, result in customer losses and harm our business. As we add data centers and capacity and continue to move to a cloud computing platform, we may move or transfer our data and our customers' data. Despite precautions taken during this process, any unsuccessful data transfers may impair the delivery of our services, which may adversely impact our business.

Privacy and security concerns, including evolving government regulation in the area of consumer data privacy, could adversely affect our business and operating results.

Governments in some jurisdictions have enacted or are considering enacting consumer data privacy legislation, including laws and regulations applying to the solicitation, collection, processing and use of consumer data. For example, in 2016, the European Union adopted a new law governing data practices and privacy called the General Data Protection Regulation ("GDPR"), which became effective in May 2018. The law establishes new requirements regarding the handling of personal data. Non-compliance with the GDPR may result in monetary penalties of up to 4% of worldwide revenue. The GDPR and other changes in

laws or regulations associated with the enhanced protection of certain types of sensitive data could greatly increase our cost of providing our products and services or even prevent us from offering certain services in jurisdictions that we operate. Additionally, public perception and standards related to the privacy of personal information can shift rapidly, in ways that may affect our reputation or influence regulators to enact regulations and laws that may limit our ability to provide certain products. U.S. federal, state, or foreign laws and regulations, including laws and regulations regulating privacy, data security, or consumer protection, or other policies, public perception, standards, self-regulatory requirements or legal obligations could reduce the demand for our software products if we fail to design or enhance our products to enable our customers to comply with the privacy and security measures dictated by these requirements. Moreover, we may be exposed to liability under existing or new consumer data privacy legislation. Even technical violations of these laws can result in penalties that are assessed for each non-compliant transaction. If we or our customers were found to be subject to and in violation of any of these laws or other data privacy laws or regulations, our business could suffer and we and/or our customers would likely have to change our business practices.

We might experience significant errors or security flaws in our software products and services.

Despite testing prior to their release, software products frequently contain errors or security flaws, especially when first introduced or when new versions are released. The detection and correction of any security flaws can be time-consuming and costly. Errors in our software products could affect the ability of our products to work with other hardware or software products, could delay the development or release of new products or new versions of products and could adversely affect market acceptance of our products. If we experience errors or delays in releasing new software products or new versions of software products, we could lose revenues. In addition, there could be security issues with our products and networks and any security flaws, if exploited, could affect our ability to conduct internal business operations. End users, who rely on our software products and services for applications that are critical to their businesses, may have a greater sensitivity to product errors and security vulnerabilities than do customers for software products generally. Software product errors and security flaws in our products or services could expose us to product liability, performance and/or warranty claims as well as harm our reputation, which could impact our future sales of products and services. In addition, we may be legally required to publicly report security breaches, which could adversely impact future business prospects for our products and services.

RISK FACTORS RELATED TO OUR PERSONNEL

We are dependent upon key personnel, and need to attract and retain highly qualified personnel in all areas.

Our future operating results depend significantly upon the continued service of a relatively small number of key senior management and technical personnel, including our President, H. Allan Dow. None of our key personnel are bound by long-term employment agreements. We do not have in place “key person” life insurance policies on any of our employees. If we fail to retain senior management or other key personnel, or fail to attract key personnel, our succession planning and operations could be materially and adversely affected and could jeopardize our ability to meet our business goals.

Our future success also depends on our continuing ability to attract, train, retain and motivate other highly qualified managerial and technical personnel. Competition for these personnel is intense, and at times we have experienced difficulty in recruiting and retaining qualified personnel, including sales and marketing representatives, qualified software engineers involved in ongoing product development, and personnel who assist in the implementation of our products and provide other services. The market for such individuals is competitive. For example, it has been particularly difficult to attract and retain product development personnel experienced in object oriented development technologies. Given the critical roles of our sales, product development and consulting staffs, our inability to recruit successfully or any significant loss of key personnel would adversely affect us. A high level of employee mobility and aggressive recruiting of skilled personnel characterizes the software industry. It may be particularly difficult to retain or compete for skilled personnel against larger, better-known software companies. We cannot guarantee that we will be able to retain our current personnel, attract and retain other highly qualified technical and managerial personnel in the future, or assimilate the employees from any acquired businesses. We will continue to adjust the size and composition of our workforce to match the relevant product and geographic demand cycles. If we are unable to attract and retain the necessary technical and managerial personnel, or assimilate the employees from any acquired businesses, our business, operating results and financial condition would be adversely affected.

The failure to attract, train, retain and effectively manage employees could negatively impact our development and sales efforts and cause a degradation of our customer service. In particular, the loss of sales personnel could lead to lost sales opportunities because it can take several months to hire and train replacement sales personnel. If our competitors increase their use of non-compete agreements, the pool of available sales and technical personnel may further narrow in certain areas, even if the non-compete agreements ultimately prove to be unenforceable. We may grant large numbers of stock options to attract and retain personnel, which could be highly dilutive to our shareholders. The volatility or lack of positive performance of our stock price may adversely affect our ability to retain or attract employees. The loss of key management and technical personnel or the inability to attract and retain additional qualified personnel could have an adverse effect on us.

We periodically have restructured our sales force, which can be disruptive.

We continue to rely heavily on our direct sales force. Periodically, we have restructured or made other adjustments to our sales force in response to factors such as product changes, geographical coverage and other internal considerations. Change in the structures of the sales force and sales force management can result in temporary lack of focus and reduced productivity that may affect revenues in one or more quarters. Future restructuring of our sales force could occur, and if so we may again experience the adverse transition issues associated with such restructuring.

Our technical personnel have unique access to customer data, and may abuse that privilege.

Of necessity for the proper rendering of the services we provide, our technical personnel have the ability to access data on the systems run by our customers or hosted by us for our customers. This would include data about the operations of our customers and even about the customers of our customers. Although we have never had such an occurrence in the entire history of our Company, it is conceivable that such access could be abused in order to improperly utilize that data to the detriment of such customers.

RISK FACTORS RELATED TO OUR CORPORATE STRUCTURE AND GOVERNANCE

Our business is subject to changing regulation of corporate governance and public disclosure that has increased both our costs and the risk of noncompliance.

Because our common stock is publicly traded, we are subject to certain rules and regulations of federal, state and financial market exchange entities charged with the protection of investors and the oversight of companies whose securities are publicly traded. These entities, including the Public Company Accounting Oversight Board, the SEC and NASDAQ, have issued requirements and regulations and continue to develop additional regulations and requirements in response to laws enacted by Congress, most notably the Sarbanes-Oxley Act of 2002. Our efforts to comply with these regulations have resulted in, and are likely to continue to result in, increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities.

In particular, our efforts to comply with Section 404 of the Sarbanes-Oxley Act of 2002 and the related regulations regarding our required assessment of our internal control over financial reporting and our independent public accounting firm's audit of that assessment have required, and continue to require, the commitment of significant financial and managerial resources. Moreover, because these laws, regulations and standards are subject to varying interpretations, their application in practice may evolve over time as new guidance becomes available. This evolution may result in continuing uncertainty regarding compliance matters and additional costs necessitated by ongoing revisions to our disclosure and governance practices. Over time, we have made significant changes in, and may consider making additional changes to, our internal controls, our disclosure controls and procedures, and our corporate governance policies and procedures. Any system of controls, however well designed and operated, is based in part on certain assumptions and can provide only reasonable, and not absolute, assurances that the objectives of the system are met. Any failure of our controls, policies and procedures could have a material adverse effect on our business, results of operations, cash flow and financial condition.

If in the future we are unable to assert that our internal control over financial reporting is effective as of the end of the then current fiscal year (or if our independent registered public accounting firm is unable to express an opinion on the effectiveness of our internal control over financial reporting), we could lose investor confidence in the accuracy and completeness of our financial reports, which would have a negative market reaction.

One stockholder beneficially owns a substantial portion of our stock, and as a result exerts substantial control over us.

As of June 30, 2019, James C. Edenfield, Executive Chairman, Treasurer and a Director of the Company, beneficially owned 1,821,587 shares, or 100%, of our Class B common stock, and 221,00 shares, or 0.75%, of our Class A common stock. If all of Mr. Edenfield's Class B shares were converted into Class A shares, Mr. Edenfield would beneficially own 2,042,587 Class A shares, which would represent approximately 6.52% of all outstanding Class A shares after giving effect to such conversion. As a result of Mr. Edenfield's ownership of Class B common stock, he has the right to elect a majority of our Board of Directors. Moreover, Mr. Edenfield and a member of his immediate family constitute two of the six members of the Board, and thus have significant influence in directing the actions of the Board. Such control and concentration of ownership may discourage a potential acquirer from making a purchase offer that other shareholders might find favorable, which in turn could adversely affect the market price of our common stock.

Our articles of incorporation and bylaws and Georgia law may inhibit a takeover of our company.

Our basic corporate documents and Georgia law contain provisions that might enable our management to resist a takeover. These provisions might discourage, delay or prevent a change in the control or a change in our management. These provisions could also discourage proxy contests and make it more difficult for you and other shareholders to elect directors and take other corporate actions. The existence of these provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock.

We are a “controlled company” within the meaning of NASDAQ rules and, as a result, qualify for, and rely on, exemptions from certain corporate governance requirements.

Because Mr. Edenfield has the ability to elect more than half of the members of our Board of Directors, we are a “controlled company” within the meaning of the rules governing companies with stock quoted on the NASDAQ Global Select Market. Under these rules, a “controlled company” is a company of which more than 50% of the voting power for the election of directors is held by an individual, a group or another company. As a controlled company, we are exempt from certain corporate governance requirements, including requirements that: (1) a majority of the board of directors consist of independent directors; (2) compensation of officers be determined or recommended to the board of directors by a majority of its independent directors or by a compensation committee that is composed entirely of independent directors; and (3) director nominees be selected or recommended for selection by a majority of the independent directors or by a nominating committee composed solely of independent directors. Our Board of Directors does not have a majority of independent directors, and our compensation committee is not required to consist entirely of independent directors. We are not required to have, and have not chosen to establish, a nominating committee. Accordingly, our procedures for approving significant corporate decisions are not subject to the same corporate governance requirements as non-controlled companies with stock quoted on the NASDAQ Global Select Market.

RISK FACTORS RELATED TO OUR STOCK PRICE

We could experience fluctuations in quarterly operating results that could adversely affect our stock price.

We have difficulty predicting our actual quarterly operating results, which have varied widely in the past and which we expect to continue to vary significantly from quarter to quarter due to a number of factors, many of which are outside our control. We base our expense levels, operating costs and hiring plans on projections of future revenues, and it is difficult for us to rapidly adjust when actual results do not match our projections. If our quarterly revenue or operating results fall below the expectations of investors or public market analysts, the price of our common stock could fall substantially. License revenues in any quarter depend substantially on the combined contracting activity of the American Software group of companies and our ability to recognize revenues in that quarter in accordance with our revenue recognition policies. Our contracting activity is difficult to forecast for a variety of reasons, including the following:

- we complete a significant portion of our customer agreements within the last few weeks of each quarter;
- if a license agreement includes cloud services such as managing the application and hosting the server that are performed over the term of the contract, this requires all the revenue to be spread over the term of the contract;
- our sales cycle for products and services, including multiple levels of authorization required by some customers, is relatively long and variable because of the complex and mission-critical nature of our products;
- the demand for our products and services can vary significantly;
- the size of our transactions can vary significantly;
- the possibility of adverse global political conditions and economic downturns, both domestic and international, characterized by decreased product demand, price erosion, technological shifts, work slowdowns and layoffs, may substantially reduce customer demand and contracting activity;
- customers may unexpectedly postpone or cancel anticipated system replacement or new system evaluation and implementation due to changes in their strategic priorities, project objectives, budgetary constraints, internal purchasing processes or company management;
- customer evaluations and purchasing processes vary from company to company, and a customer’s internal approval and expenditure authorization process can be difficult and time-consuming, even after selection of a vendor; and
- the number, timing and significance of software product enhancements and new software product announcements by us and by our competitors may affect purchase decisions.

Variations or slowdowns in our licensing activity in prior quarters may affect current and future consulting, training and maintenance revenues, since these revenues typically follow license fee revenues. Our ability to maintain or increase services revenues primarily depends on our ability to increase the number and size of our licensing agreements. In addition, we base our budgeted operating costs and hiring plans primarily on our projections of future revenues. Because most of our expense levels are relatively fixed, including employee compensation and rent in the near term, if our actual revenues fall below projections in any particular quarter, our business, operating results, and financial condition could be materially and adversely affected. In addition, our expense levels are based, in part, on our expectations regarding future revenue increases. As a result, any shortfall in revenue in relation to our expectations could cause significant changes in our operating results from quarter to quarter and could result in quarterly losses. As a result of these factors, we believe that period-to-period comparisons of our revenue levels and operating results are not necessarily meaningful. As a result, predictions of our future performance should not be based solely on our historical quarterly revenue and operating results.

Our stock price is volatile and there is a risk of litigation.

The trading price of our common stock has been in the past and may in the future be subject to wide fluctuations in response to factors such as the following:

- general market conditions;
- revenue or results of operations in any quarter failing to meet the expectations, published or otherwise, of the investment community;
- customer order deferrals resulting from the anticipation of new products, economic uncertainty, disappointing operating results by the customer, management changes, corporate reorganizations or otherwise;
- reduced investor confidence in equity markets, due in part to corporate collapses in recent years;
- speculation in the press or analyst community;
- wide fluctuations in stock prices, particularly with respect to the stock prices for other technology companies;
- announcements of technological innovations by us or our competitors;
- new products or the acquisition or loss of significant customers by us or our competitors;
- developments with respect to our copyrights or other proprietary rights or those of our competitors;
- changes in interest rates;
- changes in investors' beliefs as to the appropriate price-earnings ratios for us and our competitors;
- changes in recommendations or financial estimates by securities analysts who track our common stock or the stock of other software companies;
- changes in management;
- sales of common stock by our controlling shareholders, directors and executive officers;
- rumors or dissemination of false or misleading information, particularly through Internet chat rooms, instant messaging, and other rapid-dissemination methods;
- conditions and trends in the software industry generally;
- the announcement of acquisitions or other significant transactions by us or our competitors;
- adoption of new accounting standards affecting the software industry;
- domestic or international terrorism and other factors; and

- the other factors described in these “Risk Factors.”

Fluctuations in the price of our common stock may expose us to the risk of securities class action lawsuits. Although no such lawsuits are currently pending against us and we are not aware that any such lawsuit is threatened to be filed in the future, there is no assurance that we will not be sued based on fluctuations in the price of our common stock. Defending against such lawsuits could result in substantial cost and divert management’s attention and resources. In addition, any settlement or adverse determination of these lawsuits could subject us to significant liabilities.

Our dividend policy is subject to change.

On May 29, 2019, our Board of Directors declared quarterly dividends of \$0.11 per share, payable to our Class A and Class B common stockholders. We currently expect to declare and pay cash dividends at this level on a quarterly basis in the future. However, our dividend policy may be affected by, among other things, our views on business conditions, our financial position, earnings, earnings outlook, capital spending plans and other factors that our Board of Directors considers relevant at that time. Our dividend policy has changed in the past and may change from time to time, and we cannot provide assurance that we will continue to declare dividends at all or in any particular amounts. A change in our dividend policy could have a negative effect on the market price of our common stock.

The price of our common stock may decline due to shares eligible for future sale or actual future sales of substantial amounts of our common stock.

Sales of substantial amounts of our common stock in the public market, or the perception that such sales may occur, could cause the market price of our common stock to decline. As of June 30, 2019, if all of our outstanding Class B common shares were converted into Class A common shares, our current directors and executive officers of the Company as a group would beneficially own approximately 10.85% of all outstanding Class A common shares after giving effect to such conversion. Sales of substantial amounts of our common stock in the public market by these persons, or the perception that such sales may occur, could cause the market price of our common stock to decline and could impair our ability to raise capital through the sale of additional equity securities.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our corporate headquarters are located in an approximately 100,000 square foot office building that we own at 470 East Paces Ferry Road, N.E., Atlanta, Georgia.

We have entered into leases for sales and technology development offices located in various cities in the United States and overseas. We believe our existing facilities are adequate for our current needs and that suitable additional or substitute space will be available as needed on commercially reasonable terms.

Each of our three segments makes use of the property at 470 East Paces Ferry Road and our SCM segment occupies office space that we lease in the United Kingdom, Sweden, Germany, The Netherlands, India, New Zealand and Australia.

ITEM 3. LEGAL PROCEEDINGS

- (a) Many of our installations involve products that are critical to the operations of our customers’ businesses. Any failure in our products could result in a claim for substantial damages against us, regardless of our responsibility for such failure. Although we attempt to contractually limit our liability for damages arising from product failures or negligent acts or omissions, there can be no assurance that the limitations of liability contained in our contracts will be enforceable in all instances. We are not currently a party to any material legal proceedings that would require disclosure under this Item.
- (b) None.

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

Trading Market

Our Class A Common Shares are listed on the NASDAQ Global Select Market under the symbol "AMSWA". As of July 5, 2019, there were 10,680 holders of Class A shares who held their stock either individually or in nominee or "street" names through various brokerage firms, and one holder of Class B Common Shares.

Equity Compensation Plans

The following table discloses information regarding the Company's equity compensation plans as of April 30, 2019:

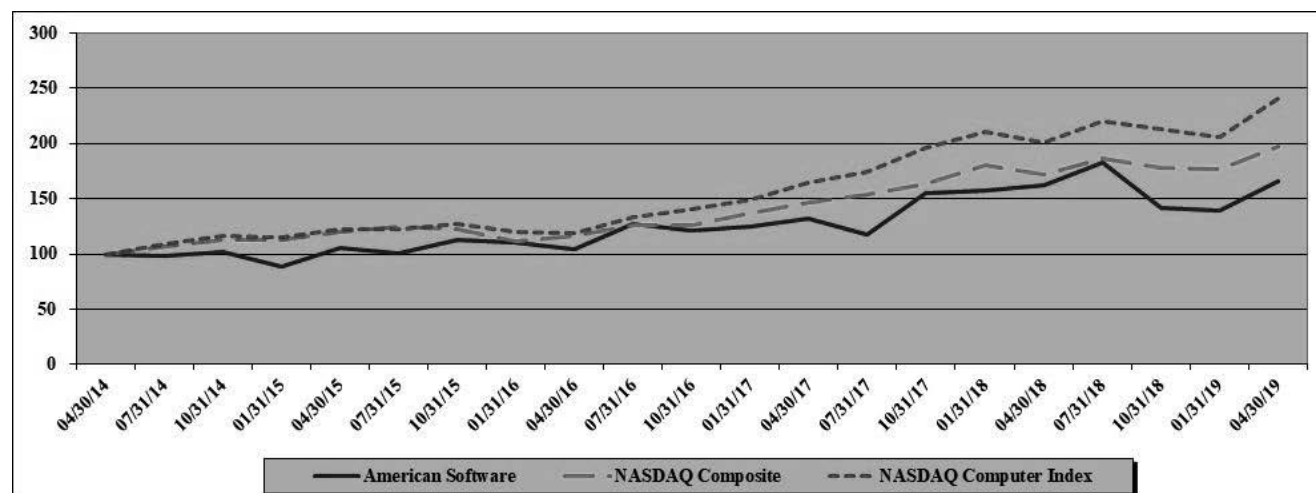
<u>Plan Category</u>	<u>Number of securities to be issued upon exercise of outstanding options, warrants and rights</u>	<u>Weighted-average exercise price of outstanding options, warrants and rights</u>	<u>Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column)</u>
Equity compensation plans approved by security holders	3,983,060	\$ 10.88	87,143

Dividend Policy

Since the third quarter of fiscal 2013, our Board of Directors had declared quarterly dividends of \$0.10 per share. On May 11, 2016, our Board increased the quarterly dividends to \$0.11 per share, payable to our Class A and Class B common stockholders. We currently expect to declare and pay cash dividends at this level on a quarterly basis in the future. The continuation of this policy, and payment of future cash dividends, will be at the sole discretion of the Board of Directors. In exercising this discretion, the Board will consider our profitability, financial condition, cash requirements, future prospects and other relevant factors. Our dividend policy has changed in the past and may change from time to time, and we cannot provide assurance that we will continue to declare dividends at all or in any particular amounts.

Stock Price Performance Graph

The graph below reflects the cumulative stockholder return on the Company's shares compared to the return of the NASDAQ Stock Market – US Companies ("NASDAQ Composite Index") and a peer group index on a quarterly basis. The graph reflects the investment of \$100 on April 30, 2014 in the Company's stock, the NASDAQ Stock Market-US NASDAQ Composite Index and the NASDAQ Computer Index, a published industry peer group index. The NASDAQ Computer Index consists of approximately 320 NASDAQ-listed companies, including computer hardware and software companies that furnish computer programming and data processing services and firms that produce computers, office equipment, and electronic component/accessories. The total cumulative dollar returns shown below represent the value that such investments would have had on April 30, 2019.



	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
American Software(a)	\$ 100	\$ 105	\$ 104	\$ 132	\$ 162	\$ 166
NASDAQ Composite	100	120	116	147	172	197
NASDAQ Computer Index	100	123	119	164	201	241

(a) This series includes dividends paid over the disclosed period.

Purchases of Equity Securities by the Company

The following table summarizes repurchases of our stock in the quarter ended April 30, 2019:

<u>Fiscal Period</u>	<u>Total Number of Shares Purchased</u>	<u>Average Price Paid Per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs</u>	<u>Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs*</u>
February 1, 2019 through February 28, 2019	—	\$ —	—	946,321
March 1, 2019 through March 31, 2019	—	\$ —	—	946,321
April 1, 2019 through April 30, 2019	—	\$ —	—	946,321
Total Fiscal 2019 Fourth Quarter	—	\$ —	—	946,321

* The above share purchase authority was approved by the Board of Directors on August 19, 2002, when the Board approved a resolution authorizing the Company to repurchase up to 2.0 million shares of Class A common stock. This action was announced on August 22, 2002. The authorization has no expiration date.

Transfer Agent

American Stock Transfer & Trust Company LLC
 6201 15th Ave.
 Brooklyn, NY 11219
 Toll free: (800) 937-5449
 Local & international: (718) 921-8124
<http://www.astfinancial.com>

Inquiries regarding stock transfers, lost certificates or address changes should be directed to the above address.

Market Makers

The following firms make a market in the Class A common shares of American Software, Inc:

B. Riley FBR, INC.	Latour Trading LLC
Barclays Capital Inc.	Maxim Group LLC
Bofa Securities, Inc.	Needham & Company, LLC
Citadel Derivatives Group LLC	RBC Capital Markets, LLC
Citadel Securities LLC	Susquehanna Financial Group, LLLP
Collins Stewart LLC	Susquehanna Securities
Cowen and Company, LLC	Two Sigma Securities, LLC
Deutsche Banc Alex Brown	UBS Securities LLC
Goldman Sachs & Co. LLC	VIRTU Americas LLC
IMC Financial Markets	Wolverine Securities, LLC

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The selected consolidated financial data presented below as of and for the years ended April 30, 2019, 2018, 2017, 2016, and 2015 is derived from our audited consolidated financial statements.

Consolidated Statements of Operations Data:

	Years Ended April 30,				
	2019	2018	2017	2016	2015
	(in thousands, except per share data)				
Revenues:					
License fees	\$ 7,126	\$ 15,344	\$ 15,584	\$ 22,043	\$ 16,748
Subscription fees	14,026	8,855	4,381	3,273	1,439
Professional services and other	42,154	44,663	43,932	47,826	45,776
Maintenance	45,400	43,841	42,389	40,747	38,910
Total revenues	108,706	112,703	106,286	113,889	102,873
Cost of revenues:					
License fees	6,430	6,261	6,713	7,552	7,675
Subscription fees	5,759	3,817	3,290	1,528	565
Professional services and other	31,421	30,596	31,374	35,708	33,639
Maintenance	8,356	9,326	9,707	9,441	8,580
Total cost of revenues	51,966	50,000	51,084	54,229	50,459
Gross margin	56,740	62,703	55,202	59,660	52,414
Operating expenses:					
Research and development costs	13,078	11,877	11,889	11,248	11,088
Sales and marketing expense	20,992	20,658	20,287	22,164	18,667
General and administrative expenses	17,006	16,057	14,219	12,449	12,923
Amortization of acquisition-related intangibles	388	580	1,041	272	394
Total operating expenses	51,464	49,172	47,436	46,133	43,072
Operating income	5,276	13,531	7,766	13,527	9,342
Other income, net	2,365	2,184	13,849	1,173	1,060
Earnings before income taxes	7,641	15,715	21,615	14,700	10,402
Income tax expense	838	3,662	6,994	4,458	2,274
Net earnings	\$ 6,803	\$ 12,053	\$ 14,621	\$ 10,242	\$ 8,128
Earnings per common share(a):					
Basic	\$ 0.22	\$ 0.40	\$ 0.50	\$ 0.36	\$ 0.29
Diluted	\$ 0.22	\$ 0.40	\$ 0.49	\$ 0.35	\$ 0.28
Weighted average common shares—Basic	30,950	30,080	29,232	28,727	28,283
Diluted	31,378	30,472	29,567	29,005	28,614
Cash dividends declared	\$ 0.44	\$ 0.44	\$ 0.44	\$ 0.40	\$ 0.40
Consolidated Balance Sheet Data:					
Cash and cash equivalents	\$ 61,288	\$ 52,794	\$ 66,001	\$ 49,004	\$ 44,655
Investments—short and long term	\$ 27,194	\$ 35,014	\$ 23,787	\$ 28,881	\$ 30,740
Working capital	\$ 69,401	\$ 61,402	\$ 66,789	\$ 54,801	\$ 46,340
Total assets	\$ 161,310	\$ 162,965	\$ 148,774	\$ 136,724	\$ 134,266
American Software, Inc. shareholders' equity	\$ 114,607	\$ 112,584	\$ 103,750	\$ 94,894	\$ 92,926

(a) Diluted per share amounts for Class A shares are shown above. Diluted per share for Class B shares under the two-class method are \$0.22, \$0.39, \$0.49, \$0.35, and \$0.29 for the years ended April 30, 2019, 2018, 2017, 2016, and 2015, respectively. See Note 1(s) to the Consolidated Financial Statements.

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

The following discussion and analysis should be read in conjunction with “Item 6. Selected Financial Data” and “Item 8. Financial Statements and Supplementary Data”. This discussion contains forward-looking statements relating to our future financial performance, business strategy, financing plans and other future events that involve uncertainties and risks. You can identify these statements by forward-looking words such as “anticipate,” “intend,” “plan,” “continue,” “could,” “grow,” “may,” “potential,” “predict,” “strive,” “estimate,” “believe,” “expect” and similar expressions that convey uncertainty of future events or outcomes. Any forward-looking statements herein are made pursuant to the safe harbor provision of the Private Securities Litigation Reform Act of 1995. Our actual results could differ materially from the results anticipated by these forward-looking statements as a result of many known and unknown factors that are beyond our ability to control or predict, including but not limited to those discussed above in “Risk Factors” and elsewhere in this report. See also “Special Cautionary Notice Regarding Forward-Looking Statements” at the beginning of “Item 1. Business.”

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

We have based the following discussion and analysis of financial condition and results of operations on our consolidated financial statements, which we have prepared in accordance with U.S. generally accepted accounting principles. The preparation of these consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Note 1 to the Consolidated Financial Statements for the fiscal year ended April 30, 2019, describes the significant accounting policies that we have used in preparing our consolidated financial statements. On an ongoing basis, we evaluate our estimates, including, but not limited to, those related to revenue/collectability, stock-based compensation, income taxes and business combinations. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Our actual results could differ materially from these estimates under different assumptions or conditions.

We believe the critical accounting policies listed below affect significant judgments and estimates used in the preparation of the financial statements.

Revenue Recognition. The most critical judgments required in applying Topic 606 and our revenue recognition policy relate to the determination of distinct performance obligations and the evaluation of the standalone selling price (SSP) for each performance obligation.

Many of our customer contracts include multiple performance obligations. Judgment is required in determining whether each performance obligation within a customer contract is distinct. The Company’s products and services generally do not require a significant amount of integration or interdependency. Therefore, multiple products and services contained within a customer contract are generally considered to be distinct and are not combined for revenue recognition purposes. We allocate the transaction price for each customer contract to each performance obligation based on the relative SSP (the determination of SSP is discussed below) for each performance obligation within each contract. We recognize the amount of transaction price allocated to each performance obligation within a customer contract as revenue as each performance obligation is delivered.

We use judgment in determining the SSP for products and services. For substantially all performance obligations except on-premise licenses, we are able to establish the SSP based on the observable prices of products or services sold separately in comparable circumstances to similar customers. We typically establish an SSP range for our products and services, which is reassessed on a periodic basis or when facts and circumstances change. SSP for our products and services can evolve over time due to changes in our pricing practices that are influenced by intense competition, changes in demand for our products and services, and economic factors, among others. Our on-premise licenses have not historically been sold on a standalone basis, as substantially all customers elect to purchase license support contracts at the time of a on-premise license purchase. License support contracts are generally priced as a percentage of the net fees paid by the customer to access the license. We are unable to establish the SSP for our on-premise licenses based on observable prices given the same products are sold for a broad range of amounts (that is, the selling price is highly variable) and a representative SSP is not discernible from past transactions or other observable evidence. As a result, the SSP for an on-premise license included in a contract with multiple performance obligations is determined by applying a residual approach whereby all other performance obligations within a contract are first allocated a portion of the transaction price based upon their respective SSPs, with any residual amount of transaction price allocated to on-premise license revenues.

Income Taxes. We provide for the effect of income taxes on our financial position and results of operations in accordance with the Income Tax Topic of the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC"). Under this accounting guidance, income tax expense is recognized for the amount of income taxes payable or refundable for the current year

and for the change in net deferred tax assets or liabilities resulting from events that are recorded for financial reporting purposes in a different reporting period than recorded in the tax return. Management must make significant assumptions, judgments and estimates to determine our current provision for income taxes and also our deferred tax assets and liabilities and any valuation allowance to be recorded against our net deferred tax asset. Our judgments, assumptions and estimates relative to the current provision for income tax take into account current tax laws, our interpretation of current tax laws, allowable deductions, tax planning strategies, projected tax credits and possible outcomes of current and future audits conducted by foreign and domestic tax authorities. Changes in tax laws or our interpretation of tax laws and the resolution of current and future tax audits could significantly impact the amounts provided for income taxes in our financial position and results of operations. Our assumptions, judgments and estimates relative to the value of our deferred tax asset take into account our expectations of the amount and category of future taxable income. Actual operating results and the underlying amount and category of income in future years, which could significantly increase tax expense, could render inaccurate our current assumptions, judgments and estimates of recoverable net deferred taxes.

Business Combinations and Intangible Assets Including Goodwill. We account for business combinations using the acquisition method of accounting and accordingly, the identifiable assets acquired and liabilities assumed are recorded based upon management's estimates of current fair values as of the acquisition date. The estimation process includes analyses based on income and market approaches. Goodwill represents the excess purchase price over the fair value of net assets, including the amount assigned to identifiable intangible assets. The goodwill generated is due in part to the synergies that are not included in the fair value of identifiable intangible assets. Goodwill recorded in an acquisition is assigned to applicable reporting units based on expected revenues. Identifiable intangible assets with finite lives are amortized over their useful lives. Amortization of current technology is recorded in cost of revenues-license and amortization of all other intangible assets is recorded in amortization of acquisition-related intangibles. Acquisition-related costs, including advisory, legal, accounting, valuation and other costs, are expensed in general and administrative expenses in the periods in which the costs are incurred. The results of operations of acquired businesses are included in the consolidated financial statements from the acquisition date.

RESULTS OF OPERATIONS

The following table sets forth certain revenue and expense items as a percentage of total revenues for the three years ended April 30, 2019, 2018, and 2017 and the percentage increases and decreases in those items for the years ended April 30, 2019 and 2018:

	Percentage of Total Revenues			Pct. Change in Dollars	Pct. Change in Dollars
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
Revenues:					
License	7%	14%	15%	(54)%	(2)%
Subscription fees	13	7	4	58	102
Professional services and other	39	40	41	(6)	2
Maintenance	41	39	40	4	3
Total revenues	100	100	100	(4)	6
Cost of revenues:					
License	6	6	7	13	(7)
Subscription fees	5	3	3	34	16
Professional services and other	29	27	29	3	(2)
Maintenance	8	8	9	(10)	(4)
Total cost of revenues	48	44	48	4	(2)
Gross margin	52	56	52	14	14
Research and development	12	11	11	10	—
Sales and marketing	19	18	19	2	2
General and administrative	16	14	13	6	13
Amortization of acquisition-related intangibles	—	1	1	(33)	(44)
Total operating expenses	47	44	44	4	4
Operating income	5	12	8	(61)	74
Other income:					
Interest income	2	1	1	33	25
Other, net	—	1	12	(55)	(95)
Earnings before income taxes	7	14	21	(51)	(27)
Income tax expense	1	3	7	(77)	(48)
Net earnings	6%	11%	14%	(44)%	(18)%

Economic Overview and Significant Trends in Our Business

Corporate capital spending trends and commitments are the primary determinants of the size of the market for business software. Corporate capital spending is, in turn, a function of general economic conditions in the U.S. and abroad and in particular may be affected by conditions in U.S. and global credit markets. In recent years, the weakness in the overall global economy and the U.S. economy in particular has resulted in reduced expenditures in the business software market.

In April 2019, the International Monetary Fund (“IMF”) provided an update to the World Economic Outlook for the 2019 and 2020 world economic growth forecast. The update noted that, “*After strong growth in 2017 and early 2018, global economic activity slowed notably in the second half of last year, reflecting a confluence of factors affecting major economies. China’s growth declined following a combination of needed regulatory tightening to rein in shadow banking and an increase in trade tensions with the United States. The euro area economy lost more momentum than expected as consumer and business confidence weakened and car production in Germany was disrupted by the introduction of new emission standards; investment dropped in Italy as sovereign spreads widened; and external demand, especially from emerging Asia, softened. As a result of these developments, global growth is now projected to slow from 3.6 percent in 2018 to 3.3 percent in 2019, before returning to 3.6 percent in 2020. Growth for 2018 was revised down by 0.1 percentage point relative to the October 2018 World Economic Outlook (WEO), reflecting weakness in the second half of the year; and the forecasts for 2019 and 2020 are now marked down by 0.4 percentage point and 0.1 percentage point, respectively.*”

For fiscal 2020, we expect the global economy to improve when compared to the prior year, which could result in an improved selling environment. Overall information technology spending is improving as a result of the current global economic environment. We believe information technology spending will incrementally improve over the long term as increased global competition forces companies to improve productivity by upgrading their technology systems. Although this improvement could slow or regress at any

time, due in part to concerns in global capital markets and general economic conditions, we believe that our organizational and financial structure will enable us to take advantage of any sustained economic rebound. Customers continue to take long periods to evaluate discretionary software purchases.

We believe the improvement in economic conditions may be driving some businesses to invest in achieving more process and efficiency enhancements in their operations and to invest in solutions that improve operating margins, rather than make large infrastructure-type technology purchases. If this trend continues, we believe it may tend to favor solutions such as our Logility supply chain solutions, which are designed to provide a more rapid return on investment and are targeted at some of the largest profit drivers in a customer's business. While the recent low growth environment has had a particularly adverse impact on the weaker companies in our target markets, we believe a large percentage of our customers are seeking to make investments to strengthen their operations, and some are taking advantage of current economic conditions to gain market share.

Business Opportunities and Risks

We currently view the following factors as the primary opportunities and risks associated with our business:

- *Dependence on Capital Spending Patterns.* There is risk associated with our dependence on the capital spending patterns of U.S. and international businesses, which in turn are functions of economic trends and conditions over which we have no control.
- *Acquisition Opportunities.* There are opportunities for selective acquisitions or investments to expand our sales distribution channels and/or broaden our product offering by providing additional solutions for our target markets.
- *Acquisition Risks.* There are risks associated with acquisitions of complementary companies, products and technologies, including the risks that we will not achieve the financial and strategic goals that we contemplate at the time of the transaction. More specifically, in any acquisition we will face risks and challenges associated with the uncertain value of the acquired business or assets, the difficulty of assimilating operations and personnel, integrating acquired technologies and products and maintaining the loyalty of the customers of the acquired business.
- *Competitive Technologies.* There is a risk that our competitors may develop technologies that are substantially equivalent or superior to our technology.
- *Competition in General.* There are risks inherent in the market for business application software and related services, which has been and continues to be intensely competitive; for example, some of our competitors may become more aggressive with their prices and/or payment terms, which may adversely affect our profit margins.

For more information, please see "Risk Factors" in Item 1A. above.

Recent Accounting Pronouncements

For information with respect to recent accounting pronouncements, if any, and the impact of these pronouncements on our consolidated financial statements, if any, see Note 1(n) of Notes to Consolidated Financial Statements included elsewhere in this Form 10-K.

Market Conditions by Operating Segment

We operate and manage our business in three segments based on software and services provided in three key product markets: (1) SCM, which provides collaborative supply chain solutions to streamline and optimize the production, distribution and management of products between trading partners; (2) IT Consulting, which consists of IT staffing and consulting services; and (3) Other, which consists of (i) American Software ERP, a provider of purchasing and materials management, customer order processing, financial, human resources, and manufacturing functions, and (ii) unallocated corporate overhead expenses. The SCM segment represents the business of Logility, DMI, Halo and NGC.

Our SCM segment experienced a 6% decrease in revenues during fiscal 2019 when compared to fiscal 2018, primarily due to a 54% decrease in license fees and a 16% decrease in professional services and other revenues partially offset by a 58% increase in subscription fees and a 4% increase in maintenance revenues. Our SCM segment experienced a 9% increase in revenues during fiscal 2018 when compared to fiscal 2017, primarily due to a 102% increase in subscription fees, an 8% increase in professional services and other revenues and a 4% increase in maintenance revenue partially offset by a 1% decrease in license fees.

Our IT Consulting segment experienced an approximately 8% increase in revenues in fiscal 2019 when compared to fiscal 2018 and a decrease in revenues of approximately 6% in fiscal 2018 when compared to fiscal 2017, due primarily to fluctuations in IT staffing work at our largest customer and in fiscal year 2018 a decrease in customer project work. As companies have moved to cut costs and limit IT budgets, they have utilized more outsourcing services, which tend to be more cost-effective for them. In the past, this trend has resulted in increased business for this segment. However, there is a countervailing trend to outsource IT to international markets that historically have been more price competitive than domestic sources like ourselves. Our largest consulting customer comprised 47% of our IT Consulting revenues in fiscal 2019, 45% in fiscal 2018 and 42% in fiscal 2017. The loss of this customer would negatively and materially affect our IT Consulting business.

The Other segment revenues decreased 9% in fiscal 2019 when compared to fiscal 2018, primarily due to a 19% decrease in license fees and a 14% decrease in maintenance revenues, partially offset by a 3% increase in professional services and other revenues. The Other segment revenues increased 1% in fiscal 2018 when compared to fiscal 2017, primarily due to a 15% increase in professional services and other revenues that was partially offset by a 12% decrease in license fees and a 4% decrease in maintenance revenues.

REVENUES

	Years Ended April 30,							
	2019	2018	2017	% Change		% of Total Revenues		
				2019 to 2018	2018 to 2017	2019	2018	2017
	(in thousands)							
License	\$ 7,126	\$ 15,344	\$ 15,584	(54)%	(2)%	6%	13%	15%
Subscription fees	14,026	8,855	4,381	58 %	102 %	13%	8%	4%
Professional service and other	42,154	44,663	43,932	(6)%	2 %	39%	40%	41%
Maintenance	45,400	43,841	42,389	4 %	3 %	42%	39%	40%
Total revenues	\$ 108,706	\$ 112,703	\$ 106,286	(4)%	6 %	100%	100%	100%

For the year ended April 30, 2019, the 4% decrease in total revenues was attributable primarily to a 54% decrease in license revenue and a 6% decrease in professional services and other revenues offset by a 58% increase in subscription fee and a 4% increase in maintenance revenues.

For the year ended April 30, 2018, the 6% increase in total revenues was attributable primarily to a 102% increase in subscription fees, a 3% increase in maintenance and a 2% increase in professional services and other revenues partially offset by a 2% decrease in license revenues.

Due to intensely competitive markets, we discount license fees from our published list price due to pricing pressure in our industry. Numerous factors contribute to the amount of the discounts provided, such as previous customer purchases, the number of customer sites utilizing the software, the number of modules purchased and the number of users, the type of platform deployment, as well as the overall size of the contract. While all these factors affect the discount amount of a particular contract, the overall percentage discount has not materially changed in the recent reported fiscal periods.

The change in our revenues from period to period is primarily due to the volume of products and related services sold in any period and the amounts of products or modules purchased with each sale.

International revenues represented approximately 20% of total revenues for the year ended April 30, 2019, 19% of total revenues for the year ended April 30, 2018, and 18% for the year ended April 30, 2017. Our international revenues may fluctuate substantially from period to period primarily because we derive these revenues from a relatively small number of customers.

License Revenues

	Years Ended April 30,				
	2019	2018	2017	% Change	
				2019 to 2018	2018 to 2017
(in thousands)					
Supply Chain Management	\$ 6,992	\$ 15,177	\$ 15,394	(54)%	(1)%
Other	134	167	190	(20)%	(12)%
Total license revenues	\$ 7,126	\$ 15,344	\$ 15,584	(54)%	(2)%

For the year ended April 30, 2019, license fee revenues decreased by 54% when compared to the previous year due primarily to lower overall business information technology spending. SCM experienced a 54% decrease in license fees primarily due to the increased sales of our products on our Cloud Services platform that require revenue to be deferred over the life of the contracted period, which is typically one to three years. Our Other business segment experienced a 20% decrease in license fees for the year ended April 30, 2019 when compared to the same period in the prior year due to the timing of selling into the installed customer base. SCM constituted 98%, 99% and 99% of our total license fee revenues for the years ended April 30, 2019, 2018 and 2017, respectively.

For the year ended April 30, 2018, license fee revenues decreased by 2% when compared to the previous year due primarily to lower overall business information technology spending. SCM experienced a 1% decrease in license fees primarily due to the increased sales of our products on our Cloud Services platform that require revenue to be deferred over the life of the contracted period, which is typically one to three years. Our Other business segment experienced a 12% decrease in license fees for the year ended April 30, 2018 when compared to the same period in the prior year due to the timing of selling into the installed customer base.

The direct sales channel provided approximately 84% of license fee revenues for the year ended April 30, 2019, compared to approximately 85% in fiscal 2018 and 77% in fiscal 2017. The decrease in direct license fees from fiscal 2018 to fiscal 2019 was largely the result of increased sales of our products on our Cloud Services platform that require revenue to be deferred over the life of the contracted period. The decrease in indirect license fees from fiscal 2017 to fiscal 2018 was largely due to lower overall business information technology spending.

For the year ended April 30, 2019, our margins after commissions on direct sales were approximately 87%, and our margins after commissions on indirect sales were approximately 55%. For the year ended April 30, 2018, our margins after commissions on direct sales were approximately 84%, and our margins after commissions on indirect sales were approximately 36%. For the year ended April 30, 2017, our margins after commissions on direct sales were approximately 85%, and our margins after commissions on indirect sales were approximately 46%. The margins after commissions for direct were relatively consistent in a range of 84% to 87%, while the range for indirect sales had a wider spread of 36% to 55%. The indirect channel margins for the fiscal year ended April 30, 2018 decreased when compared to the same periods in the prior year due to the mix of value-added reseller ("VAR") commission rates. DMI is the source of the bulk of our indirect sales and the commission percentage varies based on whether the sale is domestic or international.

Subscription Fees

	Years Ended April 30,				
	2019	2018	2017	% Change	
				2019 to 2018	2018 to 2017
(in thousands)					
Supply Chain Management	\$ 14,026	\$ 8,855	\$ 4,381	58%	102%
Total subscription fees revenue	\$ 14,026	\$ 8,855	\$ 4,381	58%	102%

For the year ended April 30, 2019, Cloud Services Annual Contract Value ("ACV") increased approximately 36% to \$17.3 million compared to \$12.7 million in the same period of the prior year due to increased sales of our products on our Cloud Services platform that require revenue to be deferred over the life of the contracted period, which is typically one to three years. ACV is a forward-looking operating measure used by management to better understand Cloud Services (SaaS and other related cloud services) revenue trends within our business, as it reflects our current estimate of revenue to be generated under existing client contracts in the forward 12-month period.

Professional Services and Other Revenues

	Years Ended April 30,				
	2019	2018	2017	% Change	
				2019 to 2018	2018 to 2017
	(in thousands)				
Supply Chain Management	\$ 21,190	\$ 25,272	\$ 23,492	(16)%	8 %
IT Consulting	20,007	18,460	19,633	8 %	(6)%
Other	957	931	807	3 %	15 %
Total professional services and other revenues	<u>\$ 42,154</u>	<u>\$ 44,663</u>	<u>\$ 43,932</u>	(6)%	2 %

The 6% decrease in total professional services and other revenues for the year ended April 30, 2019 was due to a 16% decrease in professional services and other revenues from our SCM segment due primarily to the timing of implementation project work. This decrease was partially offset by an 8% increase in our IT consulting segment and a 3% increase in our Other segment due to utilization from project implementation services and services revenues.

The 2% increase in total professional services and other revenues for the year ended April 30, 2018 was due to a 15% and 8% increase in professional services and other revenues from our Other and SCM segments, respectively, due to improved customer retention and additional license sales. This increase was partially offset by a 6% decrease in our IT Consulting segment due to the completion in the first half of fiscal 2017 of an IT project from one of our larger customers.

In our software segments, we have observed that there is a tendency for professional services and other revenues to lag changes in license revenues by one to three quarters, as new licenses in one quarter often involve implementation and consulting services in subsequent quarters, for which we recognize revenues only as we perform those services.

Maintenance Revenues

	Years Ended April 30,				
	2019	2018	2017	% Change	
				2019 to 2018	2018 to 2017
	(in thousands)				
Supply Chain Management	\$ 44,088	\$ 42,309	\$ 40,790	4 %	4 %
Other	1,312	1,532	1,599	(14)%	(4)%
Total maintenance revenues	<u>\$ 45,400</u>	<u>\$ 43,841</u>	<u>\$ 42,389</u>	4 %	3 %

The 4% increase in total maintenance revenues for the year ended April 30, 2019 was due to a 4% increase in maintenance revenues from our SCM segment, increased revenue from our recent Halo acquisition and additional license sales. This increase was partially offset by a 14% decrease in our Other segment due to fewer customer renewals and lower software license sales.

The 3% increase in total maintenance revenues for the year ended April 30, 2018 was due to a 4% increase in maintenance revenues from our SCM segment due to improved customer retention and additional license sales. This increase was partially offset by a 4% decrease in our Other segment due to fewer customer renewals and lower software license sales.

The SCM segment's maintenance revenues constituted 97% of total maintenance revenues for the years ended April 30, 2019 and 2018 and 96% for the year ended April 30, 2017. Typically, our maintenance revenues have had a direct relationship to current and historic license fee revenues, since new licenses are the potential source of new maintenance customers.

GROSS MARGIN

The following table provides both dollar amounts and percentage measures of gross margin:

	Years Ended April 30,					
	2019		2018		2017	
	(in thousands)					
Gross margin on license fees	\$ 696	10%	\$ 9,083	59%	\$ 8,871	57%
Gross margin on subscriptions fees	8,267	59%	5,038	57%	1,091	25%
Gross margin on professional services and other	10,733	25%	14,067	31%	12,558	29%
Gross margin on maintenance	37,044	82%	34,515	79%	32,682	77%
Total gross margin	<u>\$ 56,740</u>	<u>52%</u>	<u>\$ 62,703</u>	<u>56%</u>	<u>\$ 55,202</u>	<u>52%</u>

The total gross margin percentage for the year ended April 30, 2019 decreased to 52% in fiscal 2019 when compared to the same period in the prior year, due to the decrease in gross margin percentage for license fees and professional services and other gross margins, partially offset by an increase in subscription fees and maintenance gross margins. The total gross margin percentage for the year ended April 30, 2018 increased to 56% when compared to the same period in the prior year, due to the increase in gross margin percentages across all lines of business.

Gross Margin on License Fees

The decrease in license fee gross margin percentage for the year ended April 30, 2019 when compared to fiscal 2018 was primarily due to lower license fee revenue and higher amortization of intangibles expense. This was partially offset by lower capitalized software amortization expense and agent commission expense. License fee gross margin percentage tends to be directly related to the level of license fee revenues due to the relatively fixed cost of computer software amortization expense, amortization of acquired software and the sales mix between our direct and indirect channels.

The increase in license fee gross margin percentage for the year ended April 30, 2018 when compared to fiscal 2017 was primarily due to a decrease in amortization of capitalize software and agent commissions in fiscal 2018.

License fee gross margin percentage tends to be directly related to the level of license fee revenues due to the relatively fixed cost of computer software amortization expense, amortization of acquired software and the sales mix between our direct and indirect channels.

Gross Margin on Subscription Fees

For the year ended April 30, 2019, our gross margin percentage on subscription fees increased from 57% in fiscal 2018 to 59% primarily due to higher gross margins in our SCM segment services gross margin primarily due to an increase in our Subscription Service revenue which has higher margins.

For the year ended April 30, 2018, our gross margin percentage on subscription fees increased from 25% in fiscal 2017 to 57% entirely due to higher gross margins in our SCM segment, which increased from 25% in fiscal 2017 to 57% in fiscal 2018 due to increased sales of our products on our Cloud Services platform that require revenue to be deferred over the life of the contracted period, which is typically one to three years and a lower relative increase in subscription expenses to service the incremental subscription fee revenue.

Gross Margin on Professional Services and Other

For the year ended April 30, 2019, our gross margin percentage on professional services and other decreased from 31% in fiscal 2018 to 25% primarily due to lower gross margins in our SCM segment which decreased from 39% in fiscal 2018 to 28% due to lower revenues and lower billing utilization. Our IT Consulting segment professional services and other revenue gross margin increased from 21% in fiscal 2018 to 22% in fiscal 2019 due to an increase in project related billing. Our other segment increased from 44% in fiscal 2018 to 47% in fiscal 2019 due to improved billing utilization rates.

For the year ended April 30, 2018, our gross margin percentage on professional services and other increased from 29% in fiscal 2017 to 31% due to higher gross margins in our SCM segment of 37% from 39% in fiscal 2018 and fiscal 2017, respectively. Our IT Consulting segment services gross margin increased from 18% in fiscal 2017 to 21%. Our Other segment increased from 33% in fiscal 2017 to 44% in fiscal 2018 due to improved billing utilization rates.

As discussed above, our IT Consulting segment typically has lower margins when compared to the Other segments that have higher margin implementation service revenue. The IT Consulting segment was 47%, 41% and 45% of the Company's professional services and other revenues in fiscal 2019, 2018 and 2017, respectively. Our SCM segment was 50%, 57% and 53% of the Company's professional services and other revenues in fiscal 2019, 2018 and 2017, respectively. Our Other segment was 3%, 2% and 2% of the Company's professional services and other revenues in fiscal 2019, 2018 and 2017, respectively.

Gross Margin on Maintenance

Maintenance gross margin increased to 82% in fiscal 2019 from 79% in fiscal 2018 due to an increase revenue from our Halo acquisition in the third quarter of fiscal 2018 and costs containment efforts. The primary cost component is maintenance staffing, which is relatively inelastic in the short term.

EXPENSES

	Years Ended April 30,					
				% of Revenues		
	2019	2018	2017	2019	2018	2017
	(in thousands)					
Research and development	\$ 13,078	\$ 11,877	\$ 11,889	12%	11%	11%
Sales and marketing	20,992	20,658	20,287	19%	18%	19%
General and administrative	17,006	16,057	14,219	16%	14%	13%
Amortization of acquisition-related intangible assets	388	580	1,041	—%	1%	1%
Other income, net	2,365	2,184	13,849	2%	2%	13%
Income tax expense	838	3,662	6,994	1%	3%	7%

Research and Development

Gross product research and development costs include all non-capitalized and capitalized software development costs. A breakdown of the research and development costs is as follows:

	Years Ended April 30,				
	2019	Percent Change	2018	Percent Change	2017
Total capitalized computer software development costs	\$ 5,961	24%	\$ 4,804	29 %	\$ 3,724
Percentage of gross product research and development costs	31%		29%		24%
Total research and development expense	13,078	10%	11,877	— %	11,889
Percentage of total revenues	12%		11%		11%
Total research and development expense and capitalized computer software development costs	\$ 19,039	14%	\$ 16,681	7 %	\$ 15,613
Percentage of total revenues	18%		15%		15%
Total amortization of capitalized computer software development costs*	\$ 4,627	25%	\$ 3,690	(13)%	\$ 4,250

* Included in cost of license fees and cost of subscription fees

For the year ended April 30, 2019, gross product research and development costs increased by 14% primarily due to increased headcount from additional third-party contractors and the Halo acquisition. Capitalized software development costs increased in fiscal 2019 compared to fiscal 2018 due to the timing of project work. Amortization of capitalized software development increased 25% in fiscal 2019 when compared to fiscal 2018 due to the timing of project releases.

For the year ended April 30, 2018, gross product research and development costs increased by 7% primarily due to increased headcount from the Halo acquisition and additional hiring. Capitalized software development costs increased in fiscal 2018 compared to fiscal 2017 due to the timing of project work. Amortization of capitalized software development decreased 13% in fiscal 2018 when compared to fiscal 2017 due to the timing of project work.

Sales and Marketing

In the year ended April 30, 2019, the slight uptick in sales and marketing expenses compared to fiscal 2018 was due primarily to an increase in costs related to the Halo acquisition and an increase in marketing spend which was partially offset by lower sales commissions. In the year ended April 30, 2018, the increase in sales and marketing expenses compared to fiscal 2017 was due primarily to a higher headcount and higher sales commissions.

General and Administrative

For the year ended April 30, 2019, the increase in general and administrative expenses compared to fiscal 2018 was primarily due to overhead costs related to the Halo acquisition and an increase in depreciation from office improvements partially offset by lower variable compensation.

For the year ended April 30, 2018, the increase in general and administrative expenses compared to fiscal 2017 was primarily due to an increase in the overhead costs related to the Halo acquisition and an increase in variable compensation expense.

The total number of employees was 424 on April 30, 2019, 462 on April 30, 2018 and 372 on April 30, 2017.

Amortization of Acquisition-related Intangible Assets

For the year ended April 30, 2019, we recorded \$2.4 million in intangible amortization expense, of which \$0.4 million is included in operating expenses and \$2.0 million is included in cost of license fees.

For the year ended April 30, 2018, we recorded \$1.9 million in intangible amortization expense, of which \$0.6 million is included in operating expenses and \$1.3 million is included in cost of license fees.

Operating Income/(Loss)

	Years Ended April 30,			% Change	
	2019	2018	2017	2019 to 2018	2018 to 2017
		(in thousands)			
Supply Chain Management	\$ 15,967	\$ 19,580	\$ 13,103	(18)%	49%
IT Consulting	964	985	890	(2)%	11%
Other*	(11,655)	(7,034)	(6,227)	66 %	13%
Total Operating Income	\$ 5,276	\$ 13,531	\$ 7,766	(61)%	74%

* Includes certain unallocated expenses.

Our SCM segment operating income decreased by 18% in fiscal 2019 compared to fiscal 2018 primarily due to a 6% decrease in revenues. Our SCM segment operating income increased by 49% in fiscal 2018 compared to fiscal 2017 primarily due to a 9% increase in revenues and an increase in gross margins related to an increase in Cloud Services revenue. This was partially offset by the increased costs associated with the Halo acquisition.

Our IT Consulting segment operating income decreased 2% in fiscal 2019 compared to fiscal 2018 primarily due to an increase in sales and marketing costs. Our IT Consulting segment operating income increased 11% in fiscal 2018 compared to fiscal 2017 primarily due to an increase in higher margin billable project services.

The increase in the Other segment operating loss in fiscal 2019 when compared to fiscal 2018 was due primarily to the 9% decrease in revenues in fiscal 2019. The increase in the Other segment operating loss in fiscal 2018 when compared to fiscal 2017 was due primarily to an increase in corporate variable compensation.

Other Income

Other income was approximately \$2.4 million in the year ended April 30, 2019 compared to \$2.2 million in fiscal 2018. The increase was primarily due higher interest income of \$1.8 million in fiscal 2019 compared to \$1.3 million in fiscal 2018. This increase was partially offset by higher exchange rate losses of approximately \$486,000 compared to \$16,000 for the same period last year.

Other income is comprised of net interest and dividend income, rental income net of related depreciation expenses, exchange rate gains and losses, realized and unrealized gains and losses from investments and gains from the sales of real estate. Other income was approximately \$2.2 million in the year ended April 30, 2018 compared to \$13.8 million in fiscal 2017. The decrease was primarily due to the sale of real estate for \$11.8 million in the fourth quarter of fiscal 2017 and lower rental income from the leases on our Atlanta property of \$357,000 in fiscal 2018 compared to \$774,000 in fiscal 2017. This decrease was partially offset by higher interest income of \$1,575,000 in fiscal 2018 compared to \$1,257,000 in fiscal 2017 and lower exchange rate losses of approximately \$16,000 compared to \$285,000 for the same period last year.

For the years ended April 30, 2019 and 2018, our investments generated an annualized yield of approximately 1.32% and 1.36%, respectively.

Income Taxes

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act (the “Act”), which significantly changed U.S. tax law. The Act lowered our U.S. statutory federal income tax rate from 35% to 21% effective January 1, 2018. For fiscal year 2018, our blended U.S. federal statutory tax rate was 30.3%. This is the result of using the tax rate of 35% for the first eight months of fiscal year 2018 and the reduced tax rate of 21% for the final four months of fiscal year 2018. During the year ended April 30, 2018, we recorded a \$1.2 million benefit from the impact of changes in the tax rate, primarily on deferred tax assets and liabilities, which was included in income tax expense on our consolidated statement of operations and deferred income taxes on our consolidated balance sheet. We remeasured our deferred taxes to reflect the reduced rate that will apply when these deferred taxes are settled or realized in future periods. To calculate the remeasurement of deferred taxes, we estimated when the existing deferred taxes will be settled or realized.

Operating Pattern

We experience an irregular pattern of quarterly and annual operating results, caused primarily by fluctuations in both the number and size of software license contracts received and delivered from quarter to quarter and our ability to recognize revenues in that quarter and annually in accordance with our revenue recognition policies. We expect this pattern to continue.

LIQUIDITY AND CAPITAL RESOURCES

Sources and Uses of Cash

We have historically funded, and continue to fund, our operations and capital expenditures primarily with cash generated from operating activities. The changes in net cash that our operating activities provide generally reflect the changes in net earnings and non-cash operating items plus the effect of changes in operating assets and liabilities, such as investment trading securities, trade accounts receivable, trade accounts payable, accrued expenses and deferred revenue. We have no debt obligations or off-balance sheet financing arrangements, and therefore we used no cash for debt service purposes.

The following tables provide information about our cash flows and liquidity positions as of and for the fiscal years ended April 30, 2019, 2018 and 2017. You should read these tables and the discussion that follows in conjunction with our consolidated statements of cash flows contained in Item 8 of this report.

	Years ended April 30,		
	2019	2018	2017
		(in thousands)	
Net cash provided by operating activities	\$ 23,930	\$ 6,754	\$ 19,780
Net cash (used in) provided by investing activities	(7,213)	(15,382)	4,238
Net cash used in financing activities	(8,223)	(4,579)	(7,021)
Net change in cash and cash equivalents	\$ 8,494	\$ (13,207)	\$ 16,997

The increase in cash provided by operating activities in fiscal 2019 compared to fiscal 2018 was due primarily to: (1) an increase in the purchases of trading securities due to timing, (2) an increase in the net proceeds from sales and maturities of trading securities due to timing of purchases and maturity dates, (3) a decrease in accounts receivable in fiscal 2019 when compared to an increase in fiscal 2018 due to timing of sales and billing, (4) a decrease in prepaid expenses and other assets in fiscal 2019 compared to the

increase in fiscal 2018 due to timing of purchases, (5) higher depreciation and amortization expense due to timing of closing capitalized software projects and office renovations, and (6) a higher stock-based compensation expense in fiscal 2019 due to an increase in options granted.

These factors were partially offset by: (1) a decrease in net earnings, (2) a decrease in deferred revenues in fiscal 2019 when compared to fiscal 2018 primarily due to the timing of cloud and maintenance revenue recognition, (3) a decrease in accounts payable and other liabilities in fiscal 2019 when compared to an increase in fiscal 2018 due primarily to timing and the amount of sales commissions, bonuses and tax liabilities, (4) a decrease in deferred income taxes in fiscal 2019 compared to fiscal 2018 due to timing, (5) higher gains on investments due to timing of sales of investments, and (6) gain on sale of fixed assets.

The decrease in cash used in investing activities in fiscal 2019 compared to cash used in investing activities in fiscal 2018 was due to: (1) the Halo acquisition in fiscal 2018 and (2) lower purchases of equipment. This was partially offset by an increase in capitalized software development costs due to the timing of R&D efforts.

The increase in cash used in financing activities in fiscal 2019 when compared to fiscal 2018 was due primarily to: (1) a decrease in proceeds from exercise of stock options and (2) an increase in cash dividends paid on common stock in fiscal 2019 due to an increase in the shares outstanding.

The following table provides information regarding the changes in our total cash and investments position:

	As of April 30,	
	2019	2018
	(in thousands)	
Cash and cash equivalents	\$ 61,288	\$ 52,794
Investments	27,194	35,014
Total cash and investments	<u>\$ 88,482</u>	<u>\$ 87,808</u>
Net increase (decrease) in total cash and investments	<u>\$ 674</u>	<u>\$ (1,980)</u>

The following table provides information regarding our known contractual obligations as of April 30, 2019 (in thousands): (See Notes to Consolidated Financial Statements—Note 8)

Contractual Obligations	Payments due by Period				
	Total	1 year	1-3 years	3-5 years	More than 5 years
Operating Leases	\$ 3,110	\$ 847	\$ 1,496	\$ 750	\$ 17

As a result of the positive cash flows from operations our business has generated in recent periods, and because as of April 30, 2019, we had \$88.5 million in cash and cash equivalents and investments with no debt, we believe that our sources of liquidity and capital resources will be sufficient to satisfy our presently anticipated requirements for working capital, capital expenditures and other corporate needs during at least the next twelve months. However, at some future date we may need to seek additional sources of capital to meet our requirements. If such need arises, we may be required to raise additional funds through equity or debt financing. We currently do not have a bank line of credit. We can provide no assurance that bank lines of credit or other financing will be available on terms acceptable to us. If available, such financing may result in dilution to our shareholders or higher interest expense.

Days Sales Outstanding ("DSO") in accounts receivable were 70 and 68 days as of April 30, 2019 and April 30, 2018, respectively. Our current ratio on April 30, 2019 was 2.6 to 1, compared to 2.3 to 1 on April 30, 2018. DSO can fluctuate significantly on a quarterly basis due to a number of factors including the percentage of total revenues that comes from software license sales (which typically have installment payment terms), seasonality, shifts in customer buying patterns, the timing of customer payments and annual SaaS and maintenance renewals, lengthened contractual payment terms in response to competitive pressures, the underlying mix of products and services, and the geographic concentration of revenues.

On August 19, 2002, our Board of Directors approved a resolution authorizing the repurchase of up to 2.0 million shares of our Class A common stock. These repurchases have been and will be made through open market purchases at prevailing market prices. The timing of any repurchases will depend upon market conditions, the market price of our common stock and management's assessment of our liquidity and cash flow needs. For this repurchase plan, through April 30, 2019, we have repurchased 1,053,679 shares of common stock at a cost of approximately \$6.2 million. Under all repurchase plans as of April 30, 2019, we have repurchased 4,588,632 shares of common stock at a cost of approximately \$25.6 million.

Off-Balance Sheet Arrangements

We are not a party to any off-balance sheet arrangements that have, or are reasonably likely to have, a material current or future effect on our financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

See Item 5 of this report, under the caption “*Market for Registrant’s Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities.*”

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency. For the fiscal years ended April 30, 2019 and 2018, we generated 20% and 19%, respectively, of our revenues outside of the United States. We typically denominate our international sales in U.S. dollars, euros or British pounds sterling. Our consolidated financial statements are presented in U.S. dollars, which is also the functional currency for our foreign operations. Where transactions may be denominated in foreign currencies, we are subject to market risk with respect to fluctuations in the relative value of currencies. We recorded exchange rate losses of approximately \$486,000 and \$16,000 in fiscal years 2019 and 2018, respectively. We estimate that a 10% movement in foreign currency rates would have the effect of creating an exchange gain or loss of approximately \$301,000 for fiscal 2019.

Interest Rates and Other Market Risks. We manage our interest rate risk by maintaining an investment portfolio of trading investments with high credit quality and relatively short average maturities. These instruments include, but are not limited to, money-market instruments, bank time deposits, and taxable and tax-advantaged variable rate and fixed rate obligations of corporations, municipalities, and national, state, and local government agencies, in accordance with an investment policy approved by our Board of Directors. These instruments are denominated in U.S. dollars. The fair market value of our cash equivalents and investments as of April 30, 2019 was approximately \$83.8 million.

We also hold cash balances in accounts with commercial banks in the United States and foreign countries. These cash balances represent operating balances only and are invested in short-term time deposits of the local bank. Such operating cash balances held at banks outside the United States are denominated in the local currency and are nominal.

Many of our investments carry a degree of interest rate risk. When interest rates fall, our income from investments in variable-rate securities declines. When interest rates rise, the fair market value of our investments in fixed-rate securities declines. In addition, our investments in equity securities are subject to stock market volatility. Due in part to these factors, our future investment income may fall short of expectations or we may suffer losses in principal if forced to sell securities, which have seen a decline in market value due to changes in interest rates. We attempt to mitigate risk by holding fixed-rate securities to maturity, but if our liquidity needs force us to sell fixed-rate securities prior to maturity, we may experience a loss of principal. We believe that a 10% fluctuation in interest rates would not have a material effect on our financial condition or results of operations.

Inflation. Although we cannot accurately determine the amounts attributable thereto, we have been affected by inflation through increased costs of employee compensation and other operational expenses. To the extent permitted by the marketplace for our products and services, we attempt to recover increases in costs by periodically increasing prices.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	<u>Page</u>
Management’s Report on Internal Control Over Financial Reporting	51
Reports of Independent Registered Public Accounting Firm	52
Consolidated Balance Sheets as of April 30, 2019 and 2018	54
Consolidated Statements of Operations for the Years ended April 30, 2019, 2018 and 2017	55
Consolidated Statements of Shareholders’ Equity for the Years ended April 30, 2019, 2018 and 2017	56
Consolidated Statements of Cash Flows for the Years ended April 30, 2019, 2016 and 2017	57
Notes to Consolidated Financial Statements	58

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

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by or under the supervision of our CEO and CFO, and used by our Board of Directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles and includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and dispositions of our assets;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations from our management and directors; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. 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.

Our management, including our Principal Executive Officer (“PEO”) and President, assessed the effectiveness of our internal control over financial reporting as of April 30, 2019. In making this assessment, our management used the criteria set forth in *Internal Control—Integrated Framework (2013)* published by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, our management, including our PEO and President, has concluded that our internal control over financial reporting was effective as of April 30, 2019.

KPMG LLP, our independent registered public accounting firm, has issued an attestation report on the effectiveness of our internal control over financial reporting as of April 30, 2019, and this attestation report follows immediately below.

(b) Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
American Software, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited American Software, Inc. and subsidiaries' (the Company) internal control over financial reporting as of April 30, 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 Company maintained, in all material respects, effective internal control over financial reporting as of April 30, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of April 30, 2019 and 2018, the related consolidated statements of operations, shareholders' equity, and cash flows for each of the years in the three-year period ended April 30, 2019, and the related notes and financial statement schedule II (collectively, the consolidated financial statements), and our report dated July 12, 2019 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible 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 internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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

Atlanta, Georgia
July 12, 2019

(c) Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
American Software, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of American Software, Inc. and subsidiaries (the Company) as of April 30, 2019 and 2018, the related consolidated statements of operations, shareholders' equity, and cash flows for each of the years in the three-year period ended April 30, 2019, and the related notes and financial statement schedule II (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of April 30, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended April 30, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of April 30, 2019 based on criteria established in *Internal Control—Integrated Framework (2013)*, issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated July 12, 2019 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 1(n) to the consolidated financial statements, the Company has changed its method of accounting for revenue recognition in 2019 due to the adoption of ASU 2014-09, *Revenue from Contracts with Customers* and the related amendments.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 1982.

Atlanta, Georgia
July 12, 2019

Consolidated Balance Sheets

April 30, 2019 and 2018
(in thousands, except share data)

	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 61,288	\$ 52,794
Investments	24,710	26,121
Trade accounts receivable, less allowance for doubtful accounts of \$153 at April 30, 2019 and \$159 at April 30, 2018:		
Billed	18,819	18,643
Unbilled	1,475	3,375
Prepaid expenses and other current assets	6,210	6,592
Total current assets	<u>112,502</u>	<u>107,525</u>
Investments-noncurrent	2,484	8,893
Property and equipment, net	3,585	3,034
Capitalized software, net	11,063	9,728
Goodwill	25,888	25,888
Other intangibles, net	2,732	5,120
Other assets	3,056	2,777
Total assets	<u>\$ 161,310</u>	<u>\$ 162,965</u>
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 2,448	\$ 1,974
Accrued compensation and related costs	2,561	6,310
Dividends payable	3,434	3,367
Other current liabilities	1,375	1,246
Deferred revenue	33,283	33,226
Total current liabilities	<u>43,101</u>	<u>46,123</u>
Deferred income taxes	3,514	2,615
Long-term deferred revenue	—	147
Other long-term liabilities	88	1,496
Total liabilities	<u>46,703</u>	<u>50,381</u>
Shareholders' equity:		
Common stock:		
Class A, \$0.10 par value. Authorized 50,000,000 shares: Issued and outstanding 33,979,739 (29,391,107, net) shares at April 30, 2019 and 33,141,764 (28,553,132, net) shares at April 30, 2018	3,398	3,314
Class B, \$0.10 par value. Authorized 10,000,000 shares: Issued and outstanding 1,821,591 shares at April 30, 2019 and 2,057,390 shares at April 30, 2018; convertible into Class A shares on a one-for-one basis	182	205
Additional paid-in capital	138,315	131,258
Retained (deficit) earnings	(1,729)	3,366
Class A treasury stock, 4,588,632 shares at April 30, 2019 and 4,588,632 shares at April 30, 2018, at cost	(25,559)	(25,559)
Total shareholders' equity	<u>114,607</u>	<u>112,584</u>
Commitments and contingencies		
Total liabilities and shareholders' equity	<u>\$ 161,310</u>	<u>\$ 162,965</u>

See accompanying notes to consolidated financial statements.

American Software, Inc. and Subsidiaries
Consolidated Statements of Operations
Years ended April 30, 2019, 2018, and 2017
(in thousands, except per share data)

	2019	2018	2017
Revenues:			
License	\$ 7,126	\$ 15,344	\$ 15,584
Subscriptions fees	14,026	8,855	4,381
Professional services and other	42,154	44,663	43,932
Maintenance	45,400	43,841	42,389
Total revenues	<u>108,706</u>	<u>112,703</u>	<u>106,286</u>
Cost of revenues:			
License	6,430	6,261	6,713
Subscriptions fees	5,759	3,817	3,290
Professional services and other	31,421	30,596	31,374
Maintenance	8,356	9,326	9,707
Total cost of revenues	<u>51,966</u>	<u>50,000</u>	<u>51,084</u>
Gross margin	<u>56,740</u>	<u>62,703</u>	<u>55,202</u>
Research and development	13,078	11,877	11,889
Sales and marketing	20,992	20,658	20,287
General and administrative	17,006	16,057	14,219
Amortization of acquisition-related intangibles	388	580	1,041
Total operating expenses	<u>51,464</u>	<u>49,172</u>	<u>47,436</u>
Operating income	<u>5,276</u>	<u>13,531</u>	<u>7,766</u>
Other income:			
Interest income	2,092	1,575	1,257
Other, net	273	609	12,592
Earnings before income taxes	<u>7,641</u>	<u>15,715</u>	<u>21,615</u>
Income tax expense	838	3,662	6,994
Net earnings	<u>\$ 6,803</u>	<u>\$ 12,053</u>	<u>\$ 14,621</u>
Earnings per common share:(a)			
Basic	<u>\$ 0.22</u>	<u>\$ 0.40</u>	<u>\$ 0.50</u>
Diluted	<u>\$ 0.22</u>	<u>\$ 0.40</u>	<u>\$ 0.49</u>
Shares used in the calculation of earnings per common share:			
Basic	30,950	30,080	29,232
Diluted	31,378	30,472	29,567

(a) Diluted per share amounts for Class A shares are shown above. Diluted per share for Class B shares under the two-class method are \$0.22, \$0.39 and \$0.49 for the years ended April 30, 2019, 2018 and 2017, respectively. See Note 1 to the Consolidated Financial Statements.

See accompanying notes to consolidated financial statements.

American Software, Inc. and Subsidiaries
Consolidated Statements of Shareholders' Equity
Years ended April 30, 2019, 2018, and 2017
(in thousands, except share data)

	Common stock				Additional paid-in capital	Retained earnings/ deficit	Treasury stock	Total shareholders' equity
	Class A		Class B					
	Shares	Amount	Shares	Amount				
Balance at April 30, 2016	30,972,947	\$ 3,097	2,487,086	\$ 249	\$ 114,210	\$ 2,897	\$(25,559)	\$ 94,894
Proceeds from stock options exercised	754,811	75	—	—	5,642	—	—	5,717
Conversion of Class B shares into Class A shares	93,750	10	(93,750)	(10)	—	—	—	—
Stock-based compensation	—	—	—	—	1,428	—	—	1,428
Net earnings	—	—	—	—	—	14,621	—	14,621
Dividends declared	—	—	—	—	—	(12,910)	—	(12,910)
Balance at April 30, 2017	31,821,508	3,182	2,393,336	239	121,280	4,608	(25,559)	103,750
Proceeds from stock options exercised	984,310	98	—	—	8,511	—	—	8,609
Conversion of Class B shares into Class A shares	335,946	34	(335,946)	(34)	—	—	—	—
Stock-based compensation	—	—	—	—	1,467	—	—	1,467
Net earnings	—	—	—	—	—	12,053	—	12,053
Dividends declared	—	—	—	—	—	(13,295)	—	(13,295)
Balance at April 30, 2018	33,141,764	3,314	2,057,390	205	131,258	3,366	(25,559)	112,584
Balance at Cumulative effect of the adoption of Topic 606	—	—	—	—	—	1,753	—	1,753
Proceeds from stock options exercised	602,176	61	—	—	5,306	—	—	5,367
Conversion of Class B shares into Class A shares	235,799	23	(235,799)	(23)	—	—	—	—
Stock-based compensation	—	—	—	—	1,751	—	—	1,751
Net earnings	—	—	—	—	—	6,803	—	6,803
Dividends declared	—	—	—	—	—	(13,651)	—	(13,651)
Balance at April 30, 2019	<u>33,979,739</u>	<u>\$ 3,398</u>	<u>1,821,591</u>	<u>\$ 182</u>	<u>\$ 138,315</u>	<u>\$ (1,729)</u>	<u>\$(25,559)</u>	<u>\$ 114,607</u>

See accompanying notes to consolidated financial statements.

American Software, Inc. and Subsidiaries

Consolidated Statements of Cash Flows

Years ended April 30, 2019, 2018, and 2017

(in thousands)

	2019	2018	2017
Cash flows from operating activities:			
Net earnings	\$ 6,803	\$ 12,053	\$ 14,621
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation and amortization	7,719	6,030	6,640
Stock-based compensation expense	1,751	1,467	1,428
Net gain on investments	(373)	(254)	(146)
Net gain on sale of fixed assets	(4)	—	(11,776)
Deferred income tax expense	320	621	675
Changes in operating assets and liabilities, net of effects of acquisition:			
Purchases of trading securities	(10,254)	(24,541)	(10,267)
Proceeds from sales and maturities of trading securities	18,447	13,568	15,507
Accounts receivable, net	2,165	(1,774)	1,187
Prepaid expenses and other assets	536	(1,983)	(284)
Accounts payable and other liabilities	(3,611)	(1,807)	1,185
Deferred revenue	431	3,374	1,010
Net cash provided by operating activities	<u>23,930</u>	<u>6,754</u>	<u>19,780</u>
Cash flows from investing activities:			
Capitalized computer software development costs	(5,961)	(4,804)	(3,724)
Purchases of property and equipment, net of disposals	(1,252)	(1,428)	(731)
Proceeds from sale of building	—	—	13,134
Purchase of business, net of cash acquired	—	(9,150)	(4,441)
Net cash (used in) provided by investing activities	<u>(7,213)</u>	<u>(15,382)</u>	<u>4,238</u>
Cash flows from financing activities:			
Proceeds from exercise of stock options	5,367	8,609	5,717
Payment for accrued acquisition consideration	—	—	(200)
Dividends paid	(13,590)	(13,188)	(12,538)
Net cash used in financing activities	<u>(8,223)</u>	<u>(4,579)</u>	<u>(7,021)</u>
Net change in cash and cash equivalents	8,494	(13,207)	16,997
Cash and cash equivalents at beginning of year	52,794	66,001	49,004
Cash and cash equivalents at end of year	<u>\$ 61,288</u>	<u>\$ 52,794</u>	<u>\$ 66,001</u>
Supplemental disclosures of cash paid during the year for:			
Income taxes	\$ 516	\$ 7,892	\$ 2,924
Supplemental disclosures of noncash operating, investing and financing activities:			
Accrual of dividends payable	\$ 3,434	\$ 3,367	\$ 3,259

See accompanying notes to consolidated financial statements.

American Software, Inc. and Subsidiaries
Notes to Consolidated Financial Statements
April 30, 2019, 2018, and 2017

(1) Presentation and Summary of Significant Accounting Policies

(a) Basis of Presentation

Founded in 1970 and headquartered in Atlanta, Georgia, American Software, Inc. and its subsidiaries (collectively, the “Company”) are engaged in the development, marketing, and support activities of a broad range of computer business application software products. The Company’s operations are principally in the computer software industry, and its products and services are used by customers within the United States and certain international markets. We provide our software solutions through three major business segments, which are further broken down into a total of six major product and service groups. The three operating segments are: (1) Supply Chain Management (“SCM”), (2) Information Technology Consulting (“IT Consulting”) and (3) Other.

- The SCM segment consists of Logility, Inc. (see Note 9), which provides collaborative supply chain solutions to streamline and optimize the production, distribution and management of products between trading partners, as well as wholly-owned subsidiaries of Logility, DMI, NGC and Halo.
- The IT Consulting segment consists of The Proven Method, Inc., an IT staffing and consulting services firm.
- The Other segment consists of (i) American Software ERP, which provides purchasing and materials management, customer order processing, financial, e-commerce and traditional manufacturing solutions, and (ii) unallocated corporate overhead expenses.

Certain prior period amounts have been recast to conform within these footnotes to current period presentation.

(b) Principles of Consolidation

The consolidated financial statements include the accounts of American Software, Inc. and its wholly-owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

(c) Revenue Recognition

In accordance with the FASB issued Accounting Standards Update (“ASU”) No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, we recognize revenue when we transfer control of the promised goods or services to our customers, in an amount that reflects the consideration we expect to receive in exchange for those goods or services. We derive our revenue from software licenses, maintenance services, consulting, implementation and training services, and Software-as-a-Service (“SaaS”), which includes a subscription to our software as well as maintenance, hosting and managed services.

The Company determines revenue recognition through the following steps:

Step 1 - Identification of the Contract with the Customer

Step 2 - Identification of Promised Goods and Services and Evaluation of Whether the Promised Goods and Services are Distinct Performance Obligations

Step 3 - Determination of the Transaction Price

Step 4 - Allocation of the Transaction Price to Distinct Performance Obligations

Step 5 - Attribution of Revenue for Each Distinct Performance Obligation

Nature of Products and Services.

License. Our perpetual software licenses provide the customer with a right to use the software as it exists at the time of purchase. We recognize revenue for distinct software licenses once the license period has begun and we have made the software available to the customer.

Our perpetual software licenses are sold with maintenance under which we provide customers with telephone consulting, product updates on a when and if available basis, and releases of new versions of products previously purchased by the customer, as well as error reporting and correction services.

Subscription Fees. Subscription fees include Software-as-a-Service ("SaaS") revenues for the right to use the software for a limited period of time in an environment hosted by the Company or by a third party. The customer accesses and uses the software on an as needed basis over the Internet or via a dedicated line; however, the customer has no right to take delivery of the software without incurring a significant penalty. The underlying arrangements typically include a single fee for the service that is billed monthly, quarterly or annually. The Company's SaaS solutions represent a series of distinct services that are substantially the same and have the same pattern of transfer to the customer. Revenue from a SaaS solution is generally recognized ratably over the term of the arrangement.

Professional Services and Other. Our services revenue consists of fees generated from consulting, implementation and training services, including reimbursements of out-of-pocket expenses in connection with our services. Services are typically optional to our customers, and are distinct from our software. Fees for our services are separately priced and are generally billed on an hourly basis, and revenue is recognized over time as the services are performed. We believe the output method of hours worked provides the best depiction of the transfer of our services since the customer is receiving the benefit from our services as the work is performed. Reimbursements received from customers for out-of-pocket expenses were recorded in revenues and totaled approximately \$1.4 million, \$1.9 million, and \$2.1 million for 2019, 2018 and 2017, respectively.

Maintenance. Revenue is derived from maintenance under which we provide customers with telephone consulting, product updates on a when and if available basis, and releases of new versions of products previously purchased by the customer, as well as error reporting and correction services. Maintenance for perpetual licenses is renewable, generally on an annual basis, at the option of the customer. Maintenance terms typically range from one to three years. Revenue related to maintenance is generally paid in advance and recognized ratably over the term of the agreement since the Company is standing ready to provide a series of maintenance services that are substantially the same each period over the term; therefore, time is the best measure of progress.

Indirect Channel Revenue. We record revenues from sales made through the indirect sales channels on a gross basis, because we control the goods or services and act as the principal in the transaction. In reaching this determination, we evaluated sales through our indirect channel on a case-by-case basis and considered a number of factors including indicators of control such as the party having the primary responsibility to provide specified goods or services, and the party having discretion in establishing prices.

Sales Taxes. We account for sales taxes collected from customers on a net basis.

Significant Judgments. Our contracts with customers typically contain promises to transfer multiple products and services. Judgment is required to determine whether each product and service is considered to be a distinct performance obligation that should be accounted for separately under the contract. We allocate the transaction price to distinct performance obligations based on their relative standalone selling price ("SSP"). We estimate SSP primarily based on the prices charged to customers for products or services sold on a standalone basis, or by using information such as market conditions and other observable inputs. However, the selling prices of our software licenses are highly variable or uncertain. Therefore, we estimate SSP for software licenses using the residual approach, determined based on total transaction price less the SSP of other products and services promised in the contract. When performing relative selling price allocations, we use the contract price as the estimate of SSP if it falls within the Company's range estimate of SSP since any point within the range would be a valid price point on a standalone basis. If the contract price falls outside of the range of SSP, the Company will use the nearest point in the SSP range in its relative selling price allocation.

Contract Balances. Timing of invoicing to customers may differ from timing of revenue recognition and these timing differences result in receivables, contract assets (unbilled accounts receivable), or contract liabilities (deferred revenue) on the Company's consolidated balance sheets. Fees for our software licenses are generally due within 30 days of contract execution. We have an established history of collecting under the terms of our software license contracts without providing refunds or concessions to our customers. SaaS solutions and maintenance are typically billed in advance on a monthly, quarterly, or annual basis. Services are typically billed as performed. In instances where the timing of revenue recognition differs from the timing of invoicing, we have determined that our contracts generally do not include a significant financing component. The primary purpose of our invoicing terms is to provide customers with predictable ways to purchase our software and services, not to provide or receive financing. Additionally, we are applying the practical expedient to exclude any financing component from consideration for any contracts with payment terms of one year or less since we rarely offer terms extending beyond one year. The consideration in our customer contracts is fixed.

We have an unconditional right to consideration for all goods and services transferred to our customers. That unconditional right to consideration is reflected in billed and unbilled accounts receivable in the accompanying consolidated balance sheets in accordance with ASC Topic 606.

Deferred revenue consists of amounts collected prior to having completed the performance of maintenance, SaaS, hosting, and managed services. We typically invoice customers for cloud subscription and support fees in advance on a monthly, quarterly or annual basis, with payment due at the start of the cloud subscription or support term. During the twelve months ended April 30, 2019, the Company recognized \$33.3 million of revenue that was included in the deferred revenue balance as of April 30, 2018, as adjusted for Topic 606, at the beginning of the period.

	April 30, 2019	May 1, 2018
Contract Balances:		
Contract assets, current	\$ 1,475	\$ 3,815
Contract assets, long-term	—	332
Total contract assets	<u>\$ 1,475</u>	<u>\$ 4,147</u>
Deferred revenue, current	\$ 33,283	\$ 32,705
Deferred revenue, long-term	—	147
Total deferred revenue	<u>\$ 33,283</u>	<u>\$ 32,852</u>

Remaining 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. Remaining performance obligations represent the transaction price of orders for which products have not been delivered or services have not been performed. As of April 30, 2019, the aggregate amount of the transaction price allocated to remaining performance obligations was approximately \$62.4 million. The Company expects to recognize revenue on approximately three-quarters of the remaining performance obligations over the next 12 months, with the remainder recognized thereafter.

Disaggregated Revenue. The Company disaggregates revenue from contracts with customers by geography, 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 April 30,	
	2019	2018
Revenues:		
Domestic	\$ 87,316	\$ 90,895
International	21,390	21,808
	<u>\$ 108,706</u>	<u>\$ 112,703</u>

Practical Expedients and Exemptions. There are several practical expedients and exemptions allowed under Topic 606 that impact the 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:

- 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 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 (this applies to time-and-material engagements).

Contract Costs. The Company capitalizes the incremental costs of obtaining a contract with a customer if the Company expects to recover those costs. The incremental costs of obtaining a contract are those that the Company incurs to obtain a contract with a

customer that it would not have incurred if the contract had not been obtained (for example, a sales commission). The Company capitalizes the costs incurred to fulfill a contract only if those costs meet all of the following criteria:

- The costs relate directly to a contract or to an anticipated contract that the Company can specifically identify.
- The costs generate or enhance resources of the Company that will be used in satisfying (or in continuing to satisfy) performance obligations in the future.
- The costs are expected to be recovered.

Certain sales commissions incurred by the Company were determined to be incremental costs to obtain the related contracts, which are deferred and amortized ratably over the economic benefit period. These deferred commission costs are classified as current or non-current based on the timing of when the Company expects to recognize the expense. The current and non-current portions of deferred commissions are included in prepaid expenses and other current assets and other long-term assets, respectively, in the Company's consolidated balance sheets. Total deferred commissions at April 30, 2019 and April 30, 2018 were \$2.3 million and \$2.5 million, respectively. Amortization of sales commissions was \$1.3 million for year ended April 30, 2019, which is included in sales and marketing expense in the accompanying consolidated statements of operations. No impairment losses were recognized during fiscal 2019 and 2018.

Unbilled Accounts Receivable. The unbilled receivable balance consists of amounts generated from license fee and services revenues. At April 30, 2019 and 2018, unbilled license fees were approximately \$0.4 million and \$0.8 million, respectively, and unbilled services revenues were approximately \$1.1 million and \$2.5 million, respectively. Unbilled license fee accounts receivable represents revenue that has been recognized but under the terms of the license agreement, which include specified payment terms that are considered normal and customary, certain payments have not yet been invoiced to the customers. Unbilled services revenues primarily occur due to the timing of the billings, which occur subsequent to the end of each reporting period.

(d) Cost of Revenues

Cost of revenues for licenses includes amortization of developed technology and capitalized computer software development costs, salaries and benefits and VAR commissions. Costs for maintenance and services revenues include the cost of personnel to conduct implementations, customer support and consulting, and other personnel-related expenses as well as agent commission expenses related to maintenance revenues generated by the indirect channel. Commission costs for maintenance are deferred and amortized over the related maintenance term.

(e) Cash Equivalents

Cash equivalents of \$56.6 million and \$47.0 million at April 30, 2019 and 2018, respectively, consist of overnight repurchase agreements and money market deposit accounts. The Company considers all such investments with original maturities of three months or less to be cash equivalents for purposes of the consolidated statements of cash flows.

(f) Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash and cash equivalents, short- and long-term investments and accounts receivable. The Company maintains cash and cash equivalents and short- and long-term investments with various financial institutions. The Company's sales are primarily to companies located in North America and Europe. The Company performs periodic credit evaluations of its customers' financial condition and does not require collateral. Accounts receivable are due principally from companies under stated contract terms.

(g) Returns and Allowances

The Company has not experienced significant returns or warranty claims to date and, as a result, the allowance for the cost of returns and product warranty claims at April 30, 2019 and 2018 is not significant.

The Company records an allowance for doubtful accounts based on the historical experience of write-offs and a detailed assessment of accounts receivable. The total amounts of expense to operations were approximately \$0, \$24,000, and \$39,000 for 2019, 2018, and 2017, respectively, which are included in general and administrative expenses in the accompanying consolidated statements of operations. In estimating the allowance for doubtful accounts, management considers the age of the accounts receivable, the Company's historical write-offs, and the credit worthiness of the customer, among other factors. Should any of these factors change,

the estimates made by management will also change accordingly, which could affect the level of the Company's future provision for doubtful accounts. Uncollectible accounts are written off when it is determined that the specific balance is not collectible.

(h) Investments

Investments consist of commercial paper, corporate bonds, government securities, certificates of deposits and marketable equity securities. The Company accounts for its investments in accordance with the Investments—Debt and Equity Securities Topic of the FASB ASC. The Company has classified its investment portfolio as “trading.” “Trading” securities are bought and held principally for the purpose of selling them in the near term and are recorded at fair value. Unrealized gains and losses on trading securities are included in the determination of net earnings. For the purposes of computing realized gains and losses, cost is identified on a specific identification basis. Investments with maturities less than one year as of the balance sheet date are classified as short-term investments and those that mature greater than one year are classified as long-term investments.

(i) Property and Equipment

Property and equipment are recorded at cost, less accumulated depreciation and amortization. Depreciation of buildings, computer equipment, purchased computer software, office furniture and equipment is calculated using the straight-line method based upon the estimated useful lives of the assets (three years for computer equipment and software, seven years for office furniture and equipment and thirty years for buildings). Leasehold improvements are amortized using the straight-line method over the estimated useful lives of the assets or the related lease term, whichever is shorter. Depreciation and amortization expense on buildings, furniture, equipment and purchased computer software was \$0.7 million, \$0.5 million, and \$0.7 million in 2019, 2018, and 2017, respectively.

(j) Capitalized Computer Software Development Costs

The Company capitalizes certain computer software development costs in accordance with the Costs of Software to be Sold, Leased or Marketed Topic of the FASB ASC. Costs incurred internally to create a computer software product or to develop an enhancement to an existing product are charged when incurred as research and development expense until technological feasibility for the respective product is established. Thereafter, software development costs are capitalized and reported at the lower of unamortized cost or net realizable value. Capitalization ceases when the product or enhancement is available for general release to customers. The Company makes ongoing evaluations of the recoverability of its capitalized software projects by comparing the net amount capitalized for each product to the estimated net realizable value of the product. If such evaluations indicate that the unamortized software development costs exceed the net realizable value, the Company writes off the amount by which the unamortized software development costs exceed net realizable value. Capitalized computer software development costs are amortized ratably based on the projected revenues associated with the related software or on a straight-line basis over three years, whichever method results in a higher level of amortization. Amortization of capitalized computer software development costs is included in the cost of license revenues in the consolidated statements of operations.

Total Expenditures and Amortization. Total expenditures for capitalized computer software development costs, total research and development expense, and total amortization of capitalized computer software development costs are as follows:

	Years ended April 30,		
	2019	2018	2017
	(in thousands)		
Total capitalized computer software development costs	\$ 5,961	\$ 4,804	\$ 3,724
Total research and development expense	13,078	11,877	11,889
Total research and development expense and capitalized computer software-development costs	<u>\$ 19,039</u>	<u>\$ 16,681</u>	<u>\$ 15,613</u>
Total amortization of capitalized computer software development costs	\$ 4,627	\$ 3,690	\$ 4,250

Capitalized computer software development costs consist of the following at April 30, 2019 and 2018 (in thousands):

	2019	2018
Capitalized computer software development costs	\$ 39,803	\$ 33,841
Accumulated amortization	(28,740)	(24,113)
	<u>\$ 11,063</u>	<u>\$ 9,728</u>

Of the Company's capitalized software projects that are currently completed and being amortized, the Company expects amortization expense for the next three years to be as follows (in thousands):

2020	\$ 4,604
2021	3,343
2022	677
	<u>\$ 8,624</u>

(k) Acquisition-Related Intangible Assets (exclusive of Logility's treasury stock repurchases)

Acquisition-related intangible assets are stated at historical cost and include acquired software and certain other intangible assets with definite lives. The intangible assets are being amortized over a period ranging from one to eight years. For 2019, total amortization expense related to acquisition-related intangible assets was approximately \$2.4 million, with \$0.4 million included in operating expense and \$2.0 million included in cost of license fees in the accompanying consolidated statements of operations. For 2018, total amortization expense related to acquisition-related intangible assets was approximately \$1.8 million, with \$0.6 million included in operating expense and \$1.2 million included in cost of license fees in the accompanying consolidated statements of operations. For 2017, total amortization expense related to acquisition-related intangible assets was approximately \$1.7 million, with \$1.0 million included in operating expense and \$0.7 million included in cost of license fees in the accompanying consolidated statements of operations.

Acquisition-Related Intangible Assets consist of the following at April 30, 2019 and 2018 (in thousands):

	Weighted Average Amortization in Years	2019	2018
Current technology	3	\$ 6,000	\$ 6,000
Customer relationships	8	1,700	1,700
Non-compete	3	100	100
Trademarks	3	340	340
		<u>8,140</u>	<u>8,140</u>
Accumulated amortization		(5,408)	(3,020)
		<u>\$ 2,732</u>	<u>\$ 5,120</u>

The Company expects amortization expense for the next five years to be as follows based on intangible assets as of April 30, 2019 (in thousands):

2020	\$ 1,600
2021	772
2022	213
2023	52
2024	37
Thereafter	58
	<u>\$ 2,732</u>

(l) Goodwill and Other Intangibles

Goodwill represents the excess of costs over fair value of assets of businesses acquired. Goodwill and intangible assets acquired in a purchase business combination and determined to have an indefinite useful life are not amortized, but instead are tested for impairment at least annually in accordance with the Intangibles-Goodwill and Other Topic of the FASB ASC. The Company evaluates the carrying value of goodwill annually and between annual evaluations if events occur or circumstances change that would more likely than not reduce the fair value of the reporting unit below its carrying amount. Such circumstances could include, but are not limited to, (1) a significant adverse change in legal factors or in business climate, (2) unanticipated competition, or (3) an adverse action or assessment by a regulator.

When evaluating whether the goodwill is impaired, the Company compares the fair value of the reporting unit to which the goodwill is assigned to its carrying amount, including goodwill. The Company identifies the reporting unit on a basis that is similar

to its method for identifying operating segments as defined by the Segment Reporting Topic of the FASB ASC. If the carrying amount of a reporting unit exceeds its fair value, then the amount of the impairment loss must be measured. This evaluation is applied annually on each impairment testing date (April 30) unless there is a triggering event present during an interim period.

For the years ended April 30, 2019 and 2018, the Company performed a qualitative assessment based on economic, industry and company-specific factors as the initial step in the annual goodwill impairment test for all reporting units. Based on the results of the qualitative assessment, companies are only required to perform Step 1 of the annual impairment test for a reporting unit if the company concludes that it is more likely than not that the unit's fair value is less than its carrying amount. To the extent the Company concludes it is more likely than not that a reporting unit's estimated fair value is less than its carrying amount, the two-step approach is applied. The first step would require a comparison of each reporting unit's fair value to the respective carrying value. If the carrying value exceeds the fair value, a second step is performed to measure the amount of impairment loss, if any. The Company did not identify any macroeconomic or industry conditions as of April 30, 2019, that would indicate the fair value of the reporting units were more likely than not to be less than their respective carrying values. If circumstances change or events occur to indicate it is more likely than not that the fair value of any reporting units have fallen below their carrying value, the Company would test such reporting unit for impairment.

Intangible assets with estimable useful lives are required to be amortized over their respective estimated useful lives to their estimated residual values, and reviewed for impairment in accordance with the Property, Plant, and Equipment Topic of the FASB ASC.

Goodwill consisted of the following by segment (in thousands):

	Supply Chain Management*	IT Consulting	Other	Total
Balance at April 30, 2017	\$ 19,549	\$ —	\$ —	\$ 19,549
Goodwill related to the Halo Acquisition	6,339	—	—	6,339
Balance at April 30, 2018	25,888	—	—	25,888
Balance at April 30, 2019	\$ 25,888	\$ —	\$ —	\$ 25,888

* Goodwill related to Logility, Inc., New Generation Computing, Inc., Demand Management, Inc. and their acquisitions.

Intangible Assets (including Acquisition-Related Intangible Assets) consisted of the following by segment (in thousands):

	Supply Chain Management	IT Consulting	Other	Total
Balance at April 30, 2017	\$ 3,399	\$ —	\$ —	\$ 3,399
Intangibles related to the Halo Acquisition	3,570	—	—	3,570
Amortization expense	(1,849)	—	—	(1,849)
Balance at April 30, 2018	5,120	—	—	5,120
Amortization expense	(2,388)	—	—	(2,388)
Balance at April 30, 2019	\$ 2,732	\$ —	\$ —	\$ 2,732

(m) Income Taxes

The Company accounts for income taxes using the asset and liability method. Under the asset and liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

(n) Recent Accounting Pronouncements

In May 2014, the FASB issued Accounting Standards Update (“ASU”) No. 2014-09, Revenue from Contracts with Customers (Topic 606), which replaced the previous revenue recognition guidance.

The Company adopted the new revenue standard effective May 1, 2018 using the modified retrospective transition method. Under this method, the Company elected to apply the cumulative effect method to contracts that are not complete as of the adoption date. The Company's total revenue impact was \$1.2 million, with approximately 70% impacting the fiscal year ending April 30, 2019, which is the result of recognizing revenue for the license component of its term licenses and certain perpetual license contracts that were previously recognized over time due to the lack of vendor-specific objective evidence (VSOE) of fair value at the point in time at which control of the software license is transferred to the customer. In addition, under the new standard, the Company will capitalize a portion of sales commission expenses and recognize them ratably over the associated period of economic benefit, which the Company has determined to be six years, which had an impact of \$1.1 million. As a result, the cumulative impact due to the adoption of the new revenue standard on the opening consolidated balance sheet was an increase in opening retained earnings, with a corresponding increase in contract assets and a decrease in deferred revenue.

The accompanying consolidated balance sheet, the consolidated statements of operations and cash flows for year ended April 30, 2018 have not been revised for the effects of Topic 606 and are therefore not comparable to the April 30, 2019 period.

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

	April 30, 2018	Topic 606 (in thousands)	May 1, 2018
ASSETS			
Current assets:			
Cash and cash equivalents	\$ 52,794	\$ —	\$ 52,794
Investments	26,121	—	26,121
Trade accounts receivable, net			
Billed	18,643	—	18,643
Unbilled	3,375	440	3,815
Prepaid expenses and other current assets	6,592	126	6,718
Total current assets	107,525	566	108,091
Investments—Noncurrent	8,893	—	8,893
Property and equipment, net	3,034	—	3,034
Capitalized software, net	9,728	—	9,728
Goodwill	25,888	—	25,888
Other intangibles, net	5,120	—	5,120
Other assets	2,777	1,325	4,102
Total assets	\$ 162,965	\$ 1,891	\$ 164,856
LIABILITIES AND SHAREHOLDERS' EQUITY			
Current liabilities:			
Accounts payable	\$ 1,974	\$ —	\$ 1,974
Accrued compensation and related costs	6,310	—	6,310
Dividends payable	3,367	—	3,367
Other current liabilities	1,246	80	1,326
Deferred revenue	33,226	(521)	32,705
Total current liabilities	46,123	(441)	45,682
Deferred income taxes	2,615	579	3,194
Long-term deferred revenue	147	—	147
Other long-term liabilities	1,496	—	1,496
Total liabilities	50,381	138	50,519
Shareholders' equity:			
Common stock:			
Class A	3,314	—	3,314
Class B	205	—	205
Additional paid-in capital	131,258	—	131,258
Retained earnings	3,366	1,753	5,119
Class A treasury stock	(25,559)	—	(25,559)
Total shareholders' equity	112,584	1,753	114,337
Commitments and contingencies			
Total liabilities and shareholders' equity	\$ 162,965	\$ 1,891	\$ 164,856

The following table summarizes the effects of adopting Topic 606 on the Company's consolidated balance sheet as of April 30, 2019:

	As reported under Topic 606	Adjustments (in thousands)	Balances under Prior GAAP
ASSETS			
Current assets:			
Cash and cash equivalents	\$ 61,288	\$ —	\$ 61,288
Investments	24,710	—	24,710
Trade accounts receivable, net			
Billed	18,819	—	18,819
Unbilled	1,475	(289)	1,186
Prepaid expenses and other current assets	6,210	(102)	6,108
Total current assets	112,502	(391)	112,111
Investments—Noncurrent	2,484	—	2,484
Property and equipment, net	3,585	—	3,585
Capitalized software, net	11,063	—	11,063
Goodwill	25,888	—	25,888
Other intangibles, net	2,732	—	2,732
Other assets	3,056	(1,413)	1,643
Total assets	\$ 161,310	\$ (1,804)	\$ 159,506
LIABILITIES AND SHAREHOLDERS' EQUITY			
Current liabilities:			
Accounts payable	\$ 2,448	\$ —	\$ 2,448
Accrued compensation and related costs	2,561	—	2,561
Dividends payable	3,434	—	3,434
Other current liabilities	1,375	(80)	1,295
Deferred revenue	33,283	—	33,283
Total current liabilities	43,101	(80)	43,021
Deferred income taxes	3,514	(512)	3,002
Long-term deferred revenue	—	—	—
Other long-term liabilities	88	—	88
Total liabilities	46,703	(592)	46,111
Shareholders' equity:			
Common stock:			
Class A	3,398	—	3,398
Class B	182	—	182
Additional paid-in capital	138,315	—	138,315
Retained (deficit) earnings	(1,729)	(1,212)	(2,941)
Class A treasury stock	(25,559)	—	(25,559)
Total shareholders' equity	114,607	(1,212)	113,395
Commitments and contingencies			
Total liabilities and shareholders' equity	\$ 161,310	\$ (1,804)	\$ 159,506

The following table summarizes the effects of adopting Topic 606 on the Company's consolidated statement of operations for the year ended April 30, 2019:

	As reported under Topic 606	Adjustments (in thousands, except per share amounts)	Balances under Prior GAAP
Revenues:			
License	\$ 7,126	\$ 627	\$ 7,753
Subscription fees	14,026	8	\$ 14,034
Professional services and other	42,154	139	\$ 42,293
Maintenance	45,400	—	\$ 45,400
Total revenues	<u>108,706</u>	<u>774</u>	<u>109,480</u>
Cost of revenues:			
License	6,430	—	6,430
Subscription fees	5,759	—	5,759
Professional services and other	31,421	—	31,421
Maintenance	8,356	—	8,356
Total cost of revenues	<u>51,966</u>	<u>—</u>	<u>51,966</u>
Gross margin	<u>56,740</u>	<u>774</u>	<u>57,514</u>
Research and development	13,078	—	13,078
Sales and marketing	20,992	166	21,158
General and administrative	17,006	—	17,006
Amortization of acquisition-related intangibles	388	—	388
Total operating expenses	<u>51,464</u>	<u>166</u>	<u>51,630</u>
Operating income	<u>5,276</u>	<u>608</u>	<u>5,884</u>
Other income:			
Interest income	2,092	—	2,092
Other, net	273	—	273
Earnings before income taxes	<u>7,641</u>	<u>608</u>	<u>8,249</u>
Income tax expense	838	66	904
Net earnings	<u>\$ 6,803</u>	<u>\$ 542</u>	<u>\$ 7,345</u>
Earnings per common share:			
Basic	<u>\$ 0.22</u>	<u>\$ 0.02</u>	<u>\$ 0.24</u>
Diluted	<u>\$ 0.22</u>	<u>\$ 0.02</u>	<u>\$ 0.24</u>

The Company's net cash provided by operating activities for the year ended April 30, 2019 did not change due to the adoption of Topic 606. 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 year ended April 30, 2019:

	As reported under Topic 606	Adjustments	Balances under Prior GAAP
	(in thousands)		
Net earnings	\$ 6,803	\$ 542	\$ 7,345
Deferred income taxes	\$ 320	\$ 66	\$ 386
Changes in operating assets and liabilities:			
Accounts receivable, net	\$ 2,165	\$ (151)	\$ 2,014
Prepaid expenses and other assets	\$ 536	\$ 64	\$ 600
Accounts payable and other liabilities	\$ (3,611)	\$ —	\$ (3,611)
Deferred revenue	\$ 431	\$ (521)	\$ (90)

In February 2016, the FASB issued ASU No. 2016-02, *Leases*, which established new ASC Topic 842 ("ASC 842"), to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. Under the new guidance, a lessee will be required to recognize assets and liabilities for leases with lease terms of more than 12 months.

Consistent with current GAAP, the recognition, measurement, and presentation of expenses and cash flows arising from a lease by a lessee primarily will depend on its classification as a finance or operating lease. However, unlike current GAAP, which requires only capital leases to be recognized on the balance sheet, the new standard will require both types of leases to be recognized on the balance sheet. ASC 842 also will require disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. These disclosures include qualitative and quantitative requirements, providing additional information about the amounts recorded in the financial statements.

ASC 842 was previously required to be adopted using the modified retrospective approach. However, in July 2018, the FASB issued ASU No. 2018-11 *Leases (Topic 842) – Targeted Improvements*, which allows for retrospective application with the recognition of a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. Under this option, entities would not need to apply ASC 842 (along with its disclosure requirements) to the comparative prior periods presented.

ASC 842 is effective for the Company in the first quarter of fiscal 2020 and we expect that most of our operating leases (primarily real estate) will be recognized as operating lease liabilities and right of use assets on our consolidated balance sheets. The Company expects that this standard will not have a material effect on its consolidated statements 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 \$2.7 million to \$3.0 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 will elect to adopt certain of the optional practical expedients, including the package of practical expedients, which, among other things, gives us the option to not reassess: 1) whether expired or existing contracts are or contain leases; 2) the lease classification for expired or existing leases; and 3) initial direct costs for existing leases. Also, 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.

(o) Use of Estimates

The preparation of these consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosures of contingent assets and liabilities, at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, we evaluate our estimates, including, but not limited to, those related to revenue/collectability, income taxes, allocation of fair values in acquisitions and business combinations. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Our actual results could differ materially from these estimates under different assumptions or conditions.

(p) Stock-Based Compensation

The Company has one stock-based employee compensation plans under which options to purchase common stock of the Company were outstanding as of April 30, 2019. This plan is described more fully in Note 7.

The Company recorded stock option compensation cost of approximately \$1.8 million, \$1.5 million and \$1.4 million and related income tax benefit of approximately \$0.3 million, an income tax shortfall of approximately \$39,000 and an income tax benefit of approximately \$45,000 for the years ended April 30, 2019, April 30, 2018 and 2017, respectively. Stock-based compensation expense on current year grants is recorded on a straight-line basis over the vesting period for the entire award directly to additional paid-in capital.

(q) Comprehensive Income

The Comprehensive Income Topic of the FASB ASC establishes standards for reporting and presentation of comprehensive income and its components in a full set of financial statements.

The Company did not have any other comprehensive income items for 2019, 2018, or 2017.

(r) Impairment of Long-Lived Assets

The Company reviews long-lived assets, such as property, and equipment, and purchased intangibles subject to amortization, for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of by sale would be separately presented in the consolidated balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated. The assets and liabilities of a group classified as held for sale would be presented separately in the appropriate asset and liability sections of the consolidated balance sheet.

(s) Earnings per Common Share

The Company has two classes of common stock. Class B common shares are convertible into Class A common shares at any time, on a one-for-one basis. Under the Company's Articles of Incorporation, if dividends are declared, holders of Class A common shares shall receive a \$.05 dividend per share prior to the Class B common shares receiving any dividend and holders of Class A common shares shall receive a dividend at least equal to Class B common shares dividends on a per share basis. As a result, the Company has computed the earnings per share in compliance with the Earnings Per Share Topic of the FASB ASC, which requires companies that have multiple classes of equity securities to use the "two-class" method in computing earnings per share.

For the Company's basic earnings per share calculation, the Company uses the "two-class" method. Basic earnings per share are calculated by dividing net earnings attributable to each class of common stock by the weighted average number of shares outstanding. All undistributed earnings are allocated evenly between Class A and B common shares in the earnings per share calculation to the extent that earnings equal or exceed \$.05 per share. This allocation is based on management's judgment after considering the dividend rights of the two-classes of common stock, the control of the Class B shareholders and the convertibility rights of the Class B shares to Class A shares. If Class B shares convert to Class A shares during the period, the distributed net earnings for Class B shares is calculated using the weighted average common shares outstanding during the period.

Diluted earnings per share is calculated similarly to basic earnings per share, except that the calculation includes the dilutive effect of the assumed exercise of options issuable under the Company's stock incentive plans. For the Company's diluted earnings per share calculation for Class A shares, the Company uses the "if-converted" method. This calculation assumes that all Class B common shares are converted into Class A common shares and, as a result, assumes there are no holders of Class B common shares to participate in undistributed earnings.

For the Company's diluted earnings per share calculation for Class B shares, the Company uses the "two-class" method. This calculation does not assume that all Class B common shares are converted into Class A common shares. In addition, this method assumes the dilutive effect of Class A stock options were converted to Class A shares and the undistributed earnings are allocated evenly to both Class A and B shares including Class A shares issued pursuant to those converted stock options. This allocation is based on management's judgment after considering the dividend rights of the two-classes of common stock, the control of the Class B shareholders and the convertibility rights of the Class B shares into Class A shares.

The following tables set forth the computation of basic earnings per common share and diluted earnings per common share (in thousands except for per share amounts). See Note 7 for total stock options outstanding and potential dilution:

Basic earnings per common share:

	Year Ended April 30, 2019		Year Ended April 30, 2018		Year Ended April 30, 2017	
	Class A Common Shares	Class B Common Shares	Class A Common Shares	Class B Common Shares	Class A Common Shares	Class B Common Shares
Distributed earnings per share	\$ 0.44	\$ 0.44	\$ 0.44	\$ 0.43	\$ 0.44	\$ 0.44
Undistributed earnings/(loss) per share	(0.22)	(0.22)	(0.04)	(0.04)	0.06	0.06
Total per share	\$ 0.22	\$ 0.22	\$ 0.40	\$ 0.39	\$ 0.50	\$ 0.50
Distributed earnings	\$ 12,837	\$ 819	\$ 12,321	\$ 974	\$ 11,845	\$ 1,066
Undistributed earnings/(loss)	(6,441)	(412)	(1,151)	(91)	1,568	142
Total	\$ 6,396	\$ 407	\$ 11,170	\$ 883	\$ 13,413	\$ 1,208
Basic weighted average common shares	29,106	1,844	27,805	2,275	26,793	2,439

Diluted EPS for Class A common shares using the If-Converted Method

Year Ended April 30, 2019

	Undistributed and distributed earnings to Class A Common Shares	Class A Common Shares	EPS*
Per basic	\$ 6,396	29,106	\$ 0.22
Common stock equivalents	—	429	
	6,396	29,535	0.22
Class B Common Share Conversion	407	1,844	
Diluted EPS for Class A Common Shares	\$ 6,803	31,379	\$ 0.22

Year Ended April 30, 2018

	Undistributed and distributed earnings to Class A Common Shares	Class A Common Shares	EPS*
Per basic	\$ 11,170	27,805	\$ 0.40
Common stock equivalents	—	392	
	11,170	28,197	0.40
Class B Common Share Conversion	883	2,275	
Diluted EPS for Class A Common Shares	\$ 12,053	\$ 30,472	\$ 0.40

Year Ended April 30, 2017

	Undistributed and distributed earnings to Class A Common Shares	Class A Common Shares	EPS*
Per basic	\$ 13,413	26,793	\$ 0.50
Common stock equivalents	—	335	
	13,413	27,128	0.49
Class B Common Share Conversion	1,208	2,439	
Diluted EPS for Class A Common Shares	\$ 14,621	29,567	\$ 0.49

Diluted EPS for Class B common shares using the Two-Class Method

Year Ended April 30, 2019

	Undistributed and distributed earnings to Class B Common Shares	Class B Common Shares	EPS*
Per basic	\$ 407	1,844	0.22
Reallocation of undistributed earnings from Class A Common Shares to Class B Common Shares	2	—	
Diluted EPS for Class B Common Shares	\$ 409	1,844	0.22

Year Ended April 30, 2018

	Undistributed and distributed earnings to Class B Common Shares	Class B Common Shares	EPS*
Per basic	\$ 883	2,275	\$ 0.39
Reallocation of undistributed earnings from Class A Common Shares to Class B Common Shares	—	—	
Diluted EPS for Class B Common Shares	\$ 883	2,275	\$ 0.39

Year Ended April 30, 2017

	Undistributed and distributed earnings to Class B Common Shares	Class B Common Shares	EPS*
Per basic	\$ 1,208	2,439	\$ 0.50
Reallocation of undistributed earnings from Class A Common Shares to Class B Common Shares	(2)	—	
Diluted EPS for Class B Common Shares	\$ 1,206	\$ 2,439	\$ 0.49

* Amounts adjusted for rounding

(t) Advertising

All advertising costs are expensed as incurred. Advertising expenses, which are included within sales and marketing expenses, were \$2.3 million, \$2.4 million and \$2.3 million in fiscal 2019, 2018 and 2017, respectively.

(u) Guarantees and Indemnifications

The Company accounts for guarantees in accordance with the Guarantee Topic of the FASB ASC. The Company's sales agreements with customers generally contain infringement indemnity provisions. Under these agreements, the Company agrees to indemnify, defend and hold harmless the customer in connection with patent, copyright or trade secret infringement claims made by third parties with respect to the customer's authorized use of the Company's products and services. The indemnity provisions generally provide for the Company's control of defense and settlement and cover costs and damages finally awarded against the customer, as well as the Company's modification of the product so it is no longer infringing or, if it cannot be corrected, return of the product for a refund. The sales agreements with customers sometimes also contain indemnity provisions for death, personal injury or property damage caused by the Company's personnel or contractors in the course of performing services to customers. Under these agreements, the Company agrees to indemnify, defend and hold harmless the customer in connection with death, personal injury and property

damage claims made by third parties with respect to actions of the Company's personnel or contractors. The indemnity provisions generally provide for the Company's control of defense and settlement and cover costs and damages finally awarded against the customer. The indemnity obligations contained in sales agreements generally have a limited monetary award. The Company has not previously incurred costs to settle claims or pay awards under these indemnification obligations. The Company accounts for these indemnity obligations in accordance with the Contingencies Topic of the FASB ASC, and records a liability for these obligations when a loss is probable and reasonably estimable. The Company has not recorded any liabilities for these agreements as of April 30, 2019 or 2018.

The Company warrants to its customers that its software products will perform in all material respects in accordance with the standard published specifications in effect at the time of delivery of the licensed products to the customer, generally for 90 days after delivery of the licensed products. Additionally, the Company warrants to its customers that services will be performed consistent with generally accepted industry standards or specific service levels through completion of the agreed upon services. If necessary, the Company will provide for the estimated cost of product and service warranties based on specific warranty claims and claim history. However, the Company has not incurred significant recurring expense under product or service warranties. Accordingly, the Company has no liabilities recorded for these agreements as of April 30, 2019 or 2018.

(v) Industry Segments

The Company operates and manages its business in three reportable segments. See Note 9 of the Consolidated Financial Statements.

(2) Investments

Investments consist of the following (in thousands):

	April 30,	
	2019	2018
Trading:		
Debt securities—Tax-exempt state and municipal bonds	\$ 16,192	\$ 23,889
Marketable equity securities	11,002	11,125
	<u>\$ 27,194</u>	<u>\$ 35,014</u>

The total carrying value of all investments on a consolidated basis was approximately \$27.2 million and \$35.0 million at April 30, 2019 and 2018, respectively. At April 30, 2019, there were approximately \$2.5 million in trading investments included in investments-noncurrent in the accompanying consolidated balance sheet. At April 30, 2018, there were approximately \$8.9 million in trading investments included in investments-noncurrent in the accompanying consolidated balance sheet.

The contractual maturities of debt securities classified as trading at April 30, 2019 and 2018 were as follows (in thousands):

	2019	2018
Due within one year	\$ 13,708	\$ 14,996
Due within two years	2,484	8,893
Due within three years	—	—
Due after three years	—	—
	<u>\$ 16,192</u>	<u>\$ 23,889</u>

In 2019, 2018 and 2017, the Company's investment portfolio of trading securities experienced net unrealized holding gains of approximately \$1.0 million and \$0.9 million and losses of \$1.3 million, respectively, which have been included in other income, net in the accompanying consolidated statements of operations. In 2019, 2018 and 2017, the Company's investment portfolio of trading securities experienced net realized holding losses of approximately \$0.6 million, \$0.7 million and \$0.9 million, respectively.

(3) Fair Value of Financial Instruments

The Company measures its investments based on a fair value hierarchy disclosure framework that prioritizes and ranks the level of market price observability used in measuring assets and liabilities at fair value. A number of factors affect market price observability including the type of asset or liability and its characteristics. This hierarchy prioritizes the inputs into three broad levels as follows:

- Level 1—Quoted prices in active markets for identical instruments.
- Level 2—Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets.
- Level 3—Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

The following is a general description of the valuation methodologies used for financial assets and liabilities measured at fair value, including the general classification of such assets and liabilities pursuant to the valuation hierarchy.

Cash Equivalents—Cash equivalents include investments in government obligation based money-market funds, other money market instruments and interest-bearing deposits with initial or remaining terms of three months or less. The fair value of cash equivalents approximates its carrying value due to the short-term nature of these instruments.

Marketable Securities—Marketable securities utilizing Level 1 inputs include active exchange-traded equity securities and equity index funds, and most U.S. government debt securities, as these securities all have quoted prices in active markets. Marketable securities utilizing Level 2 inputs include municipal bonds. We value these securities using market-corroborated pricing or other models that use observable inputs such as yield curves.

The following table presents our assets that we measured at fair value on a recurring basis and indicates the fair value hierarchy of the valuation techniques we utilized to determine such fair value (in thousands):

	April 30, 2019				April 30, 2018			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Cash equivalents	\$ 56,645	\$ —	\$ —	\$56,645	\$ 46,972	\$ —	\$ —	\$46,972
Marketable securities	11,002	16,192	—	27,194	11,125	23,889	—	35,014
Total	<u>\$ 67,647</u>	<u>\$ 16,192</u>	<u>\$ —</u>	<u>\$83,839</u>	<u>\$ 58,097</u>	<u>\$ 23,889</u>	<u>\$ —</u>	<u>\$81,986</u>

The carrying amounts of cash, trade accounts receivable and unbilled accounts receivable, accounts payable, accrued compensation and related costs, and other current liabilities approximate fair value because of their short-term maturities.

(4) Property and Equipment

Property and equipment consisted of the following at April 30, 2019 and 2018 (in thousands):

	2019	2018
Buildings and leasehold improvements	\$ 16,724	\$ 15,325
Computer equipment and purchased software	11,235	11,692
Office furniture and equipment	4,953	4,661
	32,912	31,678
Accumulated depreciation and amortization	(29,327)	(28,644)
	<u>\$ 3,585</u>	<u>\$ 3,034</u>

(5) Acquisitions

We account for business combinations using the acquisition method of accounting and accordingly, the identifiable assets acquired and liabilities assumed are recorded based upon management's estimates of current fair values as of the acquisition date. The estimation process includes analyses based on income and market approaches. Goodwill represents the excess purchase price over the fair value of net assets, including the amount assigned to identifiable intangible assets. The goodwill generated is due in part to the synergies that are not included in the fair value of identifiable intangible assets. Goodwill recorded in an acquisition is assigned to applicable reporting units based on expected revenues. Identifiable intangible assets with finite lives are amortized over their useful lives. Amortization of current technology is recorded in cost of revenues-license and amortization of all other intangible assets is recorded in amortization of acquisition-related intangibles. Acquisition-related costs, including advisory, legal, accounting, valuation

and other costs, are expensed in general and administrative expenses in the periods in which such costs are incurred. The results of operations of acquired businesses are included in the condensed consolidated financial statements from the acquisition date.

Effective November 21, 2017, the Company acquired certain assets of privately held Innovare Holding Co., Incorporated, a Delaware corporation and its subsidiaries (collectively, “Halo”) and a supplier of advanced analytics and business intelligence solutions, for the supply chain market, pursuant to the terms of an asset purchase agreement, dated as of November 21, 2017 (the “Purchase Agreement”).

Halo’s advanced analytics will be embedded into the Logility Voyager Solutions advanced analytics platform. These enriched analytics will leverage interactive visualization, machine learning algorithms, and artificial intelligence (AI) to transform both structured and unstructured data to accelerate business planning performance and proactively identify new business opportunities or mitigate risks. Customers on the DMI and NGC platforms will be able to add pre-packaged Halo advanced analytics capabilities to their subscriptions to drive quick insights and appropriate actions for their businesses. In addition, Logility will continue to offer Halo standalone to complement other enterprise systems.

Under the terms of the Purchase Agreement, the Company acquired the assets of Halo for cash consideration paid of approximately \$9.25 million, which represents a purchase price of approximately \$9.95 million net of a \$700,000 negative working capital adjustment, subject to certain post-closing adjustments, which included an additional negative working capital adjustment of \$100,000, thus resulting in an adjusted purchase price consolidation of \$9.15 million. The Company incurred acquisition costs of approximately \$149,000 during the year ended April 30, 2019. The operating results of Halo are not material for pro forma disclosure. We allocated \$6,339,000 of the total purchase price to goodwill, which has been assigned to the Supply Chain Management segment and is deductible for income tax purposes.

The following allocation of the total purchase price reflects the fair value of the assets acquired and liabilities assumed as of November 21, 2017 (in thousands):

		<u>Useful Life</u>
Accounts receivable, net	\$ 373	
Current assets	188	
Property and equipment, net	43	
Other assets	1,700	
Goodwill	6,339	
Non-compete	30	2 years
Trade name	140	2 years
Customer relationships	300	8 years
Current technology	3,100	3 years
Total assets acquired	<u>12,213</u>	
Current liabilities	(1,360)	
Long-term liabilities	(1,703)	
Total liabilities assumed	<u>(3,063)</u>	
Net assets acquired	<u>\$ 9,150</u>	

Non-compete agreements, trade name, customer relationships and current technology are being amortized on a straight-line basis over the remaining estimated economic life of the assets, including the period being reported. The fair value of deferred revenues in a business combination is considered to be an assumed liability (which must arise from a legal performance obligation) and, accordingly, is estimated based on the direct cost of fulfilling the obligation plus a normal profit margin, which approximates fair value. Also, in practice, the normal profit margin is limited to the profit margin on the costs to provide the product or service (that is, the fulfillment effort).

(6) Income Taxes

Income tax expense consisted of the following:

	Years ended April 30,		
	2019	2018	2017
	(in thousands)		
Current:			
Federal	\$ 184	\$ 2,298	\$ 5,643
State	334	743	676
	518	3,041	6,319
Deferred:			
Federal	256	321	558
State	64	300	117
	320	621	675
	<u>\$ 838</u>	<u>\$ 3,662</u>	<u>\$ 6,994</u>

The Company's actual income tax expense differs from the "expected" income tax expense calculated by applying the Federal statutory rate of 21.0% for fiscal year 2019, our blended U.S. Federal statutory tax rate of 30.3% for fiscal years 2018 and the Federal statutory rate of 35% for fiscal year 2017, to earnings before income taxes as follows:

	Years ended April 30,		
	2019	2018	2017
	(in thousands)		
Computed "expected" income tax expense	\$ 1,605	\$ 4,763	\$ 7,565
Increase (decrease) in income taxes resulting from:			
State income taxes, net of federal income tax effect	339	891	592
Research and development credits	(678)	(493)	(520)
Excess tax benefits from stock option deductions	(251)	(165)	(232)
Foreign tax credits	(112)	(211)	(170)
Rate change – tax reform	—	(1,206)	—
Other, net, including permanent items	(65)	83	(241)
	<u>\$ 838</u>	<u>\$ 3,662</u>	<u>\$ 6,994</u>

Our effective income tax rates were 11%, 23% and 32% in 2019, 2018 and 2017, respectively. Our effective income tax rate takes into account the source of taxable income, by state, and available income tax credits. The provision for income taxes in 2019, 2018 and 2017 includes approximately \$298,000, \$186,000 and \$253,000, respectively, in income tax benefits related to the tax benefits realized from stock option deductions.

The significant components of deferred income tax expense attributable to income from continuing operations before income taxes for the years ended April 30, 2019, 2018, and 2017 are as follows:

	Years ended April 30,		
	2019	2018	2017
	(in thousands)		
Deferred tax expense	\$ 330	\$ 1,823	\$ 968
Deferred tax benefit related to tax reform	—	(1,206)	—
(Decrease) increase in the valuation allowance for deferred tax assets	(10)	4	(293)
	<u>\$ 320</u>	<u>\$ 621</u>	<u>\$ 675</u>

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities at April 30, 2019 and 2018 are presented as follows:

	2019	2018
	(in thousands)	
Deferred tax assets:		
Accruals and expenses not deducted for tax purposes	\$ 328	\$ 339
State net operating loss carryforwards	217	226
Fixed asset basis differences	831	883
Nonqualified stock options	858	762
Deferred revenue	—	53
Total gross deferred tax assets	2,234	2,263
Less valuation allowance	(160)	(170)
Net deferred tax	2,074	2,093
Deferred tax liabilities:		
Capitalized computer software development costs	(2,766)	(2,432)
Net gains/losses on trading securities	(1,183)	(938)
Goodwill and intangible assets basis differences	(639)	(601)
Deferred agent commissions	(1,000)	(737)
Total gross deferred tax liabilities	(5,588)	(4,708)
Net deferred tax liabilities	\$ (3,514)	\$ (2,615)

At April 30, 2019, the Company had approximately \$5.4 million of various state net operating loss carryforwards which are available to offset future state taxable income, if any, through 2035.

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based upon reversal of deferred tax liabilities and expected future profitability, management believes it is more likely than not the Company will realize the benefits of these deductible differences, net of the existing valuation allowances, at April 30, 2019.

The Company applies the accounting provisions which require us to prescribe a recognition threshold and measurement attribution for the financial statement recognition and measurement of a tax position taken or expected to be taken within an income tax return.

As of April 30, 2019, 2018 and 2017, we recorded approximately \$43,000, \$56,000, and \$57,000, respectively, of unrecognized tax benefits, inclusive of interest and penalties, all of which would impact our effective tax rate if recognized. The liability for unrecognized tax benefits is recorded net of any federal tax benefit that would result from payment.

We recognize potential accrued interest and penalties related to unrecognized tax benefits within income tax expense. To the extent interest and penalties are not assessed with respect to uncertain tax positions, amounts accrued will be reduced and reflected as a reduction of the overall income tax provision. As of April 30, 2019 and 2018, we recorded a liability for potential penalties and interest of approximately \$22,000 and \$24,000, respectively, related to uncertain tax positions.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows, excluding interest and penalties (in thousands):

	2019	2018
Balance at beginning of the period	\$ 32	\$ 33
Decreases as a result of positions taken during prior periods	(11)	(1)
Increases as a result of positions taken during the current period	—	—
Balance at April 30,	\$ 21	\$ 32

We conduct business globally and, as a result, file consolidated income tax returns in the United States federal jurisdiction and in many state and foreign jurisdictions. We are no longer subject to state and local, or non-U.S. income tax examinations for years prior to 2001. We are no longer subject to U.S. federal income tax examination for years prior to 2015.

During the years ended April 30, 2019 and 2018, we recorded research and development state tax credits against payroll taxes of approximately \$488,000 and \$290,000, respectively, which reduced general and administrative expenses by the same amounts.

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act (the “Act”), which significantly changed U.S. tax law. The Act lowered our U.S. statutory federal income tax rate from 35% to 21% effective January 1, 2018. For fiscal year 2018, our blended U.S. federal statutory tax rate was 30.3%. This is the result of using the tax rate of 35% for the first eight months of fiscal year 2018 and the reduced tax rate of 21% for the final four months of fiscal year 2018. During the year ended April 30, 2018, we recorded a \$1.2 million benefit from the impact of changes in the tax rate, primarily on deferred tax assets and liabilities, which was included in income tax expense on our consolidated statement of operations and deferred income taxes on our consolidated balance sheet. We remeasured our deferred taxes to reflect the reduced rate that will apply when these deferred taxes are settled or realized in future periods. To calculate the remeasurement of deferred taxes, we estimated when the existing deferred taxes will be settled or realized.

(7) Shareholders’ Equity

Except for the election or removal of directors and class votes as required by law or our Articles of Incorporation, holders of both classes of common stock vote as a single class on all matters, with each Class A common share entitled to cast one-tenth vote per share and each Class B common share entitled to cast one vote per share. Neither class has cumulative voting rights. Holders of Class A common shares, as a class, are entitled to elect 25% of the board of directors (rounded up to the nearest whole number of directors) if the number of outstanding Class A common shares is at least 10% of the number of outstanding shares of both classes of common stock. No cash or property dividend may be paid to holders of Class B common shares during any fiscal year of the Company unless a dividend of \$0.05 per share has been paid in such year on each outstanding Class A common share. This \$0.05 per share annual dividend preference is noncumulative. Dividends per Class B common share during any fiscal year may not exceed dividends paid per Class A common share during such year. Each Class B common share is convertible at any time into one Class A common share at the option of the shareholder.

Stock Option Plans

As of April 30, 2019, the Company has outstanding stock options granted pursuant to four stock option plans. The 2001 Stock Option Plan (the “2001 Option Plan”) became effective on September 1, 2000. This Plan was terminated and replaced by the 2011 Equity Compensation Plan (the “2011 Option Plan”) effective May 17, 2010. Options outstanding under the 2001 Option Plan remain in effect, but no new options may be granted under the plan. Effective July 9, 2009, we adopted the Logility, Inc. 1997 Stock Plan and the Logility, Inc. 2007 Stock Plan as equity plans of American Software, although we will not grant any additional stock options under these plans.

Under the 2011 Option Plan, options to purchase Class A common shares are granted in the form of both incentive stock options and non-qualified stock options. The number of options granted under this plan is determined with each grant. By resolution of the Board of Directors, non-employee directors receive grants of non-qualified options to purchase 5,000 shares upon election and 3,000 shares at the end of each fiscal quarter. The price of such grants is equal to the closing market price of the shares on the date of grant. Options are exercisable based on the terms of such options, but no more than six years after the date of grant (or five years for incentive stock options granted to any person who owns 10% or more of the combined voting power of all classes of capital stock of the Company at the time of grant). A total of 7,000,000 shares are authorized for issuance pursuant to options granted under this Plan. Incentive and nonqualified options exercisable at April 30, 2019, 2018 and 2017 totaled 1,086,180, 965,416, and 1,365,586, respectively. Options available for grant at April 30, 2019, for the 2011 Option Plan are 89,143 shares.

At the 2018 Annual Meeting, the shareholders voted on increasing the shares authorized under the 2011 Option Plan from 6,000,000 to 7,000,000. When stock options are exercised, it is the Company’s policy to issue stock from authorized shares rather than treasury shares.

A summary of changes in outstanding options for the year ended April 30, 2019 is as follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at May 1, 2018	3,275,836	\$ 9.90		
Granted	1,313,000	12.41		
Exercised	(602,176)	8.89		
Forfeited	(1,600)	9.55		
Expired	(2,000)	8.11		
Outstanding at April 30, 2019	3,983,060	\$ 10.88	3.8	\$ 8,662,677
Exercisable at April 30, 2019	1,086,180	\$ 9.80	2.6	\$ 3,418,476

The weighted-average grant date fair value of stock options granted during the years ended April 30, 2019, 2018, and 2017 is \$2.58, \$2.01, and \$1.96 per share, respectively. The fair value of each option award is estimated on the date of grant using the Black-Scholes option pricing model with the following weighted-average assumptions for the years ended April 30, 2019, 2018, and 2017:

	2019	2018	2017
Dividend yield	3.6%	3.9%	4.0%
Expected volatility	30.0%	28.9%	32.7%
Risk-free interest rate	2.9%	1.9%	1.2%
Expected term	5 years	5 years	5 years

The expected volatility is based on the historical volatility and implied volatility. The Company uses historical data to estimate stock option exercise and forfeiture rates. The expected term represents the period over which the share-based awards are expected to be outstanding. Beginning after December 31, 2007, the expected term was estimated using historical data. The dividend yield is an estimate of the expected dividend yield on the Company's stock. The risk-free rate is based on U.S. Treasury yields in effect at the time of the grant for the expected term of the stock options.

Options issued after May 1, 2007 with graded vesting are valued as a single award. The total value of the award is expensed on a straight-line basis over the vesting period with the amount of compensation cost recognized at any date at least equal to the portion of the grant date value of the award that is vested at that date. During the years ended April 30, 2019, 2018, and 2017, we issued 602,176, 984,310 and 754,811 shares of common stock, respectively, resulting from the exercise of stock options. The total intrinsic value of options exercised during the years ended April 30, 2019, 2018 and 2017 based on market value at the exercise dates was \$2,441,830, \$2,999,372 and \$2,280,650 respectively. The fair value of grants vested during the years ended April 30, 2019, 2018 and 2017 was \$1,470,840, \$1,287,222 and \$1,550,190, respectively. As of April 30, 2019, unrecognized compensation cost related to unvested stock option awards approximated \$3.5 million and is expected to be recognized over a weighted average period of 1.9 years.

Stock Repurchases

On August 19, 2002, our Board of Directors approved a resolution authorizing the repurchase of up to 2.0 million shares of our Class A common stock. These repurchases have been and will be made through open market purchases at prevailing market prices. The timing of any repurchases will depend upon market conditions, the market price of our common stock and management's assessment of our liquidity and cash flow needs. For this repurchase plan, through April 30, 2019, we have repurchased 1,053,679 shares of common stock at a cost of approximately \$6.2 million. Under all repurchase plans as of April 30, 2019, we have repurchased 4,588,632 shares of common stock at a cost of approximately \$25.6 million.

(8) Commitments and Contingencies

(a) Leases

The Company leases office facilities and equipment under various operating leases. Rental expense for these leases approximated \$1.3 million, \$1.1 million, and \$1.0 million for the years ended April 30, 2019, 2018, and 2017, respectively.

The Company leased several floors of its headquarters in Atlanta, GA to tenants under various operating leases. Rental income for these leases approximated \$350,000, \$357,000 and \$538,000 for the years ended April 30, 2019, 2018 and 2017, respectively. In addition, the Company owned other properties leased under various operating leases. On February 23, 2017, the Company divested

the property to which these leases were associated. Rental income for these leases approximated \$0, \$0 and \$236,000 for the years ended April 30, 2019, 2018, and 2017, respectively. The rental income is included as a component of Other income, net in the accompanying consolidated statements of operations.

Future minimum lease payments under noncancelable operating leases (with initial or remaining lease terms in excess of one year) as of April 30, 2019 are as follows (due to existence of renewal or escalation clauses) (in thousands):

Years ended April 30:	
2020	\$ 847
2021	790
2022	706
2023	433
2024	317
Thereafter	17
	<u>\$ 3,110</u>

Future minimum lease rentals receivable under noncancelable operating leases (with initial or remaining lease terms in excess of one year) as of April 30, 2019 are as follows (already included or prorated at the Company's occupied building) (in thousands):

Years ended April 30:	
2020	\$ 194
2021	105
2022	55
2023	—
2024	—
Thereafter	—
	<u>\$ 354</u>

(b) 401(k) Profit Sharing Plan

Employees are offered the opportunity to participate in the Company's 401(k) Profit Sharing Plan ("the 401(k) Plan"), which is intended to be a tax-qualified defined contribution plan under Section 401(k) of the Internal Revenue Code. Under the 401(k) Plan, employees are eligible to participate on the first day of the month following the date of hire. Eligible employees may contribute up to 60% of their salary to the 401(k) Plan. Subject to certain limitations, the Company may make a discretionary profit sharing contribution at an amount determined by the board of directors of the Company. The Company's profit sharing contribution was \$429,000 for 2019, \$330,000 for 2018 and we did not make any profit sharing contributions for 2017.

(c) Contingencies

The Company more often than not indemnifies its customers against damages and costs resulting from claims of patent, copyright, or trademark infringement associated with use of the Company's products. The Company historically has not been required to make any payments under such indemnifications. However, the Company continues to monitor the circumstances that are subject to the indemnifications to identify whether it is probable that a loss has occurred, and would recognize any such losses under the indemnifications when those losses are estimable.

In addition, the Company warrants to customers that the Company's products operate substantially in accordance with the software product's specifications. Historically, no costs have been incurred related to software product warranties and none are expected in the future, and as such no accruals for software product warranty costs have been made. Additionally, the Company is involved in various claims arising in the ordinary course of business. In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on the financial position or results of operations of the Company.

(9) Segment Information

FASB ASC 280, *Segment Reporting*, establishes standards for reporting information about operating segments. Operating segments are defined as components of a public entity about which separate financial information is available that is evaluated regularly by the chief operating decision makers (“CODMs”), or decision making group, in deciding how to allocate resources and in assessing performance. Our CODMs are our Principal Executive Officer (“PEO”) and President. While our CODMs are apprised of a variety of financial metrics and information, we manage our business primarily on a segment basis, with the CODMs evaluating performance based upon segment operating profit or loss that includes an allocation of common expenses, but excludes certain unallocated corporate expenses, which are included in the Other segment. Our CODMs review the operating results of our three segments, assess performance and allocate resources in a manner that is consistent with the changing market dynamics that we have experienced. As a result, in the third quarter of fiscal 2018, we updated our operating segments to reflect the fact that we provide our software solutions through three major operating segments, which are further broken down into a total of six major product and service groups. The three operating segments are: (1) Supply Chain Management (“SCM”), (2) Information Technology Consulting (“IT Consulting”) and (3) Other.

The SCM segment consists of Logility, which provides supply chain optimization and advance retail planning solutions, as an integrated suite of sales and operations planning, demand optimization, inventory optimization, manufacturing planning and scheduling, supply optimization, retail allocation and merchandise planning and transportation optimization, as well as (i) DMI, which provides collaborative supply chain solutions to streamline and optimize the forecasting, inventory, production, supply, allocation, distribution and management of products between trading partners, (ii) NGC, which provides cloud solutions for supply chain management, PLM, quality control, vendor compliance and enterprise resource planning for both retailers and manufacturers in the apparel, sewn products and furniture industries, and (iii) Halo, which provides advanced analytics and business intelligence solutions for the supply chain market. The IT Consulting segment consists of The Proven Method, Inc., an IT staffing and consulting services firm, which provides support for our software products, such as software enhancements, documentation, updates, customer education, consulting, systems integration services, maintenance and support services. The Other segment consists of (i) American Software ERP, which provides purchasing and materials management, customer order processing, financial, e-commerce and traditional manufacturing solutions, and (ii) unallocated corporate overhead expenses.

All of our revenues are derived from external customers. We do not have any inter-segment revenue. Our income taxes and dividends are paid at a consolidated level. Consequently, it is not practical to show these items by operating segment.

Following is information related to each segment as of and for the years ended April 30, 2019, 2018 and 2017:

	2019	2018	2017
Revenues:			
Supply Chain Management	\$ 86,296	\$ 91,613	\$ 84,058
IT Consulting	20,007	18,460	19,633
Other	2,403	2,630	2,595
	<u>\$ 108,706</u>	<u>\$ 112,703</u>	<u>\$ 106,286</u>
Operating income/(loss) before intersegment eliminations:			
Supply Chain Management	\$ 15,967	\$ 19,580	\$ 13,103
IT Consulting	964	985	890
Other	(11,655)	(7,034)	(6,227)
	<u>\$ 5,276</u>	<u>\$ 13,531</u>	<u>\$ 7,766</u>
Intersegment eliminations*:			
Supply Chain Management	\$ —	\$ —	\$ —
IT Consulting	—	—	—
Other	—	—	—
	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>
Operating income/(loss) after intersegment eliminations:			
Supply Chain Management	\$ 15,967	\$ 19,580	\$ 13,103
IT Consulting	964	985	890
Other	(11,655)	(7,034)	(6,227)
	<u>\$ 5,276</u>	<u>\$ 13,531</u>	<u>\$ 7,766</u>
Capital expenditures:			
Supply Chain Management	\$ 375	\$ 263	\$ 321
IT Consulting	1	10	2
Other	876	1,155	408
	<u>\$ 1,252</u>	<u>\$ 1,428</u>	<u>\$ 731</u>
Capitalized software:			
Supply Chain Management	\$ 5,961	\$ 4,804	\$ 3,724
IT Consulting	—	—	—
Other	—	—	—
	<u>\$ 5,961</u>	<u>\$ 4,804</u>	<u>\$ 3,724</u>
Depreciation and amortization:			
Supply Chain Management	\$ 7,372	\$ 5,827	\$ 6,173
IT Consulting	7	7	7
Other	340	196	460
	<u>\$ 7,719</u>	<u>\$ 6,030</u>	<u>\$ 6,640</u>
Interest income:			
Supply Chain Management	\$ 1,408	\$ 1,043	\$ 817
IT Consulting	—	—	—
Other	684	532	440
	<u>\$ 2,092</u>	<u>\$ 1,575</u>	<u>\$ 1,257</u>
Earnings/(loss) before income taxes:			
Supply Chain Management	\$ 16,335	\$ 20,026	\$ 13,050
IT Consulting	964	985	890
Other	(9,658)	(5,296)	7,675
	<u>\$ 7,641</u>	<u>\$ 15,715</u>	<u>\$ 21,615</u>

*Fiscal 2018 and 2017 recast to adjust for corporate overhead and other common expense, which were no longer allocated starting in fiscal 2019.

	April 30, 2019	April 30, 2018
Total Consolidated Assets:		
Supply Chain Management	\$ 112,604	\$ 112,881
IT Consulting	4,599	5,538
Other	44,107	44,546
	<u>\$ 161,310</u>	<u>\$ 162,965</u>

International Revenue and Significant Customer

International revenues approximated \$21.4 million or 20%, \$21.8 million or 19%, and \$18.8 million or 18%, of consolidated revenues for the years ended April 30, 2019, 2018, and 2017, respectively, and were derived primarily from customers in Canada and Europe. International revenue is based on the delivery of software and performance of services.

No single customer accounted for more than 10% of total revenues for the years ended April 30, 2019, April 30, 2018 and April 30, 2017.

(10) Financial Statements and Supplementary Data (Unaudited)

The following schedule presents results for each quarter in the years ended April 30, 2019 and 2018 (in thousands, except per share amounts):

	Total revenues	Gross margin	Operating income	Net earnings	Diluted earnings per share*
Quarter ended:					
July 31, 2018	\$ 27,399	\$ 13,752	\$ 607	\$ 1,385	\$ 0.04
October 31, 2018	28,033	14,667	1,526	1,243	0.04
January 31, 2019	27,003	14,039	2,130	2,301	0.07
April 30, 2019	26,271	14,282	1,013	1,874	0.06
Year ended April 30, 2019	<u>\$ 108,706</u>	<u>\$ 56,740</u>	<u>\$ 5,276</u>	<u>\$ 6,803</u>	<u>\$ 0.22</u>
Quarter ended:					
July 31, 2017	\$ 26,886	\$ 15,225	\$ 3,622	\$ 2,725	\$ 0.09
October 31, 2017	26,337	14,006	3,242	2,480	0.08
January 31, 2018	30,117	17,046	4,204	5,580	0.18
April 30, 2018	29,363	16,426	2,463	1,268	0.04
Year ended April 30, 2018	<u>\$ 112,703</u>	<u>\$ 62,703</u>	<u>\$ 13,531</u>	<u>\$ 12,053</u>	<u>\$ 0.40</u>

* Table may contain rounding

(11) Subsequent Events

On May 29, 2019, our Board of Directors declared a quarterly cash dividend of \$0.11 per share of our Class A and Class B common stock. The cash dividend is payable on August 30, 2019 to Class A and Class B shareholders of record at the close of business on August 16, 2019.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934 (“Exchange Act”)) are designed to provide reasonable assurance that information required to be disclosed in our reports filed or submitted under the Exchange Act, such as this annual report on Form 10-K, is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Our disclosure controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure.

Our principal executive officer and principal financial officer, with the assistance of our Disclosure Committee, have conducted an evaluation of the effectiveness of our disclosure controls and procedures as of April 30, 2019. We perform this evaluation on a quarterly basis so that the conclusions concerning the effectiveness of our disclosure controls and procedures can be reported in our annual report on Form 10-K and quarterly reports on Form 10-Q. Based on this evaluation, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures were effective to provide such reasonable assurance as of April 30, 2019.

We believe our consolidated financial statements fairly present in all material respects our financial position, results of operations and cash flows in our annual report on Form 10-K. The unqualified opinion of our independent registered public accounting firm on our consolidated financial statements as of April 30, 2019 and 2018 and for each of the years in the three-year period ended April 30, 2019 is included in this annual report on Form 10-K.

Changes in Internal Control over Financial Reporting

There have not been any changes in the Company’s internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the last fiscal quarter of fiscal 2019 to which this report relates that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

Reports on Internal Control Over Financial Reporting

Management’s report on internal control over financial reporting and the report of the independent registered public accounting firm on internal control over financial reporting are included under Item 8, “Financial Statements and Supplementary Data,” of this report.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item is incorporated by reference from the information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or about July 30, 2019 (the "Proxy Statement") under the captions “Election of Directors,” “Executive Compensation,” “Section 16(a) Beneficial Ownership Reporting Compliance,” “Code of Business Conduct and Ethics,” and “Committees of the Board of Directors.”

ITEM 11. EXECUTIVE COMPENSATION

This information 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 management and others is set forth under the caption “Security Ownership of Certain Beneficial Owners and Management” in the Proxy Statement, which information is incorporated herein by reference.

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

Policy Regarding Transactions with Related Persons

On December 8, 2003, our Board of Directors adopted a resolution directing the Audit Committee of the Board of Directors to establish and implement procedures for identifying and conducting an appropriate review of any proposed transaction that meets the definition of “related party transaction” within the meaning of Item 404 of SEC Regulation S-K. In January 2004, the Audit Committee adopted written procedures in accordance with such direction. Under those procedures, the Audit Committee reviews and evaluates any proposed related party transaction and determines whether the terms of such transaction, judged at the time of the determination, are fair to the Company. Our officers are instructed that when a related party transaction is proposed, they are to bring it to the attention of the Audit Committee, which then reviews the transaction and makes a determination of whether it meets the above standard. The Audit Committee is required to prepare a report of its deliberations, conclusions and recommendations, and furnish that report to the full Board of Directors.

Information regarding director independence is set forth under the captions “Director Independence” and “Committees of the Board of Directors” in the Proxy Statement, which information is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

This information is set forth under the caption “Ratification of Appointment of Independent Registered Public Accounting Firm” in the Proxy Statement, which information is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) *Documents filed as part of this report.*

1. *Financial statements; All financial statements of the Company as described in Item 8 of this report on Form 10-K.*

2. *Financial statement schedule included in Part IV of this Form:*

Schedule II—Consolidated Valuation Accounts—for the three years ended April 30, 2019

Page

86

All other financial statements and schedules not listed above are omitted as the required information is not applicable or the information is presented in the financial statements or related notes.

3. Exhibits

The following exhibits are filed herewith or incorporated herein by reference:

- 3.1 The Company's Amended and Restated Articles of Incorporation, and amendments thereto.(1)(P)
- 3.2 The Company's Amended and Restated By-Laws dated May 18, 2009.(2)
- 10.1 American Software, Inc. 401(k)/Profit Sharing Plan and Trust Agreement.(3)(P)
- 10.2 Amendment to American Software, Inc. 401(k)/Profit Sharing Plan and Trust Agreement.(4)
- 10.3 The Company's 2011 Equity Compensation Plan, as amended.(5)
- 10.4 Retention Agreement, dated as of July 11, 2016, by and between American Software, Inc. and James C. Edenfield.(6)
- 10.5 Retention Agreement, dated as of July 11, 2016, by and between American Software, Inc. and J. Michael Edenfield.(7)
- 10.6 Retention Agreement, dated as of July 11, 2016, by and between American Software, Inc. and Vincent C. Klinges.(8)
- 10.7 Retention Agreement, dated as of July 11, 2016, by and between American Software, Inc. and James R. McGuone.(9)
- 10.8 Retention Agreement, dated as of July 11, 2016, by and between American Software, Inc. and H. Allan Dow. (10)
- 21.1 List of Subsidiaries.
- 23.1 Consent of Independent Registered Public Accounting Firm.
- 31.1 Certification Pursuant to Rule 13a-14(a)/15d-14(a).
- 31.2 Certification Pursuant to Rule 13a-14(a)/15d-14(a).
- 32.1 Certifications Pursuant to Section 906 of Sarbanes-Oxley Act of 2002.
- 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.

-
- (1) Incorporated by reference herein. Filed by the Company as an exhibit to its quarterly report filed on Form 10-Q for the quarter ended October 31, 1990.
 - (2) Incorporated by reference herein. Filed by the Company as an exhibit to its quarterly report filed on Form 10-Q for the quarter ended January 31, 2010.
 - (3) Incorporated by reference herein. Filed by the Company as an exhibit to its Registration Statement No. 33-55214 filed on Form S-8 on December 1, 1992.
 - (4) Incorporated by reference herein. Filed by the Company as an exhibit to its annual report filed on Form 10-K for the fiscal year ended April 30, 2002.
 - (5) Incorporated by reference herein. Filed by the Company as an appendix to its Definitive Proxy Statement filed on July 27, 2017.
 - (6) Incorporated by reference herein. Filed by the Company as exhibit 10.1 to its current report on Form 8-K filed on July 15, 2016.
 - (7) Incorporated by reference herein. Filed by the Company as exhibit 10.2 to its current report on Form 8-K filed on July 15, 2016.

- (8) Incorporated by reference herein. Filed by the Company as exhibit 10.3 to its current report on Form 8-K filed on July 15, 2016.
- (9) Incorporated by reference herein. Filed by the Company as exhibit 10.4 to its current report on Form 8-K filed on July 15, 2016.
- (10) Incorporated by reference herein. Filed by the Company as exhibit 10.1 to its current report on Form 8-K/A filed on July 13, 2017.

SCHEDULE II

AMERICAN SOFTWARE, INC.
CONSOLIDATED VALUATION ACCOUNTS
Years ended April 30, 2019, 2018, 2017
(In thousands)

Allowance for Doubtful Accounts

Year ended:	Balance at beginning of year	Amounts charged to expense	Other Additions (1)	Deductions (2)	Balance at end of year
April 30, 2019	\$ 159	—	—	6	153
April 30, 2018	\$ 171	24	—	36	159
April 30, 2017	\$ 178	39	—	46	171

- (1) Recovery of previously written-off amounts.
- (2) Write-off of uncollectible accounts.

Deferred Income Tax Valuation Allowance

The deferred tax valuation allowance roll-forward is included in Item 8 of this Report in the Notes to Consolidated Financial Statements—Note 6.

See accompanying report of independent registered public accounting firm.

ITEM 16. FORM 10-K SUMMARY.

None.

American Software, Inc. Subsidiaries

<u>Name of Subsidiary</u>	<u>Jurisdiction of Incorporation</u>
American Software Research and Development LLC	Georgia
American Software USA, LLC	Georgia
ASI Properties II, LLC	Georgia
Logility, Inc.	Georgia
New Generation Computing, Inc.	Florida
The Proven Method, Inc.	Georgia
Demand Management, Inc.	Georgia
Halo Acquisition Company LLC	Georgia
AdapChain Solutions PVT LTD	India
Logility Solutions PVT LTD	India
Logility NZ (UC)	New Zealand

Consent of Independent Registered Public Accounting Firm

The Board of Directors
American Software, Inc.:

We consent to the incorporation by reference in the registration statements (No. 333-191664 on Form S-8, No. 333-168943 on Form S-8, No. 333-160559 on Form S-8, No. 333-206584 on Form S-8, No. 333-213402 on Form S-8 and No. 333-220390 on Form S-8) of American Software, Inc. of our reports dated July 12, 2019, with respect to the consolidated balance sheets of American Software, Inc. and subsidiaries as of April 30, 2019 and 2018, the related consolidated statements of operations, shareholders' equity and cash flows for each of the years in the three-year period ended April 30, 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 April 30, 2019, which reports appear in the April 30, 2019 annual report on Form 10-K of American Software, Inc.

Our report dated July 12, 2019 contains an explanatory paragraph that states that as discussed in Note 1(n) to the consolidated financial statements, the Company has changed its method of accounting for revenue recognition in 2019 due to the adoption of ASU 2014-09, *Revenue from Contracts with Customers* and the related amendments.

/s/ KPMG LLP

Atlanta, Georgia
July 12, 2019

**Certifications Pursuant to Section 906 of
The Sarbanes-Oxley Act of 2002 (18 U.S.C Section 1350)**

The undersigned, as the Principal Executive Officer of American Software, Inc., certifies that, to the best of his knowledge and belief, the Annual Report on Form 10-K for the fiscal year ended April 30, 2019 (the "Report"), which accompanies this certification, fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of American Software, Inc. at the dates and for the periods indicated. The foregoing certification is made pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350) and shall not be relied upon for any other purpose.

This 12th day of July, 2019

/s/ James C. Edenfield

James C. Edenfield
Executive Chairman, Treasurer and Director
(Principal Executive Officer)

The undersigned, as the Chief Financial Officer of American Software, Inc., certifies that, to the best of his knowledge and belief, the Annual Report on Form 10-K for the fiscal year ended April 30, 2019 (the "Report"), which accompanies this certification, fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of American Software, Inc. at the dates and for the periods indicated. The foregoing certification is made pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350) and shall not be relied upon for any other purpose.

This 12th day of July, 2019

/s/ Vincent C. Klinges

Vincent C. Klinges
Chief Financial Officer
(Principal Financial Officer)

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to American Software, Inc. and will be retained by American Software, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

The information in this Exhibit 32.1 shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, except as shall be expressly set forth by specific reference in such filing.

[This page intentionally left blank]

