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MANHATTAN ASSOCIATES INC

Form 10-K

February 08, 2019

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2018

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: 000-23999

Manhattan Associates, Inc.

(Exact name of registrant as specified in its charter)

Georgia  
(State or other jurisdiction of  
incorporation or organization+ )  
2300 Windy Ridge Parkway, Tenth Floor  
Atlanta, Georgia  
( Address of principal executive offices )  
Registrant's telephone number, including area code: (770) 955-7070

58-2373424  
(I.R.S. Employer  
Identification No.)  
30339  
( Zip Code )

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

Title of each class	Name of each exchange on which registered
Common Stock, \$.01 par value per share	The Nasdaq Stock Market LLC

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

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

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

Note – Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Exchange Act from their obligations under those Sections.

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer	Accelerated filer
Non-accelerated filer	Smaller reporting company
Emerging Growth Company	

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

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant as of June 30, 2018 was \$3,091,365,142, which was calculated based upon a closing sales price of \$47.01 per share of the Common Stock as reported by the Nasdaq Global Select Market on the same day. As of January 31, 2019, the Registrant had outstanding 65,017,683 shares of Common Stock.

#### DOCUMENTS INCORPORATED BY REFERENCE

The Registrant's definitive Proxy Statement for the Annual Meeting of Shareholders to be held May 14, 2019 is incorporated by reference in Part III of this Form 10-K to the extent stated herein.

**MANHATTAN ASSOCIATES, INC.**

Annual Report on Form 10-K

For the Fiscal Year Ended December 31, 2018

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Exhibit 21.1 List of Subsidiaries

Exhibit 23.1 Consent of Ernst & Young LLP

Exhibit 31.1 Section 302 Certification of Principal Executive Officer

Exhibit 31.2 Section 302 Certification of Principal Financial Officer

Exhibit 32 Section 906 Certification of CEO and CFO

Exhibit 101

## Forward-Looking Statements

Certain statements contained in this filing are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, including but not limited to statements related to expectations about global macroeconomic trends and industry developments, plans for future business development activities, anticipated costs of revenues, product mix and service revenues, research and development and selling, general and administrative activities, and liquidity and capital needs and resources. When used in this Annual Report, on Form 10-K (this “Form 10-K”) the words “may,” “expect,” “forecast,” “anticipate,” “intend,” “plan,” “believe,” “could,” “seek,” “project,” “estimate,” expressions are generally intended to identify forward-looking statements. Undue reliance should not be placed on these forward-looking statements, which reflect opinions only as of the date of this Form 10-K. Such forward-looking statements are subject to risks, uncertainties, and other factors that could cause actual results to differ materially from future results expressed or implied by such forward-looking statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and that actual results may differ materially from those contemplated by such forward-looking statements.

Some of the factors that could cause actual results to differ materially from the results discussed in forward-looking statements include:

- The operational and financial effects of our business transition to cloud subscription-based solutions;
- economic, political and market conditions, including disruption in the retail sector;
- our ability to attract and retain highly skilled employees;
- competition;
- our dependence on a single line of business;
- our dependence on generating revenue from software licenses and cloud subscriptions to drive business;
- undetected errors or “bugs” in our software;
- the risk of defects, delays or interruptions in our cloud subscription services;
- possible compromises of our data protection and IT security measures;
- risks associated with large system implementations;
- possible liability to customers if our products fail;
- the requirement to maintain high quality professional service capabilities;
- the risks of international operations, including foreign currency exchange risk;
- the possibility that research and developments investments may not yield sufficient returns;
- the long sales cycle associated with our products;
  - the difficulty of predicting operating results;
- the need to continually improve our technology;
- risks associated with managing growth;
- reliance on third party and open source software;
- the need for our products to interoperate with other systems;
- the need to protect our intellectual property, and our exposure to intellectual property claims of others;
- economic conditions and regulatory changes caused by the United Kingdom’s pending exit from the European Union;
- the possible effects on international commerce of new or increased tariffs, or a “trade war;” and
- other risks described under the heading “Risk Factors” in Part I, Item 1A of this Form 10-K.

We undertake no obligation to update or revise forward-looking statements to reflect changed assumptions, the occurrence of unanticipated events or changes in future operating results.



PART I

**Item 1. Business**

Overview

Manhattan Associates was founded in 1990 in Manhattan Beach, California and incorporated in Georgia in 1998. References in this filing to the “Company,” “Manhattan,” “Manhattan Associates,” “we,” “our” and “us” refer to Manhattan Associates, Inc., our predecessors, and our wholly-owned and consolidated subsidiaries. Our principal executive offices are located at 2300 Windy Ridge Parkway, Tenth Floor, Atlanta, Georgia 30339, and our telephone number is 770-955-7070.

We develop, sell, deploy, service and maintain software solutions designed to manage supply chains, inventory and omnichannel operations for retailers, wholesalers, manufacturers, logistics providers and other organizations. Our customers include many of the world’s premier and most profitable brands.

Specifically, Manhattan Associates develops modern commerce solutions that help its customers in three distinct areas of their business:

**Supply Chain** - We provide companies the tools needed to manage distribution and optimize transportation costs throughout their entire commercial network. Manhattan’s Warehouse Management solutions are widely regarded as industry-leading systems designed to optimize productivity and throughput in distribution centers and warehouses around the world. Our software helps optimize fulfillment models to support our customers across a wide range of channels and fulfillment methods. Likewise, we provide shippers and carriers the most comprehensive transportation management solutions in the market. This includes software to help them move freight via the most cost-effective means possible while also meeting service-level expectations, to model their transportation network, and to automate the procurement-to-pay process.

**Omnichannel** - Meeting ever-evolving consumer expectations of service, inventory availability and delivery convenience is a challenge every merchant must meet head on. Manhattan’s Omnichannel solutions provide an operating platform for direct, brick and mortar, and wholesale businesses. Comprising Order Management, Point of Sale, and Customer Engagement as its core applications, Manhattan Omnichannel solutions provide CRM capabilities for contact center agents; end-to-end process enablement for store associates, and enterprise-wide inventory availability determination and order fulfillment optimization.

**Inventory** – Manhattan’s solutions provide distributors of finished goods (apparel, food, auto parts, pharmaceuticals, etc.) the ability to forecast demand, determine when, where and how much inventory is needed and translate this into a profitable inventory buying plan. These areas are ever more complex and critical to profitability as more wholesalers and retailers engage in omnichannel operations. Through the use of advanced science and sophisticated analytics, customer service level is maximized with the minimum necessary inventory investment. Industry changes driven by omni-channel retail, pharmaceutical regulations and other trends make this an area of particular need for many retailers and wholesale distributors.

Manhattan Associates’ Software Solution Portfolios

Our portfolio of solutions takes a platform-based approach to key areas. This approach employs a holistic technology approach that provides customers with three major benefits:

**Cross-Functional Business Solutions** - By virtue of shared data, taxonomy and interfaces, platform solutions enable the organization to tackle business challenges that might otherwise be too technically daunting to achieve. For example, the ability to manage a buy online, pickup in store process at scale requires best in class capability within

Order Management and Point of Sale/Store Systems. By building our solutions on a set of common, microservice based components, we eliminate data and process redundancy and deliver end-to-end process support for the modern merchant.

**Lower Total Cost of Ownership** - A single set of tools to administrate security, resource management, system configuration and integration across all three functional disciplines allows for economies of scale within IT departments. The use of standard technologies, development tools and languages also ensures needed technical skills are readily available in the marketplace. Furthermore, we also offer cloud-based/subscription-based access to certain of our applications, thus lowering initial and ongoing complexity of ownership.

**The Power of Shared Components** - When an organization has multiple disparate systems, there are frequently costly, inefficient and redundant capabilities found across the enterprise. Examples include yard management, parcel shipping and inventory visibility. The consequences of duplicate systems range from the simple confusion brought on by different naming conventions to the expensive and complex data becoming out of sync, resulting in missed appointments, chargebacks and other issues.

## Supply Chain Solutions

As previously described, Manhattan's Supply Chain Solutions are focused on the distribution and transportation operations of the enterprise. There are three main components of Manhattan's Supply Chain Solutions:

**Distribution Management** - These applications comprise Manhattan's Warehouse Management Solutions (WMS) commonly used to manage the complexity of the modern distribution center. WMS manages the flow of goods and information across the distribution center. The complete distribution management suite not only includes capabilities focused on execution within the distribution center, but also on the management of personnel, performance, automation tools, robotics, and the overall distribution center layout. Manhattan's WMS customers can benefit from its embedded warehouse execution system that coordinates the interaction between automation, robotics and labor for maximum efficiency. Manhattan's WMS also enables the efficient utilization of a single distribution center for direct-to-consumer, retail replenishment and high-volume wholesale fulfillment. Our WMS provides the customer the most productive operation that can scale to meet the highest demands during peak season, yet can still operate effectively and profitably throughout the course of the year.

**Transportation Management** - Organizations today face a complex transportation environment with ever-changing demands driven by macro-economic trends and governmental regulations. Manhattan's Transportation Management Solutions (TMS) are designed to help shippers navigate their way through these demands while meeting customer service expectations at the lowest possible freight costs. TMS components include procurement and modeling tools to setup a successful network, along with planning, execution and settlement tools to manage day-to-day transportation requirements. Our TMS can also connect shippers with a network of partners that can increase shipping capacity on an as-needed basis. Manhattan Carrier is a suite of solutions built specifically to help motor carriers optimize load assignments, minimize fuel costs, manage drivers' hours of service and accommodate demand fluctuations.

**Visibility** - Crucial to effective supply chain management is visibility into the movement of goods between locations in the supply chain and outside the enterprise's realm of control. Manhattan provides best in class visibility and event management tools that not only provide alerts to when events occur in the global supply chain, but also when they don't occur (such as missing a vessel overseas) that can have a cascading effect on production lines, freight and, most importantly, customer commitments.

### Manhattan SCALE™ (SCALE)

SCALE is our portfolio of logistics execution solutions built on Microsoft's .NET® platform. Purpose built for rapid development and a value-based total cost of ownership, it is targeted toward companies with execution-focused supply chain needs that require speed-to-value, resource-light system configuration and maintenance, and the ability to quickly scale their logistics operations up or down in response to market fluctuations or business requirement changes. SCALE combines the features of Trading Partner Management, Yard Management, Optimization, Warehouse Management and Transportation Execution.

Because SCALE leverages a common platform, solutions share common data elements and each user can access all applications through a single sign-on. Users also can set up "dashboards" that enable easy access to real-time information most relevant to their jobs. SCALE's ease of deployment, operation and support make it a popular choice for organizations operating in countries with emerging and developing economies, and where technical support resources are limited.

## Omnichannel Solutions

As omni-channel retail has placed new demands on organizations, it has also created new software solution needs. These range from the ability to leverage inventory across the entire network to meet any demand, to providing store associates and call center representatives the means to take advantage of the available inventory. Our Manhattan Active™ Omni set of solutions brings together Order Management, Store Inventory & Fulfillment, Point of Sale and Customer Engagement tools into a single application built on a shared, cloud-native, microservices platform. This

architecture enables our customers to more easily expand their systems to include more capabilities and quarterly product enhancements while always maintaining their customizations.

**Enterprise Omnichannel Solutions** - There is a wide range of new capabilities that must be leveraged at a corporate or 'central' level in retail today in order to enable best in class customer service, full inventory visibility, direct to client distribution and seamless fulfillment operations. The goal is to enable an omnichannel commerce platform that can be tapped into by any selling system—webstore, ERP, point-of-sale, call center, mobile app, etc. in order to more cost-effectively fulfill orders and inventory demand. Manhattan's Enterprise Inventory builds out a complete inventory availability picture that can be updated in near-real time with feeds from the warehouse, the store and the network. Enterprise Order Management merges this inventory availability data with demand feeds from across the organization to match supply with demand in a way that satisfies customer delivery expectations while also striving to maximize profitability. Manhattan also offers a unique Customer Engagement solution that enables contact center associates to see a holistic view of the customer, as well as a complete customer sales and interaction history to better and more profitably satisfy shopper needs, regardless of whether it is an exchange, a return or a new order.

**Omnichannel Solutions for the Store** - As the consumer enters the store with more information than ever, it is vital to equip the sales associate with relevant information and capabilities to satisfy that shopper's every demand. Store solutions include

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Point of Sale, available on mobile and fixed stations, to process purchase transactions and Clienteling to provide the associate with a complete picture of the shopper's purchase history. Manhattan brings these solutions together on a single mobile platform to enable retailers to offer unparalleled service and convenience for the shopper.

Another important part of the Manhattan Active store offering is Store Inventory and Fulfillment. Most retailers are now looking to leverage store inventory to fulfill ecommerce demand (driving greater sales revenue with less inventory). In order to achieve this, solutions that can accurately maintain inventory integrity and enable productive, reliable fulfillment are required.

#### Inventory Solutions

The ability to accurately forecast demand and project inventory needs is heightened by omnichannel retail requirements that change traditional approaches to inventory management. Manhattan's Inventory solutions address which products should be carried and the quantity that will be needed at each location by date.

**Inventory Optimization** - This set of applications includes sophisticated demand forecasting capabilities that can address the particularly challenging slow-moving and intermittent products that frequently result in excess inventory due to unpredictability. Also included is the Replenishment module that can evaluate inventory needs across all locations and channels. This module can even suggest transferring inventory between locations (warehouses or stores) or 'protect' merchandise at a store from online sales in order to save it for walk-in traffic.

**Planning** - Manhattan's Planning solutions provide merchants the tools they need to create channel-, store- or region-specific assortments. These tools offer channel-specific metrics and methodologies that optimize the planning process and maximize retailer revenues.

#### Technology Platform

Our solutions can be deployed on Linux, IBM System i, Microsoft's .NET computing platforms, as well as on all of the major public cloud infrastructures. Because omnichannel and supply chain solutions necessarily interact with other business operation systems, our solutions are designed to interoperate with software from other providers as well as with a company's existing legacy systems. This interfacing and open system capability enables customers to continue using existing computer resources and to choose among a wide variety of existing and emerging computer hardware and peripheral technologies. We provide a framework to facilitate rapid and reliable integration to any Enterprise Resource Planning (ERP) or host business system (including certified integration to both SAP and Microsoft Dynamics AX). We also offer certain solutions in either on-premise software or cloud computing models so that customers can select the option that best meets their requirements for control, flexibility, cost of ownership, and time-to-deployment.

To fulfil increasing market demand for software-as-a-service models, Manhattan offers Manhattan Active™ Solutions – cloud-native products designed to provide “always current” version-less product access. Like all Manhattan software, the solutions can be run on any type of device – mobile, tablet, or desktop. Manhattan Active solutions are sold directly in multi-year cloud subscription arrangements, typically for a period of three to more years, providing clients with regular software updates during the contract period to ensure access to the latest product features and benefiting Manhattan with a highly predictable and regular revenue stream.

#### Maintenance

We offer a comprehensive program that provides our perpetual license products with software upgrades for additional or improved functionality and technological advances incorporating emerging supply chain and industry advances. Over the past three years, our annual renewal rate for perpetual license customers subscribing to comprehensive support and enhancements has been greater than 90%. We are able to remotely access customer systems to perform diagnostics, provide online assistance, and facilitate software upgrades. We offer 24-hour customer support 365 days in the year, plus software upgrades for an annual fee that is paid in advance and is based on the solutions the customer has and the service level required. Software upgrades are provided under this program on a when-and-if- available basis.

Professional Services

We advise and assist our customers in planning and implementing our solutions through our global Professional Services Organization. To ensure successful long-term customer relationships, consultants assist customers with the initial deployment of our systems, the conversion and transfer of the customer's historical data onto our systems, and ongoing training, education, and system upgrades. We believe our Professional Services teams enable customers to implement our solutions knowledgeably and in the appropriate amount of time, help customers achieve expected results from system investments, continuously identify new opportunities for supply chain advancements and meaningfully add to our industry-specific knowledge base to improve future implementations and product innovations.

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Substantially all of our customers utilize some portion of our Professional Services to implement and support our software solutions. Professional Services typically are rendered under time and materials contracts, with services billed by the hour. Professional Services sometimes are rendered under fixed-fee contracts, with payments due on specific dates or milestones. We believe that increased sales of our solutions will drive higher demand for our Professional Services.

Our Professional Services team delivers deep supply chain and enterprise commerce domain expertise to our customers through industry-specific “best-practices” protocols and processes developed through the collective knowledge we have gained from 29 years of implementing our supply chain solutions worldwide. We also extensively train our consulting personnel on enterprise commerce operations and on our solutions.

Business consultants, systems analysts, and technical personnel assist customers in all phases of implementing our systems, including planning and design, customer-specific module configuration, on-site implementation or conversion from existing systems, and integration with customer systems such as Enterprise Resource Planning (ERP), web- and mobile-based commerce platforms, and Material Handling Equipment (MHE) systems. At times, third-party consultants, such as those from major systems integrators, assist our customers with certain implementations.

#### Training and Change Management Services

We offer training and change management services for new and existing users, enabling our customers to align systems, people and processes. Services provided by Manhattan training experts cover a wide range of support from the intended design to the front-line of the customer’s business, including critical end-user adoption with hands-on, live training in a virtualized Manhattan software environment. These programs are provided at fixed fees per-person, per-class. In addition, computer-based training programs can be purchased for a fixed fee for use at client sites. Customers can also pursue certification at the Associate or Professional level through our certification programs for Omni-channel, Supply Chain or Inventory.

Manhattan Training and Change Management Services are offered under six categories: Role-Based Training Paths, Comprehensive Training Programs, Change Management Services, Individual Product Training Courses, End-User Enablement and Knowledge Resources.

#### Hardware Sales

As a convenience for our customers, we resell a variety of hardware developed and manufactured by others, including (but are not limited to) computer hardware, radio frequency terminal networks, RFID chip readers, bar code printers and scanners, and other peripherals. We resell all third-party hardware products and related maintenance pursuant to agreements with manufacturers or through distributor-authorized reseller agreements pursuant to which we are entitled to purchase hardware products and services at discount prices and to receive technical support in connection with product installations and any subsequent product malfunctions. We do not maintain hardware inventory as we generally purchase hardware from vendors only after receiving related customer orders.

#### Strategy

Our objective is to extend our position as the leading global commerce solutions provider for organizations intent on creating and sustaining market advantages through technology-enabled commerce solutions. Our solutions help global distributors, wholesalers, retailers, logistics providers and manufacturers successfully manage accelerating and fluctuating market demands, as well as master the increasing complexity and volatility of their local and global supply chains. Our solutions are advanced, highly functional and highly scalable. They are designed to enable organizations to: create customer experiences consistent with their brand values; improve relationships with suppliers, customers and logistics providers; leverage investments across supply chain functions; effectively generate revenue and manage costs; and meet dynamically changing customer requirements. We believe our solutions are uniquely positioned to holistically optimize the way companies bring together omnichannel, supply chain and inventory management:

Develop and Enhance Software Solutions. We continue to focus our research and development resources on enhancing our Supply Chain, Omnichannel Commerce and Inventory Solutions. We offer what we believe to be the broadest and most richly-featured software portfolio in the marketplace. To continuously expand functionality and value, we plan to continue to provide enhancements to existing solutions and to introduce new solutions to address evolving industry standards and market needs. We identify these opportunities through our Product Management, Professional Services, Customer Support and Account Management organizations through interactions such as ongoing customer consulting engagements and implementations, sessions with our solution user groups, association with leading industry analyst and market research firms, and participation on industry standards and research committees. Our solutions address needs in various vertical markets, including retail, consumer goods, food and grocery, logistics service providers, industrial and wholesale, high technology and electronics, life sciences and government. We intend to continue to enhance our solutions to meet the dynamic requirements of these and new vertical markets as business opportunities dictate.

*Expand International Presence.* Our solutions offer significant benefits to customers in markets around the world and for organizations with global operations. We have offices in Australia, Chile, China, France, Germany, India, Japan, the Netherlands, Singapore, Spain and the United Kingdom, as well as representatives in Mexico and reseller partnerships in Latin America, Eastern Europe, the Middle East, South Africa, and Asia. Our Europe, Middle East, and Africa (EMEA) operations support sales, implementation services, and customer support functions for customers in Europe as well as a number of customers across the Middle East, concentrated in countries we consider politically and economically stable. Our Asia Pacific (APAC) operations service emerging opportunities in China, Southeast Asia, and India, as well as more established markets in Japan, Australia and New Zealand. Our emerging markets international strategy includes leveraging the strength of our relationships with current U.S. and Europe-based customers that also have significant international operations.

*Strategic Alliances and Indirect Sales Channels.* We currently sell our products primarily through our direct sales personnel, and through partnership agreements with a select number of organizations in emerging markets where we do not currently have a direct sales presence. We have worked on joint projects and joint sales initiatives with industry-leading consultants and software systems implementers, including most of the large consulting firms specializing in our targeted industries, to supplement our direct sales force and professional services organization. We expand our indirect sales channels through reseller agreements, marketing agreements, and agreements with third-party logistics providers. These alliances extend our market coverage and provide us with new business leads and access to trained implementation personnel.

*Acquire or Invest in Complementary Businesses.* We continuously evaluate strategic acquisition opportunities of technologies, solutions, and businesses that are consistent with our platform-based strategy and enable us to enhance and expand our offerings. Preferred acquisition targets are those that would be complementary to our existing solutions and technologies, expand our geographic presence and distribution channels, extend our presence into additional vertical markets with challenges and requirements similar to those we currently serve, and further solidify our leadership position within the primary components of supply chain planning and execution.

## Sales and Marketing

We employ multi-disciplinary sales teams that consist of professionals with industry experience in sales and technical sales support. To date, we have generated the majority of our software license and cloud subscription revenue through our direct sales force. We plan to continue to invest in our sales, services, and marketing organizations within the Americas, EMEA, and APAC, and to pursue strategic marketing partnerships. We conduct comprehensive global marketing programs that include advertising, prospect profiling and targeting, lead generation, public relations, analyst relations, trade show attendance and sponsorships, supply chain conference hosting, digital marketing, joint promotion programs with vendors and consultants, and ongoing customer communication programs.

Our sales cycle typically begins with the generation of a sales lead — through in-house marketing efforts, advertising, targeted promotions, web inquiries, trade show presence, speaking engagements, hosted seminars, or other means of referral — or the receipt of a request for proposal from a prospective customer. Leads are qualified and opportunities are closed through a process that includes telephone-based assessments of requirements; responses to requests for proposals, presentations and product demonstrations, site visits and/or reference calls with organizations already using our supply chain solutions, and contract negotiations. Sales cycles vary substantially from opportunity to opportunity, but typically require nine to twelve months.

In addition to new customer sales, we continue to leverage our existing customer base to drive revenue from system upgrades, sales of additional licenses of purchased solutions, and sales of new or add-on solutions. To efficiently penetrate emerging global markets, we leverage indirect sales channels, including sales through reseller agreements, marketing agreements, and agreements with third-party logistics providers. To extend our market coverage, generate new business leads, and provide access to trained implementation personnel, we leverage strategic alliances with systems integrators skilled at implementing our solutions. Business referrals and leads are positively influenced by

systems integrators, which include most of the large consulting firms and other systems consulting firms specializing in our targeted industries.

Our Manhattan Value Partner (Manhattan MVP™) and Manhattan GeoPartner™ programs foster joint sales and marketing with other organizations. Manhattan Value Partners are proven software and hardware providers, trusted third-party integrators and consultants who bring added value to customer engagements through vertical industry knowledge or technical specialization. Manhattan MVPs support and complement our supply chain solutions so we can provide customers with a comprehensive approach that is suited to their business requirements. This collaborative program is designed to benefit both Manhattan and our partners through tailored joint marketing, sales and, in some cases, co-development efforts. Among others, Manhattan MVPs include IBM, Deloitte, Kurt Salmon part of Accenture Strategy, Microsoft, Cap Gemini, HP, Zebra, Oracle and Intel. Manhattan GeoPartners represent a select group of companies that sell and implement our solutions in specific geographies around the world, each providing valuable localized expertise to meet customer needs in areas such as Western Europe, Eastern Europe, Russia, the Middle East, Latin America, Africa, and the Asia Pacific region.

## Customers

To date, our customers have been suppliers, manufacturers, distributors, retailers, and logistics providers in a variety of industries. Our top five customers (new or pre-existing) in the aggregate accounted for 13%, 9%, and 12% of total revenue for the year ended December 31, 2018 (“2018”), the year ended December 31, 2017 (“2017”) and the year ended December 31, 2016 (“2016”), respectively. No single customer accounted for more than 10% of our total revenue in 2018, 2017 and 2016.

## Product Development

We focus our development efforts on new product innovation and on adding new functionality to existing solutions; integrating our various solution offerings; enhancing the operability of our solutions across our platform and across distributed and alternative hardware platforms, operating systems, and database systems. We believe that our future success depends, in part, on our ability to continue to enhance existing solutions, to respond to dynamically changing customer requirements, and to develop new or enhanced solutions that incorporate new technological developments and emerging supply chain and industry standards. To that end, development frequently focuses on base system enhancements and incorporating new user requirements and features into our solutions. As a result, we deliver packaged, highly configurable solutions with increasingly rich functionality rather than custom-developed software. We also deliver interface toolkits for many major ERP systems to enhance communication and improve data flows between our core solutions and our clients’ host systems.

We leverage internal and external scientific advisors to inform our solution strategies and research and development approaches with the most advanced thinking on supply chain opportunities, challenges, and technologies. Our internal research team is comprised of Ph.D.-credentialed math and science experts who work on creating and solving algorithms and other constructs that advance the optimization capabilities and other aspects of our solutions. We also regularly communicate with and are advised by experts from leading educational institutions known for their supply chain disciplines, and practitioners from organizations deploying supply chain technology in innovative and market-advancing ways. Together, our research team and external advisors inform both the practical business approaches and the mathematical and scientific inventiveness of our solutions.

We conduct most research and development internally in the U.S. and India to retain domain knowledge and to promote programming continuity standards. However, we may periodically outsource some projects that can be performed separately and/or that require special skills. We also use third-party translation companies to localize our application software into various languages such as, but not limited to, Chinese, French, Japanese, and Spanish.

## Competition

Our solutions are solely focused on enterprise commerce capabilities. Our solutions help global distributors, wholesalers, retailers, logistics providers and manufacturers successfully manage accelerating and fluctuating market demands, as well as master the increasing complexity and volatility of their local and global supply chains. Our solutions are designed to enable organizations to: create customer experiences consistent with their brand values; improve relationships with suppliers, customers and logistics providers; leverage investments across supply chain functions; effectively generate revenue and manage costs; and meet dynamically changing customer requirements characterized by rapid technological change in an intensely competitive environment. The principal competitive factors affecting the markets for our solutions include: industry expertise; company and solution reputation; company viability; compliance with industry standards; solution architecture; solution functionality and features; integration experience, particularly with ERP providers and material handling equipment providers; ease and speed of implementation; proven return on investment; historical and current solution quality and performance; total cost of ownership; solution price; and ongoing solution support structure. We believe we compete favorably with respect to each of these factors.

Our competitors are diverse and offer a variety of solutions directed at various aspects of enterprise commerce. Existing competitors include:

- Corporate information technology departments of current or potential customers capable of internally developing solutions;
- ERP vendors, including Oracle, SAP, and Infor, among others;
- Supply chain execution and planning vendors, including JDA Software Group, Inc. (JDA), HighJump Software Inc., SAS Institute Inc., and the Sterling Commerce division of IBM, among others;
- Point of sale vendors, including Aptos, Inc. and Oracle, among others; and
- Smaller independent companies that have developed or are attempting to develop supply chain execution solutions and/or planning solutions that apply in specific countries and/or globally.

We anticipate increased competition from ERP and supply chain management (SCM) applications vendors and from business application software vendors that may broaden their solution offerings by internally developing or by acquiring or partnering with independent developers of supply chain planning and execution software. Some of these ERP and other potential competitors have

longer operating histories; significantly more financial, technical, marketing and other resources; greater name recognition; broader solutions; and larger installed bases of customers than us. To the extent that ERP and SCM vendors or other large competitors develop or acquire systems with functionality comparable or superior to ours, their larger customer bases, long-standing customer relationships, and ability to offer broader solutions outside the scope of supply chain could create significant competitive advantage for them. It also is possible that new competitors or alliances among current and/or new competitors could emerge to win significant market share. Increased competition could result in price reductions, fewer customer orders, reduced earnings and margins and loss of market share. In turn, this could have a material adverse effect on our business, results of operations, cash flow, and financial condition.

We believe we have established meaningful competitive differentiation through our supply chain and omnichannel commerce expertise; our platform-based solution approach; our track record of continuous supply chain commerce innovation and investment; our strong and endorsing customer relationships; our significant success in deploying and supporting supply chain, inventory and omnichannel solutions for market-leading companies; our success in helping our clients address the enterprise impacts of digital commerce; and our ability to out-execute others in identifying sales opportunities and demonstrating expertise throughout the sales cycle. However, to further our market success, we must continue to respond promptly and effectively to economic consumption models such as cloud subscription versus perpetual license, technological change and competitors' innovations. Consequently, we cannot assure that we will not be required to make substantial additional investments in research, development, marketing, sales and customer service efforts in order to meet any competitive threat, or that we will be able to compete successfully in the future.

#### International Operations: Segments

We have three reportable segments based on geographic location: North and Latin America (the "Americas"); Europe, the Middle East and Africa ("EMEA"); and Asia Pacific ("APAC"). For further information on our segments, see Note 7 of the Notes to our Consolidated Financial Statements. International revenue includes all revenue derived from sales to customers outside the United States. At December 31, 2018, we employed approximately 1,700 employees in our international operations.

#### Proprietary Rights

We rely on a combination of copyright, patent, trade secret, trademark, and trade dress laws, confidentiality procedures, and contractual provisions to protect our proprietary rights in our products, processes and technology. We have registered trademarks for Manhattan Associates and the Manhattan Associates logo, as well as a number of our products and features. Generally, we enter into confidentiality and assignment-of-rights agreements with our employees, consultants, customers and potential customers and limit access to, and distribution of, our proprietary information. We license our proprietary products to our customers under license agreements that we believe contain appropriate use and other restrictions in order to try to best protect our ownership of our products and our proprietary rights in them, and to protect our revenue potential from our products. However, despite our efforts to safeguard and maintain our proprietary rights, we cannot ensure that we will successfully deter misappropriation, unintended disclosure or independent third-party development of our technology or our proprietary rights or information. Policing unauthorized use of our products is difficult, and, while we are unable to determine the extent to which piracy of our software solutions exists, as is the case with any software company, piracy could become a problem. Further, to the extent that we enter into transactions in countries where intellectual property laws are not well developed or are poorly enforced, our efforts to protect our proprietary rights may be ineffective. Whether we seek to enforce our proprietary rights in the U.S. or abroad, our efforts, including litigation to enforce our rights, can result in substantial costs and diversion of resources, and such efforts, or our failure to succeed in such efforts, could have a material adverse effect on our business, financial condition, results of operations or cash flows, regardless of the final outcome.

As the number of supply chain management solutions available in the marketplace increases and solution functionality continues to overlap, supply chain software may increasingly become subject to claims of infringement or other misappropriation of intellectual property. Third parties may assert infringement or misappropriation claims against us relating to our products, processes or technology. Such claims, whether or not they have merit, generally are time-consuming and may result in costly litigation, divert management's attention or cause product shipment delays or require us to enter into royalty or licensing arrangements. Defense of infringement or other misappropriation claims, entering into royalty or licensing agreements, the unavailability of such agreements, or adverse determinations in proprietary rights litigation could have a material adverse effect on our business, results of operations, cash flow and financial condition.

#### Employees

At December 31, 2018, we employed approximately 3,000 employees worldwide. We have offices in Australia, Chile, China, France, Germany, India, Japan, the Netherlands, Singapore, Spain, the United Kingdom, and the United States, as well as representatives in Mexico and reseller partnerships in Latin America, Eastern Europe, the Middle East, South Africa, and Asia.

## Available Information

We file annual, quarterly and current reports and other information with the Securities and Exchange Commission (the “SEC” or the “Commission”). The SEC maintains a website at [www.sec.gov](http://www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

On our website, [www.manh.com](http://www.manh.com), we provide free of charge our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and any amendments thereto, as soon as reasonably practicable after they have been electronically filed or furnished to the SEC. Information contained on our website is not part of this Form 10-K or our other filings with the SEC.

Additionally, our code of business conduct and ethics and the charters of the Audit, Compensation, and Nomination and Governance Committees of the Board of Directors are available on our website.

### **Item 1A.** *Risk Factors*

You should consider the following and other risk factors in evaluating our business or an investment in our common stock. The occurrence of adverse events described in the following risk factors or other adverse events not described in the following risk factors could have a material adverse effect on our business, results of operations, cash flow and financial condition, and could cause the trading price of our common stock to decline.

We now offer certain of our solutions as cloud subscriptions, which will adversely affect our revenue and earnings in the transition period and make predicting our revenue, earnings and cash flow more difficult. We began offering more of our solutions under a cloud subscription option in 2017, in addition to our perpetual license option. Under a cloud subscription, customers pay a periodic fee for the right to use our software within a cloud-based environment that we provide and manage over a specified period of time. We believe that over time a growing number of our customers and prospects will elect to purchase our solutions as cloud subscriptions rather than under an on-premise perpetual license.

Until we have fully transitioned to a stable mix of cloud subscription and on-premise perpetual license arrangements, we expect our combined license and cloud subscription revenue will decrease due to the difference in revenue recognition for a cloud subscription (for which revenue is recognized ratably over the term of the subscription arrangement) and a perpetual license (for which revenue is generally recognized upon purchase) and that our maintenance revenue (which comprises a significant portion of our revenue) may also decrease due to software enhancement and support being included in the cloud subscription offering.

Our revenue, earnings and cash flow are based on the mix of revenue between cloud subscription and perpetual license revenue including timing, number and size of deals. If a greater percentage of our customers purchase our solutions as cloud subscriptions in any period, our revenue, earnings and cash flow will likely fall below expectations for that period, which could cause our stock price to decline.

Economic, political and market conditions can adversely affect our business, results of operations, cash flow and financial condition, including our revenue growth and profitability, which in turn could adversely affect our stock price. Our business is influenced by a range of factors that are beyond our control and that we have no comparative advantage in forecasting. These include:

- general economic and business conditions;
- overall demand for enterprise software and services;
- governmental policy, budgetary constraints or shifts in government spending priorities;
- general geo-political developments; and
- currency exchange rate fluctuations.

Macroeconomic developments like the continued slow pace of economic recovery in the United States and Europe and in parts of Asia and South America could negatively affect our business, operating results, financial condition and outlook, which, in turn, could adversely affect our stock price. Any general weakening of, and related declining corporate confidence in, the global economy or the curtailment in government or corporate spending could cause current or potential customers to reduce or eliminate their information technology budgets and spending, which could cause customers to delay, decrease or cancel purchases of our products and services or cause customers not to pay us or to delay paying us for previously purchased products and services.

In addition, political unrest and the related potential impact on global stability, terrorist attacks and the potential for other hostilities in various parts of the world, potential public health crises and natural disasters continue to contribute to a climate of economic and

political uncertainty that could adversely affect our results of operations and financial condition, including our revenue growth and profitability.

Disruption in the retail market could materially adversely affect our revenues and results of operations. Our largest market, retail, is experiencing significant business disruption and transformation, primarily driven by digital commerce. We believe that disruption is causing many traditional retailers to assess the challenges of the transformation and evaluate their store networks and costs, as they face increasing competitive pressures from ecommerce retailers. Since our solutions often require our customers to make significant capital investments, traditional retailers may be delaying purchase decisions on our products. While this disruption may present significant opportunity for our company, we believe extended sales cycles for large license sales and cloud subscriptions could have a material adverse effect on our revenues and results of operations.

In addition, we 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 the disruption in retail may moderate or end.

An inability to attract, integrate, and retain management and other personnel could adversely impact our business, results of operations, cash flow, and financial condition. Our success greatly depends on the continued service of our executives, as well as our other key senior management, technical personnel, and sales personnel. Our success will depend on the ability of our executive officers to work together as a team. The loss of any of our senior management or other key professional services, research and development, sales and marketing personnel—particularly if they are lost to competitors—could impair our ability to grow our business. We do not maintain key man life insurance on any of our executive officers.

Our future success will depend in large part upon our ability to attract, retain, and motivate highly skilled employees. We face significant competition for individuals with the skills required to perform the services we offer, and thus we may encounter increased compensation costs that are not offset by increased revenue. In the broader technology industry in which we compete for talented hires, there is substantial and continuous competition for engineers with high levels of experience in designing, developing and managing software, as well as competition for sales executives and operations personnel. We cannot guarantee that we will be able to attract and retain sufficient numbers of these highly skilled employees or motivate them. Because of the complexity of the supply chain market, we may experience a significant time lag between the date on which technical and sales personnel are hired and the time at which these persons become fully productive.

We may not be able to continue to successfully compete with other companies. We compete in markets that are intensely competitive and are expected to become more competitive as current competitors expand their product offerings. Our current competitors come from many segments of the software industry and offer a variety of solutions directed at various aspects of the extended supply chain, as well as the enterprise as a whole. We face competition for product sales from:

- corporate information technology departments of current or potential customers capable of internally developing solutions;
- ERP vendors, including Oracle, SAP, and Infor, among others;
- supply chain execution and planning vendors, including JDA Software Group, Inc. (JDA), HighJump Software Inc., SAS Institute Inc., and the Sterling Commerce division of IBM, among others;
  - Point of sale vendors, including Aptos, Inc., Salesforce.com, Oracle, among others; and
- smaller independent companies that have developed or are attempting to develop supply chain execution solutions and/or supply chain planning solutions that apply in specific countries and/or globally.

We anticipate facing increased competition from ERP and supply chain management (SCM) applications vendors and business application software vendors that may broaden their solution offerings by internally developing or by

acquiring or partnering with independent developers of supply chain planning and execution software. Some of these ERP and other potential competitors have longer operating histories, significantly more financial, technical, marketing, and other resources, greater name recognition, broader solutions, and larger installed bases of customers than we do. To the extent that ERP and SCM vendors or other large competitors develop or acquire systems with functionality comparable or superior to ours, their larger customer bases, long-standing customer relationships, and ability to offer broader solutions outside the scope of supply chain could create significant competitive advantage for them. It also is possible that new competitors or alliances among current and/or new competitors could emerge to win significant market share. Increased competition could result in price reductions, fewer customer orders, reduced earnings and margins, and loss of market share. In turn, this could have a material adverse effect on our business, results of operations, cash flow, and financial condition.

We believe the domain expertise required to continuously innovate supply chain technology in our target markets, effectively and efficiently implement solutions, identify and attract sales opportunities, and compete successfully in the sales cycle provides us with a competitive advantage and is a significant barrier to market entry. However, in order to be successful in the future, we must continue to respond promptly and effectively to technological change and competitors' innovations, and consequently we cannot assure you

that we will not be required to make substantial additional investments in connection with our research, development, marketing, sales, and customer service efforts in order to meet any competitive threat, or that we will be able to compete successfully in the future. Some of our competitors have significant resources at their disposal, and the degree to which we will compete with their new innovative products in the marketplace is undetermined.

Our pricing models may need to be modified due to price competition. The competitive markets in which we operate may oblige us to reduce our prices in order to contend with the pricing models of our competitors. If our competitors discount certain products or services, we may have to lower prices on certain products or services in order to attract or retain customers. Any such price modifications would likely reduce margins and could adversely affect our business, results of operations, cash flow, and financial condition.

Our operating results are substantially dependent on one line of business. We continue to derive our revenues from sales of our supply chain commerce solutions software and related services and hardware. Any factor adversely affecting the markets for supply chain solutions could have an adverse effect on our business, results of operations, cash flow, and financial condition. Accordingly, our future operating results will depend on the demand for our supply chain commerce products and related services and hardware by our customers, including new and enhanced releases that we subsequently introduce. We cannot guarantee that the market will continue to demand our current products or that we will be successful in marketing any new or enhanced products. If our competitors release new products that are superior to our products in performance or price, demand for our products may decline. A decline in demand for our products as a result of competition, technological change, or other factors would reduce our total revenues and harm our ability to maintain profitability.

Our future revenue is dependent on continuing sales from software licenses and cloud subscriptions, which in turn drive sales of post-contract support and professional services. We are dependent on our new customers as well as our large installed customer base to purchase additional software licenses, cloud subscriptions, post-contract support, and professional services from us. Our post-contract support agreements are generally for a one-year term and our professional services agreements generally only cover a particular engagement. In future periods customers may not license additional products, and in turn may not renew post-contract support agreements or purchase additional professional services from us. If our customers decide not to license or purchase these products and services from us, or if they reduce the scope of their post-contract support or hosting or professional services agreements, our revenue could decrease significantly, and that could have a material adverse effect on our business, results of operations, cash flow and financial condition.

In addition, many of our customers are using older versions of our products for which we are no longer developing any further upgrades or enhancements. While we intend to migrate our customers who are using these versions to newer version, products or convert to Cloud subscription, there can be no assurance that these customers will do so. If customers using older versions of our products decide not to license our current software products, or decide to discontinue the use of our products and associated post-contract support services, our revenue could decrease and our operating results could be materially adversely affected.

Our software may contain undetected errors or “bugs” causing harm to our reputation, which could adversely impact our business, results of operations, cash flow, and financial condition. Software products as complex as those we offer might contain undetected errors or failures when we first introduce them or when we release new versions. Despite testing, we cannot ensure errors will not be found in new products or product enhancements after commercial release. Any errors could cause substantial harm to our reputation, result in additional unplanned expenses to remedy any defects, delay the introduction of new products, result in the loss of existing or potential customers, or cause a loss in revenue. Further, such errors could subject us to customer claims for significant damages, and we cannot guarantee courts would enforce the provisions in our customer agreements limiting our damage liability. In turn, this could materially affect our business, results of operations, cash flow, and financial condition.

If we encounter defects, delays or interruptions in our cloud subscription services, the demand for these services could diminish, and we could incur significant liability. We currently utilize data center hosting facilities, which are managed by third-parties, to provide cloud-based solutions and hosting services to our customers. If the data center facilities fail or encounter any damage, it could result in interruptions in services to our customers. This could result in unanticipated downtime for our customers, and in turn, our reputation and business could be adversely affected. In addition, if our customers use our cloud-based arrangements in unanticipated ways, this could cause an interruption in service for other customers attempting to access their data.

If any defects, delays or interruption in our cloud-based solutions occur, customers could elect to cancel their service, delay or withhold payment to us, not purchase from us in the future or make claims against us, which could adversely affect our business reputation, results of operations, cash flow, and financial condition.

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, possibly damaging our brand and reputation, disrupting the IT services we provide to our customers, and causing our customers to 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.** Our products and services can store, retrieve, manipulate and manage our customers' information and data as well as our own. We have a reputation for secure and reliable software products and services and invest time and resources into protecting the integrity and security of our products, services and internal and external data that we manage.

Nevertheless, we encounter attempts by third parties to penetrate or bypass our data protection and other security measures and gain unauthorized access to our networks, systems and data or compromise our customers' confidential information or data. Unauthorized third parties also could improperly access or modify data as a result of employee or supplier error or malfeasance and third parties may attempt to fraudulently induce employees or customers into disclosing sensitive information such as user names, passwords or other information.

These risks are persistent and likely will increase as we continue to grow our cloud offerings and services and store and process increasingly large amounts of our customers' confidential information and data. We also may acquire companies, products, services and technologies and inherit such risks when we integrate these acquisitions within Manhattan.

If a cyber-attack or other security incident were to occur, we could suffer damage to our brand and reputation, which could reduce our revenue, earnings, and operating cash flow resulting from increased expenses, including potential legal claims and regulatory actions, to address and fix the incidents.

Further, as regulatory focus on privacy issues continues to increase and become more complex, these potential risks to our business will intensify. Changes in laws or regulations associated with the enhanced protection of certain types of sensitive data could significantly increase our cost of providing our products and services.

Delays in implementing our products could adversely impact our business, results of operations, cash flow, and financial condition. Due to the size and complexity of most of our software implementations, our implementation cycle can be lengthy and may result in delays. Our products may require modification or customization and must integrate with many existing computer systems and software programs of our customers. This can be time-consuming and expensive for customers and can result in implementation and deployment delays of our products. Additional delays could result if we fail to attract, train, and retain services personnel, or if our alliance companies fail to commit sufficient resources towards implementing our software. These delays and resulting customer dissatisfaction could limit our future sales opportunities, harm our reputation, and adversely impact results of operations, cash flow, and financial condition.

Our liability to clients may be substantial if our systems fail, which could adversely impact our business, results of operations, cash flow, and financial condition. 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—which, as described in more detail above, could be due to software bugs, cloud hosting service failures, security breaches, faulty implementations or other reasons—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. Defending a lawsuit, regardless of its merit, could be costly and divert management's time and attention. Although we maintain general liability insurance and error and omissions coverage, these coverages may not continue to be available on reasonable terms or in sufficient amounts to cover claims against us. In addition, our insurer may disclaim coverage as to any future claim. If claims exceeding the available insurance coverage are successfully asserted against us, or our insurer imposes premium increases or large deductibles or co-insurance requirements on us, then our business, results of operations, cash flow, and financial condition could be adversely affected.

Our ability to sell our software is highly dependent on the quality of our services offerings, and our failure to offer high quality services could adversely impact our business, results of operations, cash flow, and financial condition. Most of our customers rely to some extent on our professional services to aid in the implementation of our software solutions. Once our software has been installed and deployed, our customers may depend on us to provide them with

ongoing support and resolution of issues relating to our software. Therefore, a high level of service is critical for the continued marketing and sale of our solutions. If we or our partners do not efficiently and effectively install and deploy our software products, or succeed in helping our customers quickly resolve post-deployment issues, our ability to sell software products to these customers would be adversely affected and our reputation in the marketplace with potential customers could suffer.

Our international operations have many associated risks. We continue to strategically manage our presence in international markets, and these efforts require significant management attention and financial resources. We may not be able to successfully penetrate international markets, or, if we do, there can be no assurance that we will grow our business in these markets at the same rate as in North America. Because of these inherent complexities and challenges, lack of success in international markets could adversely affect our business, results of operations, cash flow, and financial condition.

We have international offices in the Americas (the United States and Chile), in Europe (the United Kingdom, the Netherlands, France, Germany and Spain), in Asia (China, Japan, Singapore, and India), and in Australia. We have committed resources to maintaining and further expanding, where appropriate, our sales offices and sales and support channels in key international markets.

However, our efforts may not be successful. International sales are subject to many risks and difficulties, including those arising from the following: building and maintaining a competitive presence in new markets; staffing and managing foreign operations; managing international systems integrators; complying with a variety of foreign laws; producing localized versions of our products; import and export restrictions and tariffs, including as a result of a trade war; enforcing contracts and collecting accounts receivable; unexpected changes in regulatory requirements; reduced protection for intellectual property rights in some countries; potential adverse tax treatment; less stringent adherence to ethical and legal standards by prospective customers in some countries; language and cultural barriers; currency fluctuations; political and economic instability abroad; and seasonal fluctuations.

Our operating results may include foreign currency gains and losses. Due to our international operations, we conduct a portion of our business in currencies other than the United States dollar. Our revenues, expenses, operating profit and net income are affected when the dollar weakens or strengthens in relation to other currencies. In addition, we have a large development center in Bangalore, India, that does not have a natural in-market revenue hedge to mitigate currency risk to our operating expense in India. Fluctuations in the value of other currencies, particularly the Indian Rupee, could materially impact our revenues, expenses, operating profit and net income.

Our research and development activities may not generate significant returns. Our product development activities are costly, and recovering our investment in product development may take a significant amount of time, if it occurs at all. We anticipate continuing to make significant investments in software research and development and related product opportunities because we believe that we must continue to allocate a significant amount of resources to our research and development activities in order to compete successfully. We cannot estimate with any certainty when we will, if ever, receive significant revenues from these investments.

We may encounter long sales cycles, particularly with our larger customers, which could have an adverse effect on the amount, timing, and predictability of our revenue, adversely affecting our business, results of operations, cash flow, and financial condition. Our products have lengthy sales cycles, which typically extend from nine to twelve months and may take up to several years. Potential and existing customers, particularly larger enterprise customers, often commit significant resources to an evaluation of available solutions and services and require us to expend substantial time and resources in connection with our sales efforts. The length of our sales cycles also varies depending on the type of customer to which we are selling, the product being sold, and customer requirements. We may incur substantial sales and marketing expenses and expend significant management effort during this time, regardless of whether we make a sale. Many of the key risks relating to sales processes are beyond our control, including: our customers' budgetary and scheduling constraints; the timing of our customers' budget cycles and approval processes; our customers' willingness to replace their currently deployed software solutions; and general economic conditions.

As a result of these lengthy and uncertain sales cycles of our products and services, it is difficult for us to predict when customers may purchase products or services from us, thereby affecting when we can recognize the associated revenue, and our operating results may vary significantly and may be adversely affected. The length of our sales cycle makes us susceptible to having pending transactions delayed or terminated by our customers if they decide to delay or withdraw funding for IT projects. Our customers may decide to delay or withdraw funding for IT projects for various reasons, including, but not limited to, global economic cycles and capital market fluctuations.

Our operating results are difficult to predict and could cause our stock price to fall. Our quarterly revenue and operating results are difficult to predict and can fluctuate significantly from quarter to quarter. 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. Our quarterly revenue is difficult to forecast for several reasons, including the following: global macro-economic disruptions; credit and equity market disruptions, which can significantly impact capital availability and spend timing of customers or potential customers; the varying sales cycle for our products and services from customer to customer, including multiple levels of authorization required by some customers; the varying demand for our products; customers' budgeting and purchasing cycles; potential deferral of license revenue well after entering into a license agreement due to extended payment terms, including, although infrequent, payment

terms in a contract extending beyond twelve months, significant software modifications, future software functionality deliverables not on a stand-alone basis, or other negotiated terms that preclude software revenue recognition under U.S. general accepted accounting principles; delays in our implementations at customer sites; timing of hiring new services employees and the rate at which these employees become productive; timing of introduction of new products; development and performance of our distribution channels; and timing of any acquisitions and related costs.

As a result of these and other factors, our license revenue is difficult to predict. Because our revenue from services is largely correlated to our license revenue, a decline in license revenue could also cause a decline in our services revenue in the same quarter or in subsequent quarters. In addition, an increase or decrease in hardware sales, which provide us with lower gross margins than sales of software licenses or services, may cause variations in our quarterly operating results.

Most of our expenses, including employee compensation and rent, are relatively fixed. 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.

Historical growth rates and historical quarterly revenue and operating results may not be a good indicator of future operating results and reliance on historical results should not be used to predict our future performance.

Our technology must be advanced if we are to remain competitive. The market for our products is characterized by rapid technological change, frequent new product introductions and enhancements, changes in customer demands, and evolving industry standards. Our existing products could be rendered obsolete if we fail to continue to advance our technology. We have also found that the technological life cycles of our products are difficult to estimate, partially because of changing demands of other participants in the supply chain. We believe that our future success will depend in large part upon our ability to continue to enhance our current product line while we concurrently develop and introduce new products that keep pace with competitive and technological developments. These developments require us to continue to make substantial product development investments. Although we are presently developing a number of product enhancements to our product sets, we cannot assure you that these enhancements will be completed on a timely basis or gain customer acceptance.

Our failure to manage the growth of our operations may adversely affect our business, results of operations, cash flow, and financial condition. We plan to continue to increase the scope of our operations domestically and internationally. This growth may place a significant strain on our management systems and resources. We may further expand domestically or internationally through internal growth or through acquisitions of related companies and technologies. If we fail to maintain continuity in our executive officers; develop the management skills of our managers and supervisors; attract, retain, train, and motivate our employees; improve our operational, financial, and management controls; and maintain adequate reporting systems and procedures and our management and information control systems, our business, results of operations, and cash flow could be negatively impacted.

We incorporate third-party software in our solutions, the failure or unavailability of which could adversely affect our ability to sell, support, and service our products. We incorporate and include third-party software into and with certain of our products and solutions and expect to continue to do so. The operation of our products could be impaired if there are defects in that third-party software. It may be difficult for us to correct any defects in third-party software because the development and maintenance of the software is not within our control. Such defects could adversely affect our business.

In addition, there can be no assurance that these third parties will continue to make their software available to us on acceptable terms, or at all; not make their products available to our competitors on more favorable terms; invest the appropriate levels of resources in their products and services to maintain and enhance the capabilities of their software; or remain in business. Any impairment in our relationship with these third parties or our ability to license or otherwise use their software could have a material adverse effect on our business, results of operations, cash flow, and financial condition.

The use of open source software in our products may expose us to additional risks and harm our intellectual property, which could adversely impact our business, results of operations, cash flow, and financial condition. 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 open source software into software we license from them for use in 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.

If we are unable to develop software applications that interoperate with computing platforms developed by others, our business, results of operations, cash flow, and financial condition may be adversely affected. We develop software applications that interoperate with operating systems, database platforms, and hardware devices developed by others, which we refer to collectively as computing platforms. If the developers of these computing platforms do not cooperate with us or we are unable to devote the necessary resources so that our applications interoperate with those computing platforms, our software development efforts may be delayed and our business and results of operations may be adversely affected. When new or updated versions of these computing platforms are introduced, it is often necessary for us to develop updated versions of our software applications so that they interoperate properly with these computing platforms. We may not accomplish these development efforts quickly or cost-effectively, and it is difficult to predict what the relative growth rates of adoption of these computing platforms will be. These development efforts require substantial investment, the devotion of substantial employee resources, and the cooperation of the developers of the computing platforms. For some computing platforms, we must obtain some proprietary application program interfaces from the owner in order to develop software applications that interoperate with the computing platforms. Computing platform providers have no obligation to

assist in these development efforts. If they do not provide us with assistance or the necessary proprietary application program interfaces on a timely basis, we may experience delays or be unable to expand our software applications into other areas.

The computing platforms we use may not continue to be available to us on commercially reasonable terms. Any loss of the right to use any of these systems could result in delays in the provision of our products and services, and our results of operations may be adversely affected. Defects in computing platforms could result in errors or failure of our products, which could harm our business.

Our liability for intellectual property claims can be costly and result in the loss of significant rights, which could adversely impact our business, results of operations, cash flow, and financial condition. It is possible that third parties will claim that we have infringed their current or future products, inventions, or other intellectual property. We expect that supply chain software developers like us will increasingly be subject to infringement claims as the number of products grows. Any claims, with or without merit, could be time-consuming, result in costly litigation, cause product shipment delays, or require us to pay monetary damages or to enter into royalty or licensing agreements, any of which could negatively impact our operating results. There are no assurances that these royalty or licensing agreements, if required, would be available on terms acceptable to us, if at all. We also may be required to indemnify our customers for damages they suffer as a result of such infringement. There are no assurances that legal action claiming patent infringement will not be commenced against us, or that we would prevail in litigation given the complex technical issues and inherent uncertainties in patent litigation. 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 the product or feature to avoid infringement, we may be prevented from distributing our software or required to incur significant expense and delay in developing non-infringing software. Any of these events could seriously harm our business, results of operations, cash flow, and financial condition.

We may have exposure to additional tax liabilities. As a multinational corporation, we are subject to income taxes in the U.S. and various foreign jurisdictions. Significant judgment is required in determining our global provision for income taxes and other tax liabilities. In the ordinary course of a global business, there are many intercompany transactions and calculations where the ultimate tax determination is uncertain. Our income tax returns are routinely subject to audits by tax authorities. Although we regularly assess the likelihood of adverse outcomes resulting from these examinations to determine our tax estimates, a final determination of tax audits or tax disputes could have an adverse effect on our financial condition, results of operations and cash flows. Also, the earnings of our foreign subsidiaries are considered to be indefinitely reinvested. If our plans change in the future or if we elect to repatriate the unremitted earnings of our foreign subsidiaries in the form of dividends or otherwise, we could be subject to additional local withholding taxes which may result in a higher effective tax rate.

In addition, the United States government enacted tax reform and other governments are considering adopting tax reform measures that could impact future effective tax rates favorably or unfavorably affected by changes in tax rates, changes in the valuation of our deferred tax assets or liabilities, or changes in tax laws or their interpretation. Such changes could have a material adverse impact on our financial results.

We are also subject to non-income taxes, such as payroll, sales, use, value-added, net worth, property and goods and services taxes in the U.S. and various foreign jurisdictions. We are regularly under audit by tax authorities with respect to these non-income taxes and may have exposure to additional non-income tax liabilities, which could have an adverse effect on our results of operations, financial condition and cash flows.

Fluctuations in our hardware sales may adversely impact our business, results of operations, cash flow, and financial condition. A portion of our revenue in any period is from the resale of a variety of third-party hardware products to purchasers of our software. However, our customers may purchase these hardware products directly from manufacturers or distributors rather than from us. We view sales of hardware as non-strategic. We perform this service to our customers seeking a single source for their supply chain needs. Hardware sales are difficult to forecast and

fluctuate from quarter to quarter, leading to unusual comparisons of total revenue and fluctuations in profits. If we are unable to maintain or grow our hardware revenue, our business, results of operations, cash flow, and financial condition may be adversely affected.

Our growth is dependent upon the successful development of our direct and indirect sales channel mix. We believe that our future growth also will depend on further developing and maintaining a successful direct sales force and strategic relationships with systems integrators and other technology companies. We invest significant resources to maintain and develop our sales channels. Our investment could adversely affect our operating results if these efforts do not generate license and service revenue necessary to offset the 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, a disproportionate increase in indirect sales could reduce our average selling prices and result in lower gross margins. In addition, sales of our products through indirect channels typically do not generate consulting services revenue for us at the same levels as direct sales, as the third-party systems integrators generally provide these services. Similarly, indirect sales typically do not generate the same levels of direct contact between our associates and those of our customer, 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 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.

Our employee retention and hiring may be hindered by immigration restrictions, which could adversely impact our business, results of operations, cash flow, and financial condition. Foreign nationals who are not U.S. citizens or permanent residents constitute a significant part of our professional U.S. workforce. Our ability to hire and retain these workers, and their ability to remain and work in the U.S. are impacted by laws and regulations as well as by processing procedures of various government agencies. Changes in laws, regulations, or procedures may adversely affect our ability to hire or retain such workers and may affect our costs of doing business and/or our ability to deliver services.

Our failure to adequately protect our proprietary rights could adversely impact our business, results of operations, cash flow, and financial condition. Our success and ability to compete is dependent in part upon our proprietary technology. There are no assurances that we will be able to protect our proprietary rights against unauthorized disclosure or third-party copying or use. We rely on a combination of copyright, patent, trademark, and trade secret laws, as well as confidentiality agreements, licensing arrangements, and contractual commitments, to establish and protect our proprietary rights. Despite our efforts to protect our proprietary rights, existing copyright, patent, trademark, and trade secret laws afford only limited protection. In addition, the laws of certain foreign countries do not protect our rights to the same extent as do the laws of the United States. Attempts may be made to copy or reverse engineer aspects of our products or to obtain and use information that we regard as proprietary. Any infringement of our proprietary rights could negatively impact our future operating results. Furthermore, policing the unauthorized use of our products is difficult, and litigation may be necessary in the future to enforce our intellectual property rights, to protect our trade secrets, or to determine the validity and scope of the proprietary rights of others. Litigation could result in substantial costs and diversion of resources. In turn, our business, results of operations, cash flow, and financial condition could be materially adversely affected.

Mergers or other strategic transactions involving our competitors could weaken our competitive position or reduce our revenue. Our competitors have been consolidating, which may make them more formidable competitors to us. Competing with stronger companies may cause us to experience pricing pressure and loss of market share, either of which could have a material adverse effect on our business, results of operations, cash flow, and financial condition. Our competitors may establish or strengthen their cooperative relationships with vendors, systems integrators, third-party consulting firms, or other parties. Established companies may not only develop their own products but may also acquire or partner with our current competitors. If any of these events occur, our revenue and profitability could significantly decline.

Our business, results of operations, cash flow, and financial condition may be adversely affected if we cannot integrate acquired companies or manage joint ventures. We may from time to time acquire companies with complementary products and services. These acquisitions will expose us to increased risks and costs, including those arising from the following: assimilating new operations and personnel; diverting financial and management resources from existing operations; and integrating acquired technologies. We may not be able to generate sufficient revenue from any of these acquisitions to offset the associated acquisition costs.

We will also be required to maintain uniform standards of quality and service, controls, procedures, and policies. Our failure to achieve any of these standards may hurt relationships with customers, employees, and new management personnel. In addition, future acquisitions may result in additional issuances of stock that could be dilutive to our shareholders.

Many acquisition candidates have significant intangible assets, and an acquisition of these businesses would likely result in significant amounts of goodwill and 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 charges to income arising from such impairment reviews could be significant. Likewise, future quarterly and annual earnings could be significantly adversely affected. In addition, these acquisitions could involve acquisition-related charges, such as one-time acquired research and development charges.

We may also evaluate joint venture relationships with complementary businesses. Any joint venture we enter into would involve many of the same risks posed by acquisitions, particularly the following: risks associated with the diversion of resources; the inability to generate sufficient revenue; the management of relationships with third parties; and potential additional expenses.

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 impacted by many factors, including: demand for our products; the timing of and extent to which we invest in new technology; the timing of and extent to which we acquire other companies; the level and timing of revenue; the expenses of sales and marketing and new product development; the success and related expense of increasing our brand awareness; the cost of facilities to accommodate a growing workforce; the extent

to which competitors are successful in developing new products and increasing their market share; and the 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. In addition, since we have historically financed our growth through cash flow from operations and available cash, our relative inexperience in accessing the credit or capital markets may impair our ability to do so if the need arises. Our inability to raise capital when needed could have a material adverse effect on our business, results of operations, cash flow and financial condition. If additional funds are raised through the issuance of equity securities, the percentage ownership of our company held by our current shareholders would be diluted.

Fires or other catastrophic events at our principal facilities could cripple our business. Fires, natural disasters or other catastrophic events, particularly those affecting our Atlanta headquarters or India research and development center, may cause damage or disruption to our operations, and thus could have a strong negative effect on us. Our business operations are subject to interruption by natural disasters, fire, power shortages, pandemics and other events beyond our control. Although we maintain crisis management and disaster response plans, such events could make it difficult or impossible for us to deliver our services to our customers.

Our ability to maintain and develop our brand is critical for our continued success. The brand identity we have developed has significantly contributed to the continued success of our business. Our ability to maintain and develop our brand is critical in expanding our base of customers, partners and employees. Our brand will depend largely on our ability to remain a technology leader and continue to provide high-quality innovative products, services, and features. Significant investments may be required in order to maintain and develop our brand. However, the investments may later be proven to be unsuccessful. If we fail to maintain and develop our brand, or if we incur excessive expenses in our efforts to do so, our business, operating results and financial condition may be materially and adversely affected.

Adverse litigation results could affect our business. From time to time, we may be involved in litigation relating to claims arising in the ordinary course of business, and occasionally legal proceeding not in the ordinary course. Litigation can be lengthy, expensive and disruptive to our operations, and can divert our management's attention away from running our core business. The results of any litigation also 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. Additional information regarding legal matters in which we are involved can be found in Note 5 of the Notes to our Consolidated Financial Statements.

Our stock price has been highly volatile. The trading price of our common stock has fluctuated significantly since our initial public offering in April 1998. In addition, the trading price of our common stock could be subject to wide fluctuations in response to various factors, including: global macro-economic contraction impacting demand for supply chain solutions; quarterly variations in operating results; announcements of technological innovations or new products by us or our competitors; developments with respect to patents or proprietary rights; changes in financial estimates by securities analysts; and mergers, acquisitions, and combinations involving our competitors or us.

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 of our company. These provisions might discourage, delay, or prevent a change in the control of our company 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.

Economic conditions and regulatory changes caused by the United Kingdom's likely exit from the European Union could adversely affect our business. In June 2016, the United Kingdom held a referendum in which voters approved

an exit from the European Union, commonly referred to as Brexit. On March 29, 2017, the United Kingdom notified the European Union of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. The terms of the withdrawal are subject to a negotiation period that could last at least two years from the withdrawal notification date. If no formal withdrawal agreement is reached between the United Kingdom and the European Union, then it is expected the United Kingdom's membership of the European Union will automatically terminate two years after the submission of the notification of the United Kingdom's intention to withdraw from the European Union, unless all remaining member states unanimously consent to an extension of this period. Discussions between the United Kingdom and the European Union focused on finalizing withdrawal issues and transition agreements are ongoing. However, limited progress to date in these negotiations and ongoing uncertainty within the UK Government and Parliament sustains the possibility of the United Kingdom leaving the European Union on March 29, 2019 without a withdrawal agreement and associated transition period in place, which is likely to cause significant market and economic disruption. Brexit has caused, and may continue to result in, significant volatility in global stock market and currency exchange rate fluctuations of the U.S. dollar relative to other foreign currencies in which we conduct business. While the specific terms and impact of Brexit are not yet known, Brexit may cause our customers to closely monitor their costs and reduce their spending budgets. This could adversely affect our business, financial condition, operating results and cash flows. Our EMEA operations represented approximately 15% and 14% of our total revenue for 2018 and 2017, respectively.

**Changes in, or interpretation of, accounting principles could result in unfavorable accounting changes.** Our Consolidated Financial Statements are prepared in conformity with U.S. generally accepted accounting principles (GAAP) and accompanying accounting pronouncements, implementation guidelines, and interpretations. These rules are subject to interpretation by the SEC and various bodies formed to interpret and create appropriate accounting principles. Changes in these rules or their interpretation could significantly change our reported results and may even retroactively affect previously reported transactions. Our accounting principles that may be affected by changes in accounting principles include, but are not limited to, revenue recognition and leases. We adopted the new revenue recognition standard in 2018 and are continuing to evaluate the impact that the adoption of the new leasing standard will have on our Consolidated Financial Statements. Changes resulting from these new accounting standards or the adoption of other new or revised accounting principles may result in materially different financial results and may require that we make changes to our systems, processes and controls. For further detail, please see the new accounting pronouncements discussion in Note 1 of the Notes to our Consolidated Financial Statements.

**Item 1B. Unresolved Staff Comments**

None.

**Item 2. Properties**

Our principal administrative, sales, marketing, support, and research and development facility is located in approximately 221,000 square feet of modern office space in Atlanta, Georgia. Substantially all of this space is leased to us through September 30, 2025. We have an additional office under a multi-year agreement in New Jersey. We also occupy facilities outside of the United States under multi-year agreements in the United Kingdom, the Netherlands, France, Chile, China, Japan, Singapore, India, and Australia. We also occupy offices under short-term agreements in Germany and Spain. We believe our office space is adequate to meet our immediate needs; however, we may expand into additional facilities in the future.

**Item 3. Legal Proceedings**

From time to time, we may be a party to legal proceedings arising in the ordinary course of business, and we could be a party to legal proceedings not in the ordinary course of business. We are not currently a party to any legal proceeding the result of which we believe could have a material adverse impact upon our business, financial position, results of operations, or cash flows.

Many of our installations involve products that are critical to the operations of our clients' 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 set forth in our contracts will be enforceable in all instances.

**Item 4. *Mine Safety Disclosures***

Not applicable.

PART II

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

Market for Common Stock

Our common stock is traded on the Nasdaq Global Select Market under the symbol "MANH." The number of registered shareholders of record of our common stock as of January 30, 2019 was approximately 13. The number of record holders does not include persons who held our common stock in nominee or "street name" accounts through brokers.

We do not intend to declare or pay cash dividends in the foreseeable future. Our management anticipates that all earnings and other cash resources, if any, will be retained for investment in our business.

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**Equity Compensation Plan Information**

In the following table, we provide information regarding our current equity compensation plans as of December 31, 2018:

Plan Category	Number of securities to be issued upon exercise of outstanding rights	Weighted-average exercise price of outstanding rights	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by security holders	997,173	\$0.00	9,844,416
Equity compensation plans not approved by security holders	-	-	-
Total	997,173	\$0.00	9,844,416

You may find additional information regarding our equity compensation plans in Note 2 of the Notes to our Consolidated Financial Statements.

**Purchase of Equity Securities**

In the following table, we provide information regarding our common stock repurchases under our publicly-announced share repurchase program for the quarter ended December 31, 2018. All repurchases related to the share repurchase program were made on the open market.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs
October 1 - October 31, 2018	66,024	\$45.39	2,997,084	\$47,002,916
November 1 - November 30, 2018	321,459	48.31	15,529,173	31,473,743
December 1 - December 31, 2018	131,065	47.53	6,229,723	25,244,020
Total	518,548		24,755,980	

In 2018, we repurchased a total of 3,147,466 shares at an average price per share of \$45.52 under our publicly-announced share repurchase program. In January 2019, our Board of Directors authorized us to repurchase up to an aggregate of \$50 million of our common stock.

**Item 6. *Selected Financial Data***

You should read the following selected consolidated financial data in conjunction with our Consolidated Financial Statements and related Notes thereto and with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included elsewhere in this Form 10-K. The statement of income and cash flow data for 2018, 2017 and 2016, and the balance sheet data as of December 31, 2018 and 2017, are derived from, and are qualified by reference to, the audited financial statements included elsewhere in this Form 10-K. The statement of income and cash flow data for the year ended December 31, 2015 (“2015”) and the year ended December 31, 2014 (“2014”) and the balance sheet data as of December 31, 2016, 2015, and 2014 are derived from audited financial statements not included herein. Historical results are not necessarily indicative of results to be expected in the future.

Year Ended December 31,  
2014      2015      2016      2017      2018  
(in thousands, except per share data)

## Statement of Income Data:

Cloud subscriptions	\$3,122	\$4,617	\$5,783	\$9,596	\$23,104
Software license	\$68,461	\$73,998	\$79,213	\$72,313	\$45,368
Total revenue	\$492,104	\$556,371	\$604,557	\$594,599	\$559,157
Operating income	\$127,124	\$161,446	\$194,307	\$185,645	\$133,887
Net income	\$82,000	\$103,475	\$124,234	\$116,481	\$104,690
Earnings per diluted share	\$1.08	\$1.40	\$1.72	\$1.68	\$1.58

December 31,  
2014      2015      2016      2017      2018  
(in thousands)

## Balance Sheet Data:

Cash, cash equivalents and investments	\$124,438	\$128,760	\$95,615	\$125,522	\$100,566
Total assets	\$318,170	\$337,913	\$297,140	\$314,995	\$307,150
Debt	\$-	\$-	\$-	\$-	\$-
Shareholders' equity	\$182,023	\$195,492	\$169,366	\$174,956	\$147,147

Year Ended December 31,  
2014      2015      2016      2017      2018  
(in thousands)

## Statement of Cash Flow Data:

Operating cash flow	\$94,162	\$120,153	\$139,346	\$164,066	\$137,349
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**Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

All statements, trend analyses, and other information contained in the following discussion relative to markets for our products and trends in revenue, gross margins, and anticipated expense levels, as well as other statements including words such as “may,” “expect,” “forecast,” “anticipate,” “intend,” “plan,” “believe,” “could,” “seek,” “project,” “estimate,” and other expressions constitute forward-looking statements. These forward-looking statements are subject to business and economic risks and uncertainties, including those discussed under the caption “Risk Factors” in Item 1A of this Form 10-K, and our actual results of operations may differ materially from those contained in the forward-looking statements.

**Business Overview**

We develop, sell, deploy, service and maintain software solutions designed to manage supply chains, inventory and omnichannel operations for retailers, wholesalers, manufacturers, logistics providers and other organizations. Our customers include many of the world's most premier and profitable brands.

Our business model is singularly focused on the development and implementation of complex commerce enablement software solutions that are designed to optimize supply chains, and retail store operations including point of sale effectiveness and efficiency for our customers. In the second quarter of 2017, we accelerated our business transition to

cloud subscriptions with the release of our Manhattan Active™ Solutions. Due to our transition to cloud subscriptions, we believe separate disclosures of our software license, cloud subscriptions, maintenance and services revenue is meaningful to investors and provide an important measure of our business performance.

We have five principal sources of revenue:

- cloud subscriptions, including software as a service (“SaaS”) and hosting of software;
- licenses of our software;
- customer support services and software enhancements (collectively, “maintenance”);
- professional services, including solutions planning and implementation, related consulting, customer training, and reimbursements from customers for out-of-pocket expenses (collectively, “services”); and
- hardware sales.

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In 2018, we generated \$559.2 million in total revenue, with a revenue mix of: cloud subscriptions 4%; software license 8%; maintenance 26%; services 59%; and hardware 3%.

We have three geographic reportable segments: the Americas, EMEA, and APAC. Geographic revenue is based on the location of the sale. Our international revenue was approximately \$174.1 million, \$168.3 million, and \$144.8 million for 2018, 2017 and 2016, respectively, which represents approximately 31%, 28%, and 24% of our total revenue for 2018, 2017 and 2016, respectively. International revenue includes all revenue derived from sales to customers outside the United States. At December 31, 2018, we employed approximately 3,000 employees worldwide. We have offices in Australia, Chile, China, France, Germany, India, Japan, the Netherlands, Singapore, Spain and the United Kingdom, as well as representatives in Mexico and reseller partnerships in Latin America, Eastern Europe, the Middle East, South Africa, and Asia.

### Future Expectations

Our transition to a cloud subscription model, shifting industry dynamics and economic uncertainty in retail impacted our revenue and earnings growth in 2018 and 2017, and we expect that, going forward, these factors, as well as macroeconomic conditions as a whole, may continue to impact revenue and earnings growth. The pace at which the market for our products transitions from perpetual, on-premises installation to cloud subscriptions, which result in revenue recognition spread out over the subscription period rather than up front, and the lead times for developing new business, which can be long for our products, can cause uncertainty for our future expectations, particularly with respect to our ability to accurately forecast bookings and revenues from quarter to quarter and over the longer term.

As we move into 2019, our five strategic goals continue to be:

- ◆ Focus on customer success and drive sustainable growth;
- ◆ Aggressively invest in innovation to expand our products and total addressable market;
- ◆ Develop and grow our cloud operations and cloud subscription revenue;
  - Expand our Manhattan Active Omni/Point-of-Sale/Customer Engagement Business; and
- ◆ Expand our global sales and marketing teams.

### Cloud Subscription

Historically, our software licenses were sold as perpetual licenses, under which customers own the software license and revenue is recognized at the time of sale. In 2017, we released Manhattan Active™ Solutions, accelerating our business transition to cloud subscriptions. Under a cloud subscription, customers pay a periodic fee for the right to use our software within a cloud-based environment that we provide and manage over a specified period of time. As part of our subscription program, we allow our existing customers to convert their maintenance contracts to cloud subscription contracts. While it is early in our transition, a few customers converted their maintenance contracts to subscriptions in 2017 and 2018, and we expect there will be continued opportunities to convert existing maintenance contracts to cloud subscription contracts in 2019 and beyond.

With the launch of Manhattan Active Solutions, the transition to a cloud subscription model has had, and will continue to have, an adverse impact on revenue, earnings and cash flow relative to periods in which we primarily sell perpetual

licenses. This effect will continue until a stable, recurring mix of perpetual license to cloud subscription revenues develops.

#### Global Economic Trends and Industry Factors

Global macro-economic trends, technology spending, and supply chain management market growth are important barometers for our business. In 2018, approximately 69% of our total revenue was generated in the United States, 15% in EMEA, and the remaining balance in APAC, Canada, and Latin America. In addition, Gartner Inc., an information technology research and advisory company, estimates that nearly 80% of every supply chain software solutions dollar invested is spent in North America and Western Europe; consequently, the health of the U.S. and the Western European economies have a meaningful impact on our financial results.

We sell technology-based solutions with total pricing, including software and services, in many cases exceeding \$1.0 million. Our software is often a part of our customers' and prospects' much larger capital commitment associated with facilities expansion and business improvement. We believe that, given the lingering uncertainty in the global macro environment primarily in the retail industry, the current sales cycles for large license sales and cloud subscriptions of \$1.0 million or greater in our target markets have been extended. The current business climate within the United States and geographic regions in which we operate continues to affect customers' and prospects' decisions regarding timing of strategic capital expenditures. Delays with respect to such decisions can have a material adverse impact on our business, and may further intensify competition in our already highly competitive markets.

In January 2019, the International Monetary Fund (IMF) provided a World Economic Outlook (WEO) update. The WEO update noted, "the global expansion has weakened. The global economy is projected to grow at 3.5 percent in 2019 and 3.6 percent in 2020,

0.2 and 0.1 percentage point below last October's projections. The global growth forecast for 2019 and 2020 had already been revised downward in the last WEO, partly because of the negative effects of tariff increases enacted in the United States and China earlier that year. The further downward revision since October in part reflects carry over from softer momentum in the second half of 2018."

The WEO update projected that advanced economies, which represent our primary revenue markets, would grow at about 2.0 percent in 2019 and 1.7 percent in 2020, while the emerging and developing economies would grow at about 4.5 percent in 2019 and 4.9 percent in 2020.

While we are encouraged by our 2018 and 2017 results, we, along with many of our customers, still remain cautious regarding the pace of global economic growth. We believe global geopolitical and economic volatility likely will continue to shape customers' and prospects' enterprise software buying decisions, making it challenging to forecast sales cycles for our products and the timing of large enterprise software license and cloud subscription sales.

### Revenue

Software License and Cloud Subscriptions revenue: Software license and cloud subscriptions revenue, leading indicators of our business performance, are primarily derived from software license and cloud subscription fees that customers pay for supply chain solutions. In 2018, software license revenue totaled \$45.4 million, or 8% of total revenue, with gross margins of 88.3%. Software license revenue recognized by the Americas, EMEA, and APAC segments totaled \$28.4 million, \$11.4 million, and \$5.6 million, respectively, in 2018. Prior to 2017, the overall trend has been steady for our large license sales. However, in 2017, we began experiencing extended sales cycles and evaluations with greater focus on capital prioritization as retailers restructure and transform their omni-channel/digital commerce businesses. In addition, during 2017, we introduced Manhattan Active Solutions, our cloud-based solutions, and began to see our customer's transition from perpetual software licenses to cloud-based services solutions. In 2018, cloud subscriptions revenue totaled \$23.1 million or 4% of total revenues. The Americas, EMEA and APAC segments recognized \$20.6 million, \$2.1 million and \$0.4 million in cloud subscriptions revenue, respectively, in 2018. Cloud subscriptions revenue is recognized ratably over the term of the agreement, typically 36 to 60 months. In 2018, the percentage mix of new to existing customers for the combination of software license and cloud subscriptions revenue was approximately 40/60.

Software license and cloud subscriptions revenue growth is influenced by the strength of general economic and business conditions and the competitive position of our software products. These revenues generally have long sales cycles. In addition, the timing of the closing of a few large software license transactions can have a material impact on our software license revenues, operating profit, operating margins and earnings per share. For example, \$0.9 million of either pre-tax profit or expense in 2018 equates to approximately one cent of diluted earnings per share impact.

Our software solutions are focused on core supply chain commerce operations (Warehouse Management, Transportation Management and Labor Management), Inventory optimization and Omnichannel operations (e-commerce, retail store operations and point of sale), which are intensely competitive markets characterized by rapid technological change. We are a market leader in the supply chain management software solutions market as defined by industry analysts such as ARC Advisory Group and Gartner. Our goal is to extend our position as a leading global supply chain solutions provider by growing our software license and cloud subscriptions revenues faster than our competitors through investment in innovation. We expect to continue to face increased competition from Enterprise Resource Planning (ERP) and Supply Chain Management applications vendors and business application software vendors that may broaden their solutions offerings by internally developing, or by acquiring or partnering with independent developers of supply chain planning and execution software. Increased competition could result in price reductions, fewer customer orders, reduced gross margins, and loss of market share.

Maintenance revenue: Our maintenance revenue totaled \$147.0 million, or 26% of total revenue. The Americas, EMEA and APAC segments recognized \$117.5 million, \$20.9 million, and \$8.6 million, respectively, in maintenance

revenue in 2018. For maintenance, we offer a comprehensive 24 hours per day, 365 days per year program that provides our customers with software upgrades, when and if available, which include additional or improved functionality and technological advances incorporating emerging supply chain and industry initiatives. The growth of maintenance revenues is influenced by: (1) new software license revenue growth; (2) annual renewal of support contracts; (3) increase in customers through acquisitions; (4) fluctuations in currency rates, and (5) conversion of maintenance contracts to cloud subscription contracts. Substantially all of our customers renew their annual support contracts. Over the last three years, our annual revenue renewal rate of customers subscribing to comprehensive support and enhancements has been greater than 90%. Maintenance revenue is generally paid in advance and recognized ratably over the term of the agreement, typically twelve months. Maintenance renewal revenue is recognized over the renewal period once we have a contract upon payment from the customer.

Services revenue: In 2018, our services revenue totaled \$329.7 million, or 59% of total revenue. The Americas, EMEA, and APAC segments recognized \$265.2 million, \$50.3 million, and \$14.2 million, respectively. Due to our large services revenue mix as a percentage of total revenue, our consolidated operating margin profile may be lower than those of our competitors, and while we

believe our services margins are strong, they do lower our operating margin profile as services margins are inherently lower than the margin for software license revenue and some of our other revenue sources.

At December 31, 2018, our professional services organization accounted for 63% of our total employees worldwide. Our professional services organization provides our customers with expertise and assistance in planning and implementing our solutions. To ensure a successful product implementation, consultants assist customers with the initial installation of a system, the conversion and transfer of the customer's historical data onto our system, and ongoing training, education, and system upgrades. We believe our professional services enable customers to implement our software rapidly, ensure the customer's success with our solutions, strengthen our customer relationships, and add to our industry-specific knowledge base for use in future implementations and product innovations.

Although our professional services are optional, the majority of our customers use at least some portion of these services for their planning, implementation, or related needs. Professional services are typically rendered under time and materials-based contracts with services typically billed on an hourly basis. Professional services are sometimes rendered under fixed-fee based contracts with payments due on specific dates or milestones.

Services revenue growth is contingent upon software license revenue, cloud subscriptions and customer upgrade cycles, which are influenced by the strength of general economic and business conditions and the competitive position of our software products. In addition, our professional services business has competitive exposure to offshore providers and other consulting companies. All of these factors potentially create the risk of pricing pressure, fewer customer orders, reduced gross margins, and loss of market share.

Services revenue also includes reimbursements from customers for out-of-pocket expenses. The total amount of expense reimbursement recorded to service revenue was \$16.8 million for 2018.

**Hardware:** Our hardware revenue, which we recognize net of related costs as of January 1, 2018, totaled \$14.0 million in 2018 representing 3% of total revenue. In conjunction with the licensing of our software, and as a convenience for our customers, we resell a variety of hardware products developed and manufactured by third parties. These products include computer hardware, radio frequency terminal networks, RFID chip readers, bar code printers and scanners, and other peripherals. We resell all third-party hardware products and related maintenance pursuant to agreements with manufacturers or through distributor-authorized reseller agreements pursuant to which we are entitled to purchase hardware products and services at discount prices. We generally purchase hardware from our vendors only after receiving an order from a customer. As a result, we do not maintain hardware inventory.

### Product Development

We continue to invest significantly in research and development (R&D) to provide leading solutions that help global retailers, manufacturers, wholesalers, distributors and logistics providers successfully manage accelerating and fluctuating demands as well as the increasing complexity and volatility of their local and global supply chains, retail store operations and point of sale. Our research and development expenses for 2018, 2017 and 2016 were \$71.9 million, \$57.7 million, and \$54.7 million, respectively.

We expect to continue to focus our R&D resources on the development and enhancement of our core supply chain, inventory optimization, omni-channel and point of sale software solutions. We offer what we believe to be the broadest solutions portfolio in the supply chain solutions marketplace, to address all aspects of inventory optimization, transportation management, distribution management, planning, and omni-channel operations including order management, store inventory & fulfillment, call center and point of sale.

We also plan to continue to enhance our existing solutions and to introduce new solutions to address evolving industry standards and market needs. We identify opportunities to further enhance our solutions and to develop and provide

new solutions through our customer support organization, as well as through ongoing customer consulting engagements and implementations, interactions with our user groups, association with leading industry analysts and market research firms, and participation in industry standards and research committees. Our solutions address the needs of customers in various vertical markets, including retail, consumer goods, food and grocery logistics service providers, industrial and wholesale, high technology and electronics, life sciences, and government.

Cash Flow and Financial Condition

For 2018, we generated cash flow from operating activities of \$137.3 million and have generated a cumulative total of \$440.8 million for the three years ended December 31, 2018. Our cash at December 31, 2018 totaled \$100.6 million, with no debt on our balance sheet. We currently have no credit facilities. During the past three years, our primary uses of cash have been for funding investments in R&D, in operations to drive earnings growth, and in repurchases of our common stock.

During 2018, we repurchased approximately \$143.3 million of Manhattan Associates' outstanding common stock under the share repurchase program approved by our Board of Directors throughout the year.

In 2019, our priorities for use of cash will continue to be investments in product development and in the growth of our business. We expect to continue to evaluate acquisition opportunities that are complementary to our product footprint and technology direction. We also expect to continue to weigh our share repurchase options against cash for acquisitions and investing in the business. We do not anticipate any borrowing requirements in 2019 for general corporate purposes.

### Full Year 2018 Financial Summary

- Diluted earnings per share: \$1.58 for 2018 compared to \$1.68 for 2017;
- Consolidated revenue: \$559.2 million for 2018 compared to \$594.6 million for 2017;
- Cloud subscription revenue: \$23.1 million for 2018 compared to \$9.6 million for 2017;
- License revenue: \$45.4 million for 2018, compared to \$72.3 million for 2017;
- Operating income: \$133.9 million for 2018, compared to \$185.6 million for 2017;
- Operating margins: 23.9% for 2018 compared to 31.2% for 2017;
- Cash flow from operations: \$137.3 million for 2018 compared to \$164.1 million for 2017;
- Cash on hand: \$100.6 million at December 31, 2018 compared to \$125.5 million at December 31, 2017;
- Share repurchases: In 2018, we reduced our common shares outstanding by 4%, primarily through the repurchase of approximately 3.1 million shares of our common stock, under the share repurchase program authorized by our Board of Directors. In January 2019, our Board of Directors confirmed our existing authority to repurchase up to an aggregate of \$50 million of our outstanding common stock.

### Results of Operations

In the following table, we present a selection of certain Statement of Income data for 2018, 2017 and 2016. With our transition to and growth in cloud subscriptions, which began in 2017, we believe separate disclosures of our software license, cloud subscriptions, maintenance and services revenue is meaningful to investors and provides an important measure of our business performance.

	Year Ended December 31,			% Change vs. Prior Year	
	2018	2017	2016	2018	2017
	(in thousands)				
Revenue:					
Cloud subscriptions	\$23,104	\$9,596	\$5,783	141%	66%
Software license	45,368	72,313	79,213	-37%	-9%
Maintenance	147,033	142,998	133,848	3%	7%
Services	329,685	326,502	351,785	1%	-7%
Hardware	13,967	43,190	33,928	-68%	27%
Total revenue	559,157	594,599	604,557	-6%	-2%
Costs and expenses:					
Cost of software license	5,297	5,483	6,818	-3%	-20%
Cost of cloud subscriptions, maintenance and services	235,584	208,045	219,635	13%	-5%
Cost of hardware	-	32,205	23,426	-100%	87%
Research and development	71,896	57,704	54,736	25%	5%

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Sales and marketing	51,262	47,482	48,223	8%	-2%
General and administrative	52,618	46,054	48,322	14%	-5%
Depreciation and amortization	8,613	9,060	9,090	-5%	0%
Restructuring charges	-	2,921	-	-100%	NA
Total costs and expenses	425,270	408,954	410,250	4%	0%
Income from operations	\$133,887	\$185,645	\$194,307	-28%	-4%
Operating margin	23.9%	31.2%	32.1%		

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We have three geographic reportable segments: the Americas, EMEA, and APAC. Geographic revenue information is based on the location of sale. The revenues represented below are from external customers only. The geography-based expenses include costs of personnel, direct sales, marketing expenses, and general and administrative costs to support the business. There are certain corporate expenses included in the Americas segment that we do not charge to the other segments including research and development, certain marketing and general and administrative costs that support the global organization, and the amortization of acquired developed technology. Included in the Americas costs are all research and development costs, including the costs associated with our operations in India. During 2018, 2017, or 2016, we derived the majority of our revenues from sales to customers within our Americas segment. In the following table, we present a summary of revenue and operating profit by segment:

	Year Ended December 31,			% Change vs. Prior Year	
	2018 (in thousands)	2017	2016	2018	2017
<b>Revenue:</b>					
<b>Cloud subscriptions</b>					
Americas	20,611	9,274	5,783	122%	60%
EMEA	2,075	322	-	544%	NA
APAC	418	-	-	NA	NA
Total cloud subscriptions	23,104	9,596	5,783	141%	66%
<b>Software license</b>					
Americas	\$28,423	\$44,145	\$65,351	-36%	-32%
EMEA	11,406	22,875	9,187	-50%	149%
APAC	5,539	5,293	4,675	5%	13%
Total software license	45,368	72,313	79,213	-37%	-9%
<b>Maintenance</b>					
Americas	117,489	116,426	111,592	1%	4%
EMEA	20,933	18,710	15,117	12%	24%
APAC	8,611	7,862	7,139	10%	10%
Total maintenance	147,033	142,998	133,848	3%	7%
<b>Services</b>					
Americas	265,165	264,186	296,983	0%	-11%
EMEA	50,328	43,431	41,969	16%	3%
APAC	14,192	18,885	12,833	-25%	47%
Total services	329,685	326,502	351,785	1%	-7%
<b>Hardware</b>					
Americas	13,798	43,118	33,875	-68%	27%
EMEA	2	11	9	-82%	22%
APAC	167	61	44	174%	39%
Total hardware	13,967	43,190	33,928	-68%	27%
<b>Total Revenue</b>					
Americas	445,486	477,149	513,584	-7%	-7%
EMEA	84,744	85,349	66,282	-1%	29%

APAC	28,927	32,101	24,691	-10%	30%
Total revenue	\$559,157	\$594,599	\$604,557	-6%	-2%
Operating income:					
Americas	\$97,529	\$136,693	\$164,947	-29%	-17%
EMEA	26,437	35,829	22,060	-26%	62%
APAC	9,921	13,123	7,300	-24%	80%
Total operating income	\$133,887	\$185,645	\$194,307	-28%	-4%

The consolidated results of our operations for 2018, 2017 and 2016 are discussed below.

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## Revenue

Our revenue consists of fees generated from cloud subscriptions, software licensing, maintenance, professional services, and hardware sales.

	Year Ended December 31,			% Change vs. Prior Year		% of Total Revenue			
	2018	2017	2016	2018	2017	2018	2017	2016	
	(in thousands)								
Cloud subscriptions	\$23,104	\$9,596	\$5,783	141%	66%	4%	2%	1%	
Software license	45,368	72,313	79,213	-37%	-9%	8%	12%	13%	
Maintenance	147,033	142,998	133,848	3%	7%	26%	24%	22%	
Services	329,685	326,502	351,785	1%	-7%	59%	55%	58%	
Hardware	13,967	43,190	33,928	-68%	27%	2%	7%	6%	
Total revenue	\$559,157	\$594,599	\$604,557	-6%	-2%	100%	100%	100%	
Cloud Subscriptions revenue									

### Year 2018 compared with year 2017

In 2017, we released Manhattan Active™ Solutions accelerating our business transition to cloud subscriptions. As a result, cloud subscriptions revenue increased \$13.5 million to \$23.1 million in 2018 compared to 2017 as customers began to purchase our SaaS offerings rather than a traditional perpetual license. Our customers increasingly prefer cloud-based solutions, including existing customers that are migrating from on-premise to cloud-based offerings. Cloud subscriptions revenue for the Americas, EMEA and APAC segments increased \$11.3 million, \$1.8 million and \$0.4 million, respectively. The EMEA segment began recognizing cloud subscription revenue for the first time in 2017 while the APAC segment began in 2018.

### Year 2017 compared with year 2016

Cloud subscriptions revenue increased \$3.8 million to \$9.6 million in 2017 compared to 2016 as customers began to purchase our SaaS offerings rather than a traditional perpetual license. Cloud subscriptions revenue for the Americas segment increased \$3.5 million. In 2017, the EMEA segment began recognizing cloud subscription revenue for the first time totaling \$0.3 million.

### Software License revenue

#### Year 2018 compared with year 2017

Software license revenue decreased \$26.9 million to \$45.4 million in 2018 compared to 2017. The decrease was influenced by (1) extended sales cycles and evaluations for some of our contracts, and (2) the business transition to cloud subscriptions, which resulted in traditional perpetual license deals closing as cloud deals based on customer demand. License revenue for the Americas and EMEA segments decreased \$15.7 million and \$11.5 million, respectively, in 2018 over 2017, while license revenue for the APAC segment increased \$0.3 million.

The perpetual license sales percentage mix across our product suite in 2018 was approximately 80% warehouse management solutions.

Year 2017 compared with year 2016

License revenue decreased \$6.9 million to \$72.3 million in 2017 compared to 2016. The decrease was influenced by our business transition to cloud subscriptions as traditional perpetual license deals converted to cloud deals based on customer demand. License revenue for the Americas segment decreased \$21.2 million, and license revenue for the EMEA and APAC segments increased \$13.7 million and \$0.6 million, respectively, in 2017 over 2016.

The license sales percentage mix across our product suite in 2017 was approximately 73% warehouse management solutions. Our warehouse management solutions increased \$4.3 million in 2017 compared to 2016, and non-warehouse management solutions decreased \$11.2 million over 2016.

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### *Maintenance revenue*

Year 2018 compared with year 2017

Maintenance revenue increased \$4.0 million in 2018 compared to 2017 primarily due to (1) an increase in the first-year maintenance revenue; (2) our annual renewal rate of customers subscribing to maintenance, which was greater than 90%; and (3) increases in the maintenance renewal prices. Maintenance revenue for the Americas, EMEA and APAC segments increased \$1.1 million, \$2.2 million and \$0.7 million, respectively, compared to 2017.

Year 2017 compared with year 2016

Maintenance revenue increased \$9.1 million in 2017 compared to 2016 primarily due to an increase in the first-year maintenance revenue; combined with our annual renewal rate of customers subscribing to maintenance of greater than 90%; and increases in the maintenance renewal prices. Maintenance revenue for the Americas, EMEA and APAC segment increased \$4.8 million, \$3.6 million and \$0.7 million, respectively, compared to 2016.

### Services revenue

Year 2018 compared with year 2017

Services revenue for 2018 increased \$3.2 million over 2017 on improving demand in the Americas and solid growth in EMEA. Services revenue for the Americas and EMEA segment increased \$1.0 million and \$6.9 million, respectively, and services revenue for the APAC segment decreased \$4.7 million, compared to 2017.

Year 2017 compared with year 2016

Services revenue decreased \$25.3 million in 2017 compared to 2016. The Americas segment decreased \$32.8 million, and the EMEA and APAC segments increased \$1.5 million and \$6.1 million, respectively, compared to 2016. The decline in services revenue in the Americas was primarily due to lower software license revenue, some retail customers delaying project implementations and upgrades, combined with our Services teams operating at high efficiency improving the speed of implementations. The increase in services revenue in the EMEA and APAC segment was primarily due to the increase in license deals in 2017, particularly for the EMEA segment, as well as customer-specific initiatives in conjunction with customer upgrade activity.

Service revenue includes reimbursements for professional service travel expenses that are required to be classified as revenue. Reimbursement by customers for out-of-pocket expenses were approximately \$16.8 million, \$17.9 million, and \$18.3 million for 2018, 2017 and 2016, respectively.

### Hardware revenue

Hardware sales decreased \$29.2 million to \$14.0 million in 2018 compared to 2017, primarily due to the adoption of the new revenue recognition standard (ASC 606). We adopted the new standard as of January 1, 2018 and elected to use the modified retrospective method. Historical hardware sales prior to the adoption of ASC 606 were recorded on a gross basis, as we were the principal in the transaction in accordance with the previous standard, ASC 605-45. Under the new standard, we are an agent in the transaction as we do not physically control the hardware which we sell. Accordingly, starting January 1, 2018, we recognize our hardware revenue net of related cost which reduces both hardware revenue and cost of sales as compared to our accounting prior to 2018. For comparison purposes only, had we implemented ASC 606 using the full retrospective method, we would have also presented hardware revenue net of cost for prior periods as shown below.

Year Ended December 31,

				% Change vs.	
	2018	2017	2016	Prior Year	
				2018	2017
Hardware Revenue (Pre ASC 606 Adoption)	\$49,914	\$43,190	33,928	16%	27 %
Cost of hardware	(35,947)	(32,205)	(23,426)	12%	37 %
Hardware Revenue, net (Post ASC 606 Adoption)	\$13,967	\$10,985	\$10,502	27%	5 %

The majority of hardware sales are derived from our Americas segment. Sales of hardware are largely dependent upon customer-specific desires, which fluctuate.

**Cost of Revenue**

	Year Ended December 31,			% Change vs. Prior Year	
	2018 (in thousands)	2017	2016	2018	2017
Cost of software license	\$5,297	\$5,483	\$6,818	-3%	-20%
Cost of cloud subscriptions, maintenance and services	235,584	208,045	219,635	13%	-5%
Cost of hardware	-	32,205	23,426	-100%	87%
Total cost of revenue	\$240,881	\$245,733	\$249,879	-2%	-2%
Cost of Software License					

Cost of software license consists of the costs associated with software reproduction; media, packaging and delivery; documentation, and other related costs; and royalties on third-party software sold with or as part of our products. In 2018, cost of license decreased \$0.2 million compared to 2017 principally due to the decrease in license revenue which resulted in lower royalty costs. Royalty costs decreased \$2.1 million and were partially offset by a \$1.7 million increase in third-party software license fees. In 2017, cost of license decreased \$1.3 million compared to 2016 principally due to a \$1.4 million decrease in cost of third-party software license fees.

**Cost of Cloud Subscriptions, Maintenance and Services****Year 2018 compared with year 2017**

Cost of cloud subscriptions, maintenance and services consists primarily of salaries and other personnel-related expenses of employees dedicated to cloud subscriptions; maintenance services; and professional and technical services as well as hosting fees. The \$27.5 million increase in 2018 compared to 2017 was principally due to an \$11.6 million increase in performance-based compensation expense, an \$8.8 million increase in computer infrastructure cost related to cloud business transition, and a \$7.0 million increase in other compensation and other personnel-related expenses resulting from increased headcount in professional services.

**Year 2017 compared with year 2016**

The \$11.6 million decrease in the cost of cloud subscriptions, maintenance and services in 2017 compared to 2016 was principally due to a \$7.1 million decrease in performance-based compensation expense and a \$4.5 million decrease in compensation and other personnel-related expense resulting from decreased headcount in professional services.

Cost of cloud subscriptions, maintenance and services include professional services billed travel expenses reimbursed by customers of approximately \$16.7 million, \$17.6 million and \$18.2 million for 2018, 2017 and 2016, respectively.

**Cost of Hardware**

As discussed above, we adopted the new revenue recognition standard as of January 1, 2018. As a result, we now recognize our hardware revenue net of related costs which reduces both hardware revenue and cost of sales as

compared to our accounting prior to 2018. Had we presented the results for 2017 and 2016 under ASC 606, cost of hardware would have been presented as zero as we would have recognized our hardware revenue net of related costs. In 2018, cost of hardware increased \$3.7 million compared to 2017 on increased hardware sales, while in 2017, cost of hardware increased \$8.8 million compared with 2016 on increased hardware sales.

**Operating Expenses**

	Year Ended December 31,			% Change vs. Prior Year	
	2018 (in thousands)	2017	2016	2018	2017
Research and development	\$71,896	\$57,704	\$54,736	25%	5%
Sales and marketing	51,262	47,482	48,223	8%	-2%
General and administrative	52,618	46,054	48,322	14%	-5%
Depreciation and amortization	8,613	9,060	9,090	-5%	0%
Restructuring charge	-	2,921	-	-100%	N/A
Operating expenses	\$184,389	\$163,221	\$160,371	13%	2%
Research and Development					

Our principal research and development (R&D) activities during 2018, 2017 and 2016 focused on the expansion and integration of new products and releases, while expanding the product footprint of our software solution suites in Supply Chain, Inventory Optimization and Omni-Channel including cloud-based solutions, point-of-sale and tablet retailing.

For 2018, 2017 and 2016, we did not capitalize any R&D costs because the costs incurred following the attainment of technological feasibility for the related software product through the date of general release were insignificant.

**Year 2018 compared with year 2017**

R&D expenses primarily consist of salaries and other personnel-related costs for personnel involved in our research and development activities. Research and development expenses in 2018 increased \$14.2 million compared to 2017. The increase is primarily attributable to an \$8.9 million increase in compensation and other personnel-related expenses, resulting from increased headcount to support R&D activities, a \$4.0 million increase in performance-based compensation and a \$0.7 million increase in computer infrastructure costs.

**Year 2017 compared with year 2016**

The \$3.0 million increase in research and development expenses in 2017 compared to 2016 was primarily due to a \$3.5 million increase in compensation and other personnel-related expenses resulting from increased headcount to support R&D activities.

**Sales and Marketing****Year 2018 compared with year 2017**

Sales and marketing expenses include salaries, commissions, travel and other personnel-related costs and the costs of our marketing and alliance programs and related activities. Sales and marketing expenses increased \$3.8 million in 2018 compared to 2017, due primarily to an increase of \$2.9 million in marketing and campaign programs, a \$1.1 million increase in performance-based compensation and a \$0.7 million increase in compensation and other personnel-related expenses, partially offset by a \$2.0 million decrease in commissions expense as we must defer a portion of our sales commission expense and amortize it over time as the corresponding services are transferred to the

customer under ASC 606.

Year 2017 compared with year 2016

The \$0.7 million decrease in sales and marketing expenses in 2017, compared to 2016, was primarily due to a \$1.4 million decrease in compensation and other personnel-related expenses and a \$0.5 million decrease in performance-based compensation expense offset by a \$1.6 million increase in marketing-related expenses.

General and Administrative

Year 2018 compared with year 2017

General and administrative expenses consist primarily of salaries and other personnel-related costs of executive, financial, human resources, information technology, and administrative personnel, as well as facilities, legal, insurance, accounting, and other

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administrative expenses. General and administrative expenses increased \$6.6 million in 2018 due primarily to a \$3.6 million increase in compensation and other personnel-related expenses and a \$2.4 million increase in performance-based compensation.

Year 2017 compared with year 2016

General and administrative expenses decreased \$2.3 million in 2017, which was primarily due to a \$1.3 million decrease in performance-based compensation expense and a \$1.3 million decrease in other compensation and personnel-related expenses.

#### Depreciation and Amortization

Depreciation expense was \$7.5 million, \$7.7 million, and \$7.5 million in 2018, 2017 and 2016, respectively. Amortization of intangibles was \$1.2 million, \$1.3 million and \$1.6 million in 2018, 2017 and 2016, respectively. We have recorded goodwill and other acquisition-related intangible assets as part of the purchase accounting associated with various acquisitions.

#### Restructuring Charge

In May 2017, we eliminated about 100 positions due primarily to U.S. retail sector headwinds, aligning services capacity with demand. We recorded a restructuring charge of approximately \$2.9 million pretax (\$1.8 million after-tax or \$0.03 per fully diluted share). The charge primarily consisted of employee severance, employee transition costs and outplacement services and is classified in “Restructuring charge” in our Consolidated Statements of Income.

#### Operating Income

Operating income in 2018 decreased \$51.7 million to \$133.9 million, compared to \$185.6 million for 2017. Operating margins were 23.9% for 2018 versus 31.2% for 2017. Operating income and margin decreased primarily as a result of our investment in cloud transition combined with lower license revenue. The operating income decrease in the Americas, EMEA and APAC segment was \$39.1 million, \$9.4 million and \$3.2 million, respectively.

Operating income for 2017 decreased \$8.7 million to \$185.6 million, compared to \$194.3 million for 2016. Operating margins were 31.2% for 2017 versus 32.1% for 2016. Operating income and margin decreased due primarily to: (1) increased cloud subscription revenue mix to perpetual license, (2) services revenue decline and (3) the restructuring charge, partially offset by (1) increased maintenance revenue and (2) lower performance-based compensation during 2017. Operating income was also disadvantaged from unfavorable foreign currency translation effects of \$1.8 million for 2017, primarily due to the strengthening of the British Pound Sterling and Indian Rupee versus the U.S. dollar during the year. In 2017, operating income in the Americas segment decreased \$28.3 million on increased cloud subscription revenue mix to perpetual license and lower services revenue, and increased by \$13.8 million and \$5.8 million in the EMEA and APAC segments, respectively.

#### Other Income and Income Taxes

Year Ended December 31,

				% Change vs. Prior Year
	2018	2017	2016	2018 2017
Other income, net	\$2,344	\$(812 )	\$1,800	389%-145%
Income tax provision	31,541	68,352	71,873	-54%-5%
Other Income, net				

Other income, net primarily includes interest income, foreign currency gains and losses, and other non-operating expenses. Interest income was \$1.1 million, \$1.2 million, and \$1.2 million for 2018, 2017 and 2016, respectively. The weighted-average interest rate earned on cash and investments was approximately 1% for 2018, 2017 and 2016. We recorded net foreign currency gains of \$1.3 million and \$0.6 million in 2018 and 2016, respectively, and net foreign currency losses of \$1.8 million in 2017. The foreign currency gains and losses mainly resulted from gains or losses on intercompany transactions denominated in foreign currencies with subsidiaries due to the fluctuation of the U.S. dollar relative to other foreign currencies, primarily the British Pound sterling and the Indian Rupee.

### ***Income Tax Provision***

Our effective income tax rates were 23.2%, 37.0%, and 36.6% in 2018, 2017 and 2016, respectively. Our effective income tax rate takes into account the source of taxable income, domestically by state and internationally by country, and available income tax credits.

The effective income tax rate in 2018 decreased from 2017 primarily due to the enactment of the Tax Cuts and Jobs Act in December 2017 that reduced the U.S. federal corporate income tax rate to 21% from 35%.

The effective tax rate in 2017 increased from 2016 primarily due to the enactment of the Tax Cut and Jobs Act in December 2017, which resulted in a net one-time provisional estimated tax expense of approximately \$2.8 million in 2017, partially offset by the implementation impact of ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting* in 2017.

In December 2017, we recorded a provisional estimate of \$3.3 million for the one-time deemed repatriation transition tax on unrepatriated foreign earnings. The provisional amount was based on information available at that time, including estimated tax earnings and profits from foreign investments. In the fourth quarter of 2018, we finalized our transition tax calculation and recorded additional tax expense of \$0.3 million. In December 2017, we also recorded a provisional write-down to deferred tax assets of \$0.7 million related to changes in Section 162(m), Internal Revenue Code of 1986, regarding deductions for excessive employee compensation. In 2018, we finalized our calculation under Section 162(m) and recorded a tax benefit of \$0.5 million. We also recorded a one-time tax benefit in December 2017 of \$1.2 million from the remeasurement of deferred tax assets and liabilities from 35% to 21%. As of December 31, 2018, we have completed the accounting for all of the impacts of the Act.

Due to the implementation of ASU 2016-09, the income tax provision for 2017 included excess tax benefits of \$1.9 million on vesting of restricted stock, which would have been recorded as additional paid-in-capital under the previous guidance.

### **Liquidity and Capital Resources**

During 2018, 2017 and 2016, we funded our business through cash generated from operations. Our cash and investments as of December 31, 2018 included \$51.5 million held in the U.S. and \$49.1 million held by our foreign subsidiaries. We believe that our cash balances in the U.S. are sufficient to fund our U.S. operations, and we do not intend to repatriate foreign funds to the U.S. In the future, if we elect to repatriate the unremitted earnings of our foreign subsidiaries, we would no longer be subject to additional U.S. income taxes due to the enactment of the Tax Cut and Jobs Act in December 2017, but could be subject to additional local withholding taxes.

Cash flow from operating activities totaled \$137.3 million, \$164.1 million, and \$139.3 million in 2018, 2017 and 2016, respectively. Typical factors affecting our cash provided by operating activities include our level of revenue and earnings for the period, the timing and amount of employee bonus and income tax payments, and the timing of cash collections from our customers which is our primary source of operating cash flow. Cash flow from operating activities for 2018 decreased \$26.8 million compared to 2017 primarily attributable to our transition to cloud subscriptions. Cash flow from operating activities for 2017 increased \$24.8 million compared to 2016, which we primarily attributed to the timing of cash collections. Days sales outstanding was 64, 59 and 63 at December 31, 2018, 2017 and 2016, respectively, reflecting solid cash collections.

Investing activities used cash of approximately \$9.8 million and \$5.8 million in 2018 and 2017, respectively. In 2016, cash received from investing activities totaled \$3.4 million. Our investing activities for 2018, 2017 and 2016 consisted of capital spending to support company growth and short-term investing. For 2018, 2017 and 2016, capital expenditure was \$7.3 million, \$6.2 million, and \$6.8 million, respectively. Net investment purchases in 2018 was \$2.5 million. Net investment proceeds in 2017 and 2016 were \$0.4 million and \$10.2 million, respectively.

Financing activities used cash of approximately \$149.3 million, \$131.7 million, and \$162.7 million in 2018, 2017 and 2016, respectively. The principal use of cash for financing activities in 2018, 2017 and 2016 was to purchase our common stock, including shares withheld for taxes due upon vesting of restricted stock. Repurchases of our common stock for 2018, 2017 and 2016 totaled \$149.3 million, \$131.7 million, and \$167.9 million, respectively, including shares withheld for taxes of \$6.0 million, \$6.8 million and \$9.5 million, respectively. For 2016, these purchases were partially offset by \$5.2 million of excess tax benefits related to the exercise of stock options and vesting of restricted stock awards. In January 2019, our Board of Directors authorized us to repurchase up to an aggregate of \$50 million of our common stock.

Periodically, opportunities may arise to grow our business through the acquisition of complementary products, and technologies. Any material acquisition could result in a decrease to our working capital depending on the amount, timing, and nature of the consideration to be paid. We believe that our existing cash and investments will be sufficient to meet our working capital and capital expenditure needs at least for the next twelve months, although there can be no assurance that this will be the case. In 2019, we anticipate that our priorities for use of cash will be similar to prior years, with our first priority being continued investment in product development and profitably and in growing our business to extend our market leadership. We will continue to evaluate acquisition

opportunities that are complementary to our product footprint and technology direction. We will also continue to weigh our share repurchase options against cash for acquisitions and investing in the business. At this time, we do not anticipate any borrowing requirements in 2019 for general corporate purposes.

## New Accounting Pronouncements Adopted in Fiscal Year 2018

### Revenue Recognition

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2014-09, *Revenue Recognition – Revenue from Contracts with Customers (Topic 606)*, which, along with its subsequent amendments, replaced substantially all revenue recognition guidance. The new standard provides accounting guidance for all revenue arising from contracts with customers and affects all entities that enter into contracts to provide goods or services to their customers unless the contracts are in the scope of other standards.

On January 1, 2018, we adopted Topic 606 using the modified retrospective method applied to those contracts which were not completed as of January 1, 2018. Results of reporting periods beginning after January 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported under the previous revenue recognition standard (Topic 605). Historical hardware sales prior to the adoption of Accounting Standards Codification (ASC) 606 were recorded on a gross basis, as we were the principal in the transaction in accordance with ASC 605-45. Under the new standard, we are an agent in the transaction as we do not physically control the hardware which we sell; accordingly, we recognize our hardware revenue net of related cost which reduces both hardware revenue and cost of sales as compared to our accounting prior to 2018. Otherwise, the adoption of ASC 606 does not have a material impact on the measurement or recognition of revenue in any prior or current reporting periods.

However, based on expected renewals of maintenance and multi-year cloud subscriptions, we must defer a portion of our sales commission expense and amortize it over time as the corresponding services are transferred to the customer under the new standard. As a result, we recorded a net increase to opening retained earnings of \$2.0 million, net of tax, as of January 1, 2018 for commissions expense required to be deferred on contracts not completed as of that date.

Had we presented the results for 2018 under Topic 605, we would have presented hardware revenue gross which would have increased hardware revenue and cost of hardware each by \$35.9 million. We would have also expensed all sales commissions upon contract completion which would have increased sales and marketing expense by \$2.5 million in 2018.

### Stock Compensation

In June 2018, the FASB issued ASU 2018-07, *Compensation – Stock Compensation (Topic 718), Improvements to Nonemployee Share-Based Payment Accounting (ASU 2018-07)*. The new guidance expands the scope of ASC 718, *Compensation – Stock Compensation*, to include share-based payments granted to nonemployees in exchange for goods or services used or consumed in an entity's operations, and supersedes the guidance in ASC 505-50, *Equity-Based Payments to NonEmployees*. Once adopted, the fair value of awards granted to nonemployees will be determined as of the grant date and recognized, in expense, over the service period. Previous guidance required the fair value of awards granted to nonemployees to be remeasured at intervals in determining the expense to be recognized. ASU 2018-07 is effective for public business entities in annual periods beginning after December 15, 2018 (first quarter 2019 for us). We early adopted ASU 2018-07 in the third quarter of 2018, and the adoption did not impact our financial statements.

New Accounting Pronouncements Not Yet Adopted as of December 31, 2018

Leases

In February 2016, the FASB issued ASU 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 2018-11, 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 us in the first quarter of 2019 and we expect that most of our operating leases (primarily office space) will be recognized as operating lease liabilities and right of use assets on our balance sheet. The right of use assets and lease liabilities that we recognize on our balance sheet, as of the adoption date, will depend on our lease portfolio and discount rates on the date of adoption. We are continuing to evaluate the impact that the adoption of this standard will have on our financial statements but currently believe it is likely that we 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. We also believe that we will elect the optional transition method that allows for a cumulative-effect adjustment as of the adoption date coupled with the option to not restate prior periods. We do not expect the adoption of ASU 842 to materially impact our Consolidated Statements of Income or our Consolidated Statements of Cash Flows.

#### Off-Balance Sheet Arrangements and Aggregate Contractual Obligations

Our principal commitments as of December 31, 2018 consist of obligations under operating leases. We expect to fulfill all of the following commitments from our working capital. We have no off-balance sheet arrangements within the meaning of the rules of the Securities and Exchange Commission.

#### Lease Commitments

We lease our facilities and some of our equipment under noncancelable operating lease arrangements that expire at various dates through 2025. Rent expense for these leases aggregated \$7.1 million, \$7.1 million, and \$6.8 million during 2018, 2017 and 2016, respectively.

In the following table, we present a summary of our contractual commitments as of December 31, 2018 (in thousands):

	Total	2019	2020	2021	2022	2023	Thereafter
Operating Lease Obligations	\$37,936	\$6,196	\$5,616	\$5,359	\$5,129	\$5,185	\$ 10,451
Indemnities							

Our customer contracts generally contain infringement indemnity provisions. Under those provisions, we generally agree, subject to certain exceptions, to indemnify, defend, and hold harmless the customer in connection with third party claims against the customer alleging that the customer's use of our software products in compliance with their license infringe the third party's patent, copyright, or other intellectual property rights. Conditions to our obligations generally include that we are provided the right to control the defense of the claims and, in general, to control settlement negotiations. Those provisions generally provide also that, if the customer is prevented from using our software because of a third party infringement claim, our sole obligation (in addition to the indemnification, defense, and hold harmless obligation referred to above) is to, at our expense, (i) procure for the customer the right to continue to use the software, (ii) to replace or modify the product so that its use by the customer does not infringe, or, if either of the foregoing are not reasonably feasible, to terminate the customer contract and provide a refund of the unamortized portion of the customer's license fee (based on a five year amortization period). Our customer contracts sometimes also require us to indemnify, defend, and hold harmless the customer in connection with death, personal injury, or property damage claims made by third parties with respect to actions of our personnel or contractors. The

indemnity obligations contained in our customer contracts generally have no specified expiration date and no specified monetary limitation on liability. We have not previously incurred costs to settle claims or pay awards under these indemnification obligations. We account for these indemnity obligations in accordance with the FASB guidance on accounting for contingencies, and record a liability for these obligations when a loss is probable and reasonably estimable. We have not recorded any liabilities for these contracts as of December 31, 2018.

#### Warranties

In general, in our customer contracts, we warrant to our customers that our software products will perform in all material respects in accordance with our standard published specifications in effect at the time of delivery of the licensed products to the customer for six months after first use of the licensed products, but no more than 24 months after execution of the license agreement. Additionally, we warrant to our customers that our services will be performed consistent with generally accepted industry standards or specific service levels through completion of the agreed upon services. If necessary, we would provide for the estimated cost of product and

service warranties based on specific warranty claims and claims history. However, we have not incurred significant recurring expense under our product or service warranties. As a result, we believe the estimated fair value of these agreements is nominal. Accordingly, we have no liabilities recorded for these agreements as of December 31, 2018.

#### Application of Critical Accounting Policies and Estimates

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

Our Consolidated Financial Statements are prepared in accordance with U.S. GAAP. The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions in certain circumstances that affect amounts reported in the accompanying consolidated financial statements and related footnotes. We believe that the estimates, judgments, and assumptions upon which we rely are reasonable based on information available to us at the time that these estimates, judgments, and assumptions are made. To the extent there are material differences between those estimates, judgments, or assumptions and actual results, our financial statements will be affected. The accounting policies that reflect our more significant estimates, judgments, and assumptions are: Revenue Recognition and Accounting for Income Taxes.

#### Revenue Recognition

We recognize revenue when we transfer control of the promised products or services to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those products or services. We derive our revenue from software licenses, cloud subscriptions, customer support services and software enhancements (“maintenance”), implementation and training services, and sales of hardware. We exclude sales and usage-based taxes from revenue.

#### Nature of Products and Services

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.

Cloud subscriptions includes software as a service (“SaaS”) and arrangements which provide customers with the right to use our software within a cloud-based environment that we provide and manage where the customer does not have the right to take possession of the software without significant penalty. SaaS and hosting revenues are recognized ratably over the contract period. For contracts that include a perpetual license and hosting services, we generally consider the arrangement as an overall service, recognized over the initial hosting term. The software license fee typically due at the outset of the arrangement is not payable again if the customer renews the hosting services, so that the customer’s option to renew the hosting services is a material right, the revenue from which, if the option is exercised, we will recognize over the applicable renewal period.

Our perpetual software licenses are typically sold with maintenance under which we provide a comprehensive 24 hours per day, 365 days per year program that provides customers with software upgrades, when and if available, which include additional or improved functionality and technological advances incorporating emerging supply chain and industry initiatives. Revenue related to maintenance is generally paid in advance and recognized ratably over the term of the agreement, typically twelve months.

Our services revenue consists of fees generated from implementation, training and application managed services, including reimbursements of out-of-pocket expenses in connection with our implementation services. Implementation services include system planning, design, configuration, testing, and other software implementation support, and are

typically optional and distinct from our software. Following implementation, customers may purchase application managed services to support and maintain 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. In certain situations, we render professional services under agreements based upon a fixed fee for portions of or all of the engagement. Revenue related to fixed-fee-based services contracts is recognized over time based on the proportion performed.

As part of a complete solution, our customers periodically purchase hardware products developed and manufactured by third parties from us for use with the software licenses purchased from us. These products include computer hardware, radio frequency terminal networks, radio frequency identification (RFID) chip readers, bar code printers and scanners, and other peripherals. As we do not physically control the hardware which we sell, we are acting as an agent in the transaction and recognize our hardware revenue net of the related costs. We recognize hardware revenue when control is transferred to the customer upon shipment.

#### Significant Judgements

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Our contracts with customers typically contain promises to transfer multiple products and services to a customer. Judgement 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 the distinct performance obligations based on relative standalone selling price (“SSP”). We estimate SSP based on the prices charged to customers, or by using information such as market conditions and other observable inputs. However, the selling price of our software licenses is highly variable. Thus, we estimate SSP for software licenses using the residual approach, determined based on total transaction price less the SSP of other goods and services promised in the contract.

#### Contract Balances

Timing of invoicing to customers may differ from timing of revenue recognition. Payment terms for our software licenses vary. We have an established history of collecting under the terms of our software license contracts without providing refunds or concessions to our customers. Cloud subscriptions and maintenance are typically billed annually in advance. Services are typically billed monthly 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 from consideration any contracts with payment terms of one year or less as we rarely offer terms extending beyond one year.

Deferred revenue mainly represents amounts collected prior to having completed performance of maintenance, cloud subscriptions and professional services.

#### Accounting for Income Taxes

We provide for the effect of income taxes on our financial position and results of operations in accordance with the Income Taxes Topic of the ASC. Under this accounting pronouncement, 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, projected tax credits, and possible outcomes of current and future audits conducted by foreign and domestic tax authorities. We do not recognize a tax benefit unless we conclude that it is more likely than not that the benefit will be sustained on audit by the taxing authority based solely on the technical merits of the associated tax position. If the recognition threshold is met, we recognize a tax benefit measured at the largest amount of the tax benefit that, in our judgment, is greater than 50 percent likely to be realized. Changes in tax law 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 statement of financial position and our statements of income. Our assumptions, judgments, and estimates relative to the value of our net deferred tax asset take into account predictions of the amount and category of future taxable income. Actual operating results and the underlying amount and category of income in future years could render our current assumptions, judgments, and estimates of recoverable net deferred taxes inaccurate, thus materially impacting our financial position and results of operations.

#### **Item 7A. Quantitative and Qualitative Disclosures About Market Risk** Foreign Business

Our international business is subject to risks typical of an international business, including, but not limited to differing economic conditions, changes in political climate, differing tax structures, other regulations and restrictions, and foreign exchange rate volatility. Our international operations currently include business activity out of offices in the United Kingdom, the Netherlands, France, Germany, Australia, Chile, China, Japan, Singapore, Spain and India. When the U.S. dollar strengthens against a foreign currency, the value of our sales and expenses in that currency converted to U.S. dollars decreases. When the U.S. dollar weakens, the value of our sales and expenses in that currency converted to U.S. dollars increases. We recognized foreign exchange gains of \$1.3 million and \$0.6 million in 2018 and 2016, respectively, and recognized losses of \$1.8 million in 2017. Foreign exchange rate transaction gains and losses are classified in “Other income (loss), net” in our Consolidated Statements of Income. A fluctuation of 10% in the period end exchange rates at December 31, 2018 relative to the U.S. dollar would have resulted in a change of approximately \$1.2 million in the reported foreign currency gain. A fluctuation of 10% in the period end exchange rates at December 31, 2017 relative to the U.S. dollar would have resulted in a change of approximately \$0.4 million in the reported foreign currency loss.

## Interest Rates

We currently invest our cash and cash equivalents in a variety of financial instruments, including taxable floating rate obligations in money market funds and certificate of deposits with original maturities of less than three months when purchased. These investments are mainly denominated in U.S. dollars. Cash balances in foreign currencies overseas, except for India, are derived from business operations. Our operations in India are funded by the U.S. operations. At December 31, 2018, our cash and cash equivalents balances totaled \$100.6 million, of which all is highly liquid. Our cash equivalents balance at December 31, 2018 was \$20.7 million.

Investments in both fixed rate and floating rate interest-earning instruments carry interest rate risks. Fixed rate securities may have their fair market value adversely impacted due to a rise in interest rates, while floating rate securities may produce less income than expected if interest rates fall. Due in part to these factors, our future investment income may fall short of expectations due to changes in interest rates, or we may suffer losses in principal if forced to sell securities that have seen a decline in market value due to changes in interest rates. The weighted-average interest rate of return on cash equivalents and short-term investments was approximately 1% for the years ended December 31, 2018 and 2017. The fair value of cash equivalents and short-term investments held at December 31, 2018 and 2017 was \$22.1 million and \$35.1 million, respectively. Based on the average cash equivalents and short-term investments outstanding during 2018 and 2017, increases or decreases in the rates of return of 25 basis points would result in increases or decreases to interest income of approximately \$0.3 million for both years from the reported interest income.

**Item 8. Financial Statements and Supplementary Data**

Financial Statements

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MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management of Manhattan Associates, Inc. is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control over financial reporting is a process designed under the supervision of the Company's principal executive and principal financial officers to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Company's financial statements for external purposes in accordance with U.S. generally accepted accounting principles.

The Company's internal control over financial reporting includes policies and procedures that pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of 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 of management and the directors of the Company; and 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.

As of the end of the Company's 2018 fiscal year, management conducted an assessment of the Company's internal control over financial reporting based on the framework established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (COSO). Based on this assessment, management has determined that the Company's internal control over financial reporting as of December 31, 2018 was effective.

Ernst & Young LLP, the independent registered public accounting firm that audited the Company's financial statements for the year ended December 31, 2018, has audited the Company's internal control over financial reporting as of December 31, 2018 and has issued a report regarding the Company's internal control over financial reporting appearing on page 41, which expresses an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2018.

/s/ Eddie Capel  
Eddie Capel  
President and Chief Executive Officer

February 8, 2019

/s/ Dennis B. Story  
Dennis B. Story  
Executive Vice President, Chief Financial Officer, and Treasurer

February 8, 2019



REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM  
ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The Board of Directors and Shareholders

Manhattan Associates, Inc. and Subsidiaries

Opinion on Internal Control over Financial Reporting

We have audited Manhattan Associates, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). In our opinion, Manhattan Associates, Inc. and subsidiaries (the Company), maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

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 December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2018, and the related notes and financial statement schedule listed in the Index at Item 15(a) and our report dated February 8, 2019 expressed an unqualified opinion thereon.

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 Annual 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 included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide 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/ Ernst & Young LLP  
Atlanta, Georgia

February 8, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM  
ON THE CONSOLIDATED FINANCIAL STATEMENTS

The Board of Directors and Shareholders

Manhattan Associates, Inc. and Subsidiaries

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Manhattan Associates, Inc. and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, cash flows, and shareholders' equity for each of the three years in the period ended December 31, 2018, and the related notes and financial statement schedule listed in the Index at Item 15(a) (collectively referred to as the "financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, 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 December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 8, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2002

Atlanta, Georgia

February 8, 2019

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## MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES

## Consolidated Statements of Income

(in thousands, except per share amounts)

	Year Ended December 31,		
	2018	2017	2016
Revenue:			
Cloud subscriptions	\$23,104	\$9,596	\$5,783
Software license	45,368	72,313	79,213
Maintenance	147,033	142,998	133,848
Services	329,685	326,502	351,785
Hardware	13,967	43,190	33,928
Total revenue	559,157	594,599	604,557
Costs and expenses:			
Cost of software license	5,297	5,483	6,818
Cost of cloud subscriptions, maintenance and services	235,584	208,045	219,635
Cost of hardware	-	32,205	23,426
Research and development	71,896	57,704	54,736
Sales and marketing	51,262	47,482	48,223
General and administrative	52,618	46,054	48,322
Depreciation and amortization	8,613	9,060	9,090
Restructuring charge	-	2,921	-
Total costs and expenses	425,270	408,954	410,250
Operating income	133,887	185,645	194,307
Interest income	1,067	1,174	1,161
Other income (loss), net	1,277	(1,986 )	639
Income before income taxes	136,231	184,833	196,107
Income tax provision	31,541	68,352	71,873
Net income	\$104,690	\$116,481	\$124,234
Basic earnings per share	\$1.58	\$1.68	\$1.73
Diluted earnings per share	\$1.58	\$1.68	\$1.72
Weighted average number of shares:			
Basic	66,201	69,175	71,674
Diluted	66,434	69,424	72,060

The accompanying notes are an integral part of these Consolidated Statements of Income.

MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES

Consolidated Statements of Comprehensive Income

(in thousands)

	Year Ended December 31,		
	2018	2017	2016
Net income	\$104,690	\$116,481	\$124,234
Foreign currency translation adjustment	(5,022 )	4,055	(3,588 )
Comprehensive income	\$99,668	\$120,536	\$120,646

The accompanying notes are an integral part of these Consolidated Statements of Comprehensive Income.

## MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES

## Consolidated Balance Sheets

(in thousands, except share and per share data)

	December 31,	
	2018	2017
<b>ASSETS</b>		
Current Assets:		
Cash and cash equivalents	\$99,126	\$125,522
Short-term investments	1,440	-
Accounts receivable, net of allowance of \$2,589 and \$2,692 at December 31, 2018 and December 31, 2017, respectively	100,108	92,231
Income taxes receivable	767	-
Prepaid expenses	11,171	9,151
Other current assets	2,770	1,169
Total current assets	215,382	228,073
Property and equipment, net	14,318	15,493
Goodwill, net	62,240	62,248
Deferred income taxes	5,442	1,877
Other assets	9,768	7,304
Total assets	\$307,150	\$314,995
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$18,181	\$14,028
Accrued compensation and benefits	29,485	15,826
Accrued and other liabilities	12,161	12,105
Deferred revenue	81,894	75,068
Income taxes payable	3,543	7,228
Total current liabilities	145,264	124,255
Deferred rent, long-term	1,921	2,136
Deferred income taxes	53	69
Other non-current liabilities	12,765	13,579
Commitments and contingencies (Note 5)		
Shareholders' equity:		
Preferred stock, no par value; 20,000,000 shares authorized, no shares issued or		
outstanding at December 31, 2018 and December 31, 2017	-	-
Common stock, \$.01 par value; 200,000,000 shares authorized; 64,860,419 and	649	678
67,776,138 shares issued and outstanding at December 31, 2018 and		

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December 31, 2017, respectively	
Retained earnings	163,359 186,117
Accumulated other comprehensive loss	(16,861 ) (11,839 )
Total shareholders' equity	147,147 174,956
Total liabilities and shareholders' equity	\$307,150 \$314,995

The accompanying notes are an integral part of these Consolidated Balance Sheets.

## MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES

## Consolidated Statements of Cash Flows

(in thousands)

	Year Ended December 31,		
	2018	2017	2016
<b>Operating activities:</b>			
Net income	\$104,690	\$116,481	\$124,234
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	8,613	9,060	9,090
Equity-based compensation	19,864	16,229	15,934
Loss on disposal of equipment	59	152	30
Tax benefit of stock awards exercised/vested	-	-	5,209
Excess tax benefits from equity-based compensation	-	-	(5,214 )
Deferred income taxes	(4,265 )	1,574	1,797
Unrealized foreign currency loss (gain)	298	196	(393 )
Changes in operating assets and liabilities:			
Accounts receivable, net	(9,341 )	10,139	(4,358 )
Other assets	(4,357 )	661	299
Accounts payable, accrued and other liabilities	18,603	(5,354 )	(9,261 )
Income taxes	(4,390 )	1,876	6,129
Deferred revenue	7,575	13,052	(4,150 )
Net cash provided by operating activities	137,349	164,066	139,346
<b>Investing activities:</b>			
Purchases of property and equipment	(7,306 )	(6,199 )	(6,843 )
Purchases of short-term investments	(14,584 )	(12,873 )	-
Maturities of short-term investments	12,052	13,302	10,201
Net cash (used in) provided by investing activities	(9,838 )	(5,770 )	3,358
<b>Financing activities:</b>			
Purchase of common stock	(149,322)	(131,707)	(167,933)
Proceeds from issuance of common stock from options exercised	-	-	18
Excess tax benefits from equity-based compensation	-	-	5,214
Net cash used in financing activities	(149,322)	(131,707)	(162,701)
Foreign currency impact on cash	(4,585 )	3,318	(2,804 )
Net change in cash and cash equivalents	(26,396 )	29,907	(22,801 )
Cash and cash equivalents at beginning of period	125,522	95,615	118,416
Cash and cash equivalents at end of period	\$99,126	\$125,522	\$95,615
<b>Supplemental disclosures of cash flow information:</b>			
Cash paid for taxes	\$40,215	\$64,910	\$58,684

The accompanying notes are an integral part of these Consolidated Statements of Cash Flows.

## MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES

## Consolidated Statements of Shareholders' Equity

(in thousands, except share data)

	Common Stock		Additional Paid-In	Retained	Accumulated Other Comprehensive Income	Total Shareholders' Equity
	Shares	Amount	Capital	Earnings	(Loss)	Equity
Balance, December 31, 2015	72,766,383	728	-	207,070	(12,306)	195,492
Repurchase of common stock	(2,988,627)	(30)	(21,157)	(146,746)	-	(167,933)
Stock option exercises	3,610	-	18	-	-	18
Restricted stock units issuance	452,589	4	(4)	-	-	-
Equity-based compensation	-	-	15,934	-	-	15,934
Tax effects of equity-based compensation	-	-	5,209	-	-	5,209
Foreign currency translation adjustment	-	-	-	-	(3,588)	(3,588)
Net income	-	-	-	124,234	-	124,234
Balance, December 31, 2016	70,233,955	702	-	184,558	(15,894)	169,366
Repurchase of common stock	(2,829,850)	(28)	(18,050)	(113,629)	-	(131,707)
Restricted stock units issuance	372,033	4	(4)	-	-	-
Equity-based compensation	-	-	16,229	-	-	16,229
Adjustment due to adoption of ASC 2016-09, Compensation - Stock Compensation: Improvements to Employee Share-Based Payment Accounting	-	-	1,825	(1,293)	-	532
Foreign currency translation adjustment	-	-	-	-	4,055	4,055
Net income	-	-	-	116,481	-	116,481
Balance, December 31, 2017	67,776,138	678	-	186,117	(11,839)	174,956
Repurchase of common stock	(3,262,835)	(33)	(19,860)	(129,429)	-	(149,322)
Restricted stock units issuance	347,116	4	(4)	-	-	-
Equity-based compensation	-	-	19,864	-	-	19,864
Adjustment due to adoption of ASC 2014-09, Revenue from Contracts with Customers (Topic 606)	-	-	-	1,981	-	1,981
Foreign currency translation adjustment	-	-	-	-	(5,022)	(5,022)
Net income	-	-	-	104,690	-	104,690
Balance, December 31, 2018	64,860,419	649	-	163,359	(16,861)	147,147

The accompanying notes are an integral part of these Consolidated Statements of Shareholders' Equity.



## MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES

### NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 2018, 2017 and 2016

#### 1. Organization, Consolidation and Summary of Significant Accounting Policies

##### Organization and Business

Manhattan Associates, Inc. (“Manhattan”, the “Company”, “we”, “our”, or “us”) is a developer and provider of supply chain commerce solutions that help organizations optimize the effectiveness, efficiency, and strategic advantages of their supply chains. Our solutions consist of software, services, and hardware, which coordinate people, workflows, assets, events, and tasks holistically across the functions linked in a supply chain from planning through execution. These solutions also help coordinate the actions, data exchange, and communication of participants in supply chain ecosystems, such as manufacturers, suppliers, distributors, trading partners, transportation providers, channels (such as catalogers, store retailers, and Web outlets), and consumers.

Our operations are in North and South America (the Americas), Europe (EMEA), and the Asia/Pacific (APAC) region. The Americas operation are conducted through the Parent Company, Manhattan Associates, Inc., and its wholly-owned subsidiary, Manhattan Associates Chile Spa. The European operations are conducted through our wholly-owned subsidiaries, Manhattan Associates Limited, Manhattan Associates Europe B.V., Manhattan France SARL, and Manhattan Associates GmbH, in the United Kingdom, the Netherlands, France, and Germany, respectively. Our Asia/Pacific operations are conducted through our wholly-owned subsidiaries, Manhattan Associates Pty Ltd., Manhattan Associates KK, Manhattan Associates Software (Shanghai), Co. Ltd., Manhattan Associates Software Pte Ltd., and Manhattan Associates (India) Development Centre Private Limited in Australia, Japan, China, Singapore, and India, respectively. We occasionally sell our products and services in other countries, such as countries in Latin America, Eastern Europe, Middle East, and Asia, through our direct sales channel as well as various reseller channels.

##### Risks Associated with Single Business Line, Technological Advances, and Foreign Operations

We currently derive a substantial portion of our revenues from sales of our software and related services and hardware. The markets for supply chain commerce solutions are highly competitive, subject to rapid technological change, changing customer needs, frequent new product introductions, and evolving industry standards that may render existing products and services obsolete. As a result, our position in these markets could be eroded rapidly by unforeseen changes in customer requirements for application features, functions, and technologies. Our growth and future operating results will depend, in part, upon our ability to enhance existing applications and develop and introduce new applications that meet changing customer requirements that respond to competitive products and that achieve market acceptance. Any factor adversely affecting the markets for supply chain commerce solutions could have an adverse effect on our business, financial condition, results of operations and operating cash flows.

Our international business is subject to risks typical of an international business, including, but not limited to, differing economic conditions, changes in political climate, differing tax structures, other regulations and restrictions, and foreign exchange rate volatility. We recognized foreign exchange gains of \$1.3 million and \$0.6 million in 2018

and 2016, respectively, and a foreign exchange loss of \$1.8 million in 2017. Foreign exchange rate transaction gains and losses are classified in “Other income (loss), net” on the Consolidated Statements of Income.

In addition, we have a large development center in Bangalore, India, that does not have a natural in-market revenue hedge to mitigate currency risk to our operating expenses in India. Fluctuations in the value of other currencies, particularly the Indian Rupee, could significantly affect our revenues, expenses, operating profit and net income.

#### Principles of Consolidation and Foreign Currency Translation

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

The financial statements of foreign subsidiaries have been translated into United States dollars in accordance with the foreign currency matters topic in the FASB’s Accounting Standards Codification (the “Codification”). Revenues and expenses from international operations were denominated in the respective local currencies and translated using the average monthly exchange rates for the year. All balance sheet accounts have been translated using the exchange rates in effect at the balance sheet date and the effect of changes in exchange rates from year to year are disclosed as a separate component of shareholders’ equity and comprehensive income.

## New Accounting Pronouncements Adopted in Fiscal Year 2018

### Revenue Recognition

In May 2014, the FASB issued Accounting Standards Update (ASU) 2014-09, *Revenue Recognition – Revenue from Contracts with Customers (Topic 606)*, which, along with its subsequent amendments, replaced substantially all revenue recognition guidance. The new standard provides accounting guidance for all revenue arising from contracts with customers and affects all entities that enter into contracts to provide goods or services to their customers unless the contracts are in the scope of other standards.

On January 1, 2018, we adopted Topic 606 using the modified retrospective method applied to those contracts which were not completed as of January 1, 2018. Results of reporting periods beginning after January 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported under the previous revenue recognition standard (Topic 605). Historical hardware sales prior to the adoption of Accounting Standards Codification (ASC) 606 were recorded on a gross basis, as we were the principal in the transaction in accordance with ASC 605-45. Under the new standard, we are an agent in the transaction as we do not physically control the hardware which we sell; accordingly, we recognize our hardware revenue net of related cost which reduces both hardware revenue and cost of sales as compared to our accounting prior to 2018. Otherwise, the adoption of ASC 606 does not have a material impact on the measurement or recognition of revenue in any prior or current reporting periods.

However, based on expected renewals of maintenance and multi-year cloud subscriptions, we must defer a portion of our sales commission expense and amortize it over time as the corresponding services are transferred to the customer under the new standard. As a result, we recorded a net increase to opening retained earnings of \$2.0 million, net of tax, as of January 1, 2018 for commissions expense required to be deferred on contracts not completed as of that date.

Had we presented the results for 2018 under Topic 605, we would have presented hardware revenue gross which would have increased hardware revenue and cost of hardware each by \$35.9 million. We would have also expensed all sales commissions upon contract completion which would have increased sales and marketing expense by \$2.5 million in 2018.

### Stock Compensation

In June 2018, the FASB issued ASU 2018-07, *Compensation – Stock Compensation (Topic 718), Improvements to Nonemployee Share-Based Payment Accounting (ASU 2018-07)*. The new guidance expands the scope of ASC 718, *Compensation – Stock Compensation*, to include share-based payments granted to nonemployees in exchange for goods or services used or consumed in an entity's operations, and supersedes the guidance in ASC 505-50, *Equity-Based Payments to NonEmployees*. Once adopted, the fair value of awards granted to nonemployees will be determined as of the grant date and recognized, in expense, over the service period. Previous guidance required the fair value of awards granted to nonemployees to be remeasured at intervals in determining the expense to be recognized. ASU 2018-07 is effective for public business entities in annual periods beginning after December 15, 2018 (first quarter 2019 for us). We early adopted ASU 2018-07 in the third quarter of 2018, and the adoption did not impact our financial statements.

## New Accounting Pronouncements Not Yet Adopted as of December 31, 2018

### Leases

In February 2016, the FASB issued ASU 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 2018-11, 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 us in the first quarter of 2019 and we expect that most of our operating leases (primarily office space) will be recognized as operating lease liabilities and right of use assets on our balance sheet. The right of use assets and lease liabilities that we recognize on our balance sheet, as of the adoption date, will depend on our lease portfolio and discount rates on the date of adoption. We are continuing to evaluate the impact that the adoption of this standard will have on our financial statements but currently believe it is likely that we 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. We also believe that we will elect the optional transition method that allows for a cumulative-effect adjustment as of the adoption date coupled with the option to not restate prior periods. We do not expect the adoption of ASC 842 to materially impact our Consolidated Statements of Income or our Consolidated Statements of Cash Flows.

## Summary of Significant Accounting Policies

### Cash and Cash Equivalents

We consider all highly liquid investments purchased with original maturities of three months or less to be cash or cash equivalents.

### Concentrations of Credit Risk

Financial instruments that potentially subject us to significant concentrations of credit risk consist principally of cash and cash equivalents and accounts receivable. We maintain cash and cash equivalents with various financial institutions. Amounts held are above the federally insured limit.

Our sales are primarily to companies located in the United States, Europe and Asia. We perform periodic credit evaluations of our customers' financial condition and do not require collateral. Accounts receivable are due principally from large U.S., European and Asia Pacific companies under stated contract terms. Accounts receivable, net as of December 31, 2018 for the Americas, EMEA, and APAC companies were \$80.5 million, \$15.2 million, and \$4.4 million, respectively. Accounts receivable, net as of December 31, 2017 for the Americas, EMEA, and APAC companies were \$71.8 million, \$16.1 million, and \$4.3 million, respectively. Our top five customers in aggregate accounted for 13%, 9%, and 12% of total revenue recognized for the year ended December 31, 2018 ("2018"), the year ended December 31, 2017 ("2017") and the year ended December 31, 2016 ("2016"), respectively. No single customer accounted for more than 10% of revenue in 2018, 2017 and 2016 or more than 10% of accounts receivable as of December 31, 2018 and 2017.

### Fair Value Measurement

We measure our 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. Market price observability is affected by a number of factors, including the type of asset or liability and their 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.

Investments with maturities of 90 days or less from the date of purchase are classified as cash equivalents; investments with maturities of greater than 90 days from the date of purchase but less than one year are generally classified as short-term investments; and investments with maturities of one year or greater from the date of purchase are generally classified as long-term investments. Unrealized holding gains and losses are reflected as a net amount in a separate component of shareholders' equity until realized. For the purposes of computing realized gains and losses, cost is determined on a specific identification basis.

At December 31, 2018, our cash, cash equivalents, and short-term investments were \$78.5 million, \$20.7 million, and \$1.4 million, respectively. We currently have no long-term investments. Cash equivalents consist of highly liquid money market funds of \$9.7 million and certificates of deposit of \$11.0 million. Short-term investments consist of certificates of deposit. For money market funds,

we use quoted prices from active markets that are classified at Level 1, the highest level of observable input in the disclosure hierarchy framework. We have no investments classified at Level 2 or Level 3 at December 31, 2018.

The carrying values of cash and cash equivalents, short-term investments, accounts receivable, and accounts payable included in the accompanying Consolidated Balance Sheets approximate their fair values principally due to the short-term maturities of these instruments.

#### Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the reporting period. Significant estimates include the allowance for doubtful accounts, which is based upon an evaluation of historical amounts written-off, the customers' ability to pay, and general economic conditions; self-insurance accruals; impairment testing of goodwill; and our effective income tax rate (including the impact of unrecognized tax benefits) and deferred tax assets, which are based upon our expectations of future taxable income, allowable deductions, and projected tax credits. Actual results will differ from these estimates.

#### Revenue Recognition

We recognize revenue when we transfer control of the promised products or services to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those products or services. We derive our revenue from software licenses, cloud subscriptions, customer support services and software enhancements ("maintenance"), implementation and training services, and sales of hardware. We exclude sales and usage-based taxes from revenue.

#### Nature of Products and Services

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.

Cloud subscriptions includes software as a service ("SaaS") and arrangements which provide customers with the right to use our software within a cloud-based environment that we provide and manage where the customer does not have the right to take possession of the software without significant penalty. SaaS and hosting revenues are recognized ratably over the contract period. For contracts that include a perpetual license and hosting services, we generally consider the arrangement as an overall service, recognized over the initial hosting term. The software license fee typically due at the outset of the arrangement is not payable again if the customer renews the hosting services, so that the customer's option to renew the hosting services is a material right, the revenue from which, if the option is exercised, we will recognize over the applicable renewal period.

Our perpetual software licenses are typically sold with maintenance under which we provide a comprehensive 24 hours per day, 365 days per year program that provides customers with software upgrades, when and if available, which include additional or improved functionality and technological advances incorporating emerging supply chain and industry initiatives. Revenue related to maintenance is generally paid in advance and recognized ratably over the term of the agreement, typically twelve months.

Our services revenue consists of fees generated from implementation, training and application managed services, including reimbursements of out-pocket expenses in connection with our implementation services. Implementation services include system planning, design, configuration, testing, and other software implementation support, and are typically optional and distinct from our software. Following implementation, customers may purchase application managed services to support and maintain 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. In certain situations, we render professional services under agreements based upon a fixed fee for portions of or all of the engagement. Revenue related to fixed-fee-based services contracts is recognized over time based on the proportion performed. The total amount of expense reimbursement included in services revenue was \$16.8 million, \$17.9 million and \$18.3 million for 2018, 2017 and 2016, respectively.

As part of a complete solution, our customers periodically purchase hardware products developed and manufactured by third parties from us for use with the software licenses purchased from us. These products include computer hardware, radio frequency terminal networks, radio frequency identification (RFID) chip readers, bar code printers and scanners, and other peripherals. As we do not physically control the hardware that we sell, we are acting as an agent in the transaction and recognize our hardware revenue net of related cost. We recognize hardware revenue when control is transferred to the customer upon shipment.

### Significant Judgements

Our contracts with customers typically contain promises to transfer multiple products and services to a customer. Judgement 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 the distinct performance obligations based on relative standalone selling price (“SSP”). We estimate SSP based on the prices charged to customers, or by using information such as market conditions and other observable inputs. However, the selling price of our software licenses is highly variable. Thus, we estimate SSP for software licenses using the residual approach, determined based on total transaction price less the SSP of other goods and services promised in the contract.

### Contract Balances

Timing of invoicing to customers may differ from timing of revenue recognition. Payment terms for our software licenses vary. We have an established history of collecting under the terms of our software license contracts without providing refunds or concessions to our customers. Cloud subscriptions and maintenance are typically billed annually in advance. Services are typically billed monthly 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 from consideration any contracts with payment terms of one year or less as we rarely offer terms extending beyond one year.

Deferred revenue mainly represents amounts collected prior to having completed performance of maintenance, cloud subscriptions and professional services. \$72.8 million of revenue that was included in the deferred revenue balance as of December 31, 2017 was recognized in 2018.

No revenue was recognized in 2018 from performance obligations that were satisfied in prior periods.

### Remaining Performance Obligations

As of December 31, 2018, approximately \$77.0 million of revenue is expected to be recognized from remaining performance obligations for cloud subscriptions, maintenance contracts, and application managed services with a non-cancelable term greater than 1 year (including deferred revenue as well as amounts that will be invoiced and recognized as revenue in future periods). We expect to recognize revenue on approximately 60% of these remaining performance obligations over the next 24 months with the balance recognized thereafter. We have elected not to provide disclosures regarding remaining performance obligations for contracts with a term of 1 year or less.

### Returns and Allowances

We have not experienced significant returns or warranty claims to date and, as a result, have not recorded a provision for the cost of returns and product warranty claims.

We record an allowance for doubtful accounts based on historical experience of write-offs and a detailed assessment of accounts receivable. Additions to the allowance for doubtful accounts generally represent a sales allowance on services revenue, which are recorded to operations as a reduction to services revenue. Total amount charged to operations in 2018, 2017 and 2016 was \$3.9 million, \$1.6 million and \$4.9 million, respectively. In estimating the allowance for doubtful accounts, we consider the age of the accounts receivable, our historical write-offs, and the creditworthiness of the customer, among other factors. Should any of these factors change, the estimates made by us

will also change accordingly, which could affect the level of our future allowances. Uncollectible accounts are written off when it is determined that the specific balance is not collectible.

Deferred Commissions

We consider sales commissions to be incremental costs of obtaining a contract with a customer. We defer and recognize an asset for sales commissions related to performance obligations with an expected period of benefit of more than one year. We apply the practical expedient to expense sales commissions when the amortization period would have been one year or less. Deferred commissions were \$3.5 million as of December 31, 2018, of which \$2.4 million is included in other assets and \$1.1 million is included in prepaid expenses. Sales commission expense is included in Sales and Marketing expense in the accompanying consolidated statement of operations. Amortization of sales commissions in 2018 was \$1.0 million. No impairment losses were recognized during 2018.

## Property and Equipment

Property and equipment is recorded at cost and consists of furniture, computers, other office equipment, and leasehold improvements. We depreciate the cost of furniture, computers, and other office equipment on a straight-line basis over their estimated useful lives (five years for office equipment, seven years for furniture and fixtures). Leasehold improvements are depreciated over the lesser of their useful lives or the term of the lease. Depreciation expense for property and equipment for 2018, 2017 and 2016 was approximately \$7.5 million, \$7.7 million, and \$7.5 million, respectively. Amortization of intangibles was \$1.2 million, \$1.3 million and \$1.6 million in 2018, 2017 and 2016, respectively. Depreciation expense as well as amortization expense are included in “Depreciation and amortization” in the Consolidated Statements of Income.

Property and equipment consist of the following (in thousands):

	December 31,	
	2018	2017
Office equipment	\$39,633	\$39,644
Furniture and fixtures	4,610	4,662
Leasehold improvement	19,430	18,494
Property and equipment, gross	63,673	62,800
Less accumulated depreciation	(49,355)	(47,307)
Property and equipment, net	\$14,318	\$15,493
Software Development Costs		

Research and development expenses are charged to expense as incurred. For 2018, 2017 and 2016, we did not capitalize any internal research and development costs because the costs incurred between the attainment of technological feasibility for the related software product through the date that the product was available for general release to customers were insignificant.

We determine the amount of development costs capitalizable in accordance with the FASB Codification provisions relating to costs of computer software to be sold, leased, or marketed. Under this guidance, computer software development costs are charged to R&D expense until technological feasibility is established, after which remaining software production costs are capitalized. We have defined technological feasibility as the point in time at which we have a detailed program design or a working model of the related product, depending on the type of development efforts, and high-risk development issues have been resolved through end-to-end system testing.

## Impairment of Long-Lived Assets

We review the values assigned to long-lived assets, including property and certain intangible assets, to determine whether events and circumstances have occurred which indicate that the remaining estimated useful lives may warrant revision or that the remaining balances may not be recoverable. In such reviews, undiscounted cash flows associated with these assets are compared with their carrying value to determine if a write-down to fair value is required. During 2018, 2017 and 2016, we recognize no impairment charges associated with our long-lived or intangible assets.

The evaluation of asset impairment requires management to make assumptions about future cash flows over the life of the asset being evaluated. These assumptions require significant judgment, and actual results may differ from assumed and estimated amounts.

Goodwill and Impairment of Goodwill

Goodwill

Goodwill represents the excess of purchase price over fair value of net identified tangible and intangible assets and liabilities acquired. We do not amortize goodwill. Instead, we test goodwill for impairment on at least an annual basis. Goodwill was \$62.2 million at the end of each of the years ended December 31, 2018 and 2017.

Impairment of Goodwill

We evaluate the carrying value of goodwill annually as of December 31 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 the business climate, (2) unanticipated competition, or (3) an adverse action or assessment by a regulator.

We applied the simplified goodwill impairment test for 2018, which permits companies to perform a qualitative assessment based on economic, industry and company-specific factors as the initial step in the annual goodwill impairment test for all or selected 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 not more likely than not that the unit's fair value is less than its carrying amount. To the extent we conclude that 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. We did not identify any macroeconomic or industry conditions as of December 31, 2018, that would indicate that 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 that it is more likely than not that the fair value of any reporting units have fallen below their carrying value, we would record an impairment charge based on that difference. We performed our periodic review of goodwill for impairment as of December 31, 2018 and 2017, and did not identify any impairment as a result of the review.

#### Guarantees and Indemnities

We account for guarantees in accordance with the guarantee accounting topic in the FASB Codification. Our customer contracts generally contain infringement indemnity provisions. Under those provisions, we generally agree, subject to certain exceptions, to indemnify, defend, and hold harmless the customer in connection with third party claims against the customer alleging that the customer's use of our software products in compliance with their license infringe the third party's patent, copyright, or other intellectual property rights. Conditions to our obligations generally include that we are provided the right to control the defense of the claims and, in general, to control settlement negotiations. Those provisions generally provide also that, if the customer is prevented from using our software because of a third party infringement claim, our sole obligation (in addition to the indemnification, defense, and hold harmless obligation referred to above) is to, at our expense, (i) procure for the customer the right to continue to use the software, (ii) to replace or modify the product so that its use by the customer does not infringe, or, if either of the foregoing are not reasonably feasible, to terminate the customer contract and provide a refund of the unamortized portion of the customer's license fee (based on a five year amortization period). Our customer contracts sometimes also require us to indemnify, defend, and hold harmless the customer in connection with death, personal injury, or property damage claims made by third parties with respect to actions of our personnel or contractors. The indemnity obligations contained in our customer contracts generally have no specified expiration date and no specified monetary limitation on liability. We have not previously incurred costs to settle claims or pay awards under these indemnification obligations. We account for these indemnity obligations in accordance with FASB guidance on accounting for contingencies, and record a liability for these obligations when a loss is probable and reasonably estimable. We have not recorded any liabilities for these contracts as of December 31, 2018, or 2017.

In general, in our customer contracts, we warrant to our customers that our 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 for six months after first use of the licensed products, but no more than 24 months after execution of the license agreement. Additionally, we warrant to our 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, we will provide for the estimated cost of product and service warranties based on specific warranty claims and claims history. However, we have not incurred significant recurring expenses under product or service warranties. As a result, we believe the estimated fair value of these agreements is nominal. Accordingly, we have no liabilities recorded for these agreements as of December 31, 2018 and 2017.

#### Segment Information

We have three reportable segments as defined by the FASB Codification topic for segment reporting: Americas, EMEA, and APAC. See Note 7 for a discussion of our reportable segments.

#### Basic and Diluted Net Income Per Share

Basic net income per share is computed using net income divided by the weighted average number of shares of common stock outstanding (“Weighted Shares”) for the period presented.

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Diluted net income per share is computed using net income divided by Weighted Shares and the treasury stock method effect of common equivalent shares (“CESs”) outstanding for each period presented. In the following table, we present a reconciliation of earnings per share and the shares used in the computation of earnings per share for 2018, 2017 and 2016 (in thousands, except per share data):

	Year Ended December 31,		
	2018	2017	2016
	(in thousands, except per share data)		
Net income	\$ 104,690	\$ 116,481	\$ 124,234
Earnings per share:			
Basic	\$ 1.58	\$ 1.68	\$ 1.73
Effect of CESs	-	-	(0.01 )
Diluted	\$ 1.58	\$ 1.68	\$ 1.72
Weighted average number of shares:			
Basic	66,201	69,175	71,674
Effect of CESs	233	249	386
Diluted	66,434	69,424	72,060

The number of anti-dilutive CESs in 2018, 2017 and 2016 was immaterial. See Note 2 for further information on those securities.

#### Accumulated Other Comprehensive Income

Comprehensive income includes net income and foreign currency translation adjustments that are excluded from net income and reflected in shareholders’ equity. The entire accumulated other comprehensive income balance as of December 31, 2018 and 2017 represents foreign currency translation adjustments.

#### Accounting for Income Taxes

We provide for the effect of income taxes on our financial position and results of operations in accordance with the Income Taxes Topic of the Codification. Under this accounting pronouncement, 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, projected tax credits, and possible outcomes of current and future audits conducted by foreign and domestic tax authorities. We do not recognize a tax benefit unless we conclude that it is more likely than not that the benefit will be sustained on audit by the taxing authority based solely on the technical merits of the associated tax position. If the recognition threshold is met, we recognize a tax benefit measured at the largest amount of the tax benefit that, in our judgment, is greater than 50 percent likely to be realized. Changes in tax law 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 net deferred tax asset take into account predictions

of the amount and category of future taxable income. Actual operating results and the underlying amount and category of income in future years could render our current assumptions, judgments, and estimates of recoverable net deferred taxes inaccurate, thus materially impacting our financial position and results of operations.

#### Equity-Based Compensation

We account for equity-based compensation in accordance with ASC 718, *Compensation – Stock Compensation*. See Note 2 for further information.

#### Advertising costs

We expense advertising costs as incurred. Advertising expense was \$2.9 million in 2018 and immaterial for 2017 and 2016.

## 2. Equity-Based Compensation

### Equity Based Compensation Plans

In May 2007, the Manhattan Associates, Inc. 2007 Stock Incentive Plan (the “2007 Plan”) was approved by our shareholders and subsequently amended in May 2009 and May 2011. The amended 2007 Plan provides for the grant of stock options, restricted stock, restricted stock units, and stock appreciation rights. Vesting conditions can be service-based or performance-based, or a combination of both.

As amended, a maximum of 30,000,000 shares are available for grant under the amended 2007 Plan. Each stock option or stock appreciation right granted is counted against the maximum share limitation as one share, and each share of restricted stock or restricted stock unit granted (including those that are service based or performance based) counts against the maximum share limitation as two shares. Options and stock appreciation rights cannot have a term exceeding seven years. As of December 31, 2018, there were 9,844,416 shares available for issuance under the amended 2007 Plan. The amended 2007 Plan is administered by the Compensation Committee of the Board of Directors. The committee has the authority to interpret the provisions thereof.

The restricted stock awards contain vesting provisions that are 50% service based and 50% performance based for employee awards and 100% service based for non-employee members of the Board of Directors (“Outside Directors”). The employee awards have a four year vesting period, with the performance portion tied to annual revenue and earnings per share targets. The awards to Outside Directors have a one year vesting period. We recognize compensation cost for service-based restricted awards with graded vesting on a straight-line basis over the entire 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. For our performance-based restricted stock awards with graded vesting, we recognize compensation cost on an accelerated basis applying straight-line expensing for each separately vesting portion of each award.

In January 2012, in order to simplify equity grant administration, we changed the practice of granting restricted stock in favor of granting restricted stock *units*, or RSUs, which convert to our common stock upon vesting. There is no material difference between the grant of restricted stock and the grant of RSUs to either us or the recipients receiving the grants; however, in contrast to the granting of restricted stock, no stock will actually be issued under the granting of RSUs until the units vest. Currently, we do not grant stock options.

### Restricted Stock Awards

We present below a summary of changes during 2018 in our unvested units of restricted stock:

	Number of Units Grant Date Fair Value	
Outstanding at January 1, 2018	1,036,635	\$48.83
Granted	528,677	51.72
Vested	(379,971)	44.38
Forfeited	(188,168)	47.97
Outstanding at December 31, 2018	997,173	\$52.22

We recorded equity-based compensation expense related to restricted stock and RSUs (collectively “restricted stock awards”) of \$19.9 million, \$16.2 million and \$15.9 million, in 2018, 2017 and 2016, respectively. The total fair value of restricted stock awards that vested in 2018, 2017 and 2016, based on the market value at the vesting dates was \$18.1 million, \$18.8 million, and \$26.0 million, respectively. The weighted average grant-date fair value of RSUs

granted in 2018, 2017 and 2016 was \$51.72, \$49.01, and \$55.35, respectively. As of December 31, 2018, unrecognized compensation cost related to unvested RSUs totaled \$30.2 million and is expected to be recognized over a weighted average period of approximately 2.3 years. In January 2017, we elected to recognize forfeitures of equity-based payments as they occur.

Included in RSU grants for 2018 were 232,591 units that have performance-based vesting criteria. The performance criteria are tied to our financial performance. As of December 31, 2018, the associated equity-based compensation expense has been recognized for the portion of the award attributable to the 2018 performance criteria.

## 3. Income Taxes

We are subject to future federal, state, and foreign income taxes and have recorded net deferred tax assets on the Consolidated Balance Sheets at December 31, 2018 and 2017. Deferred tax assets and liabilities are determined based on the difference between the financial accounting and tax bases of assets and liabilities. We present below significant components of our deferred tax assets and liabilities as of December 31, 2018 and 2017 (in thousands):

	December 31,	
	2018	2017
Deferred tax assets:		
Accounts receivable	\$599	\$618
Accrued liabilities	5,075	2,571
Equity-based compensation	4,643	3,732
Capitalized costs	911	595
Accrued sales taxes	202	257
Deferred rent	96	336
State tax credits	5,495	5,870
Foreign subsidiary net operating losses	175	278
Valuation allowance	(3,846 )	(4,084 )
Other	778	297
	14,128	10,470
Deferred tax liabilities:		
Intangible assets	7,502	7,480
Depreciation	1,237	1,182
	8,739	8,662
Net deferred tax assets	\$5,389	\$1,808

We present below income from domestic and foreign operations before income tax expense for 2018, 2017 and 2016 (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Domestic	\$126,542	\$177,314	\$186,234
Foreign	9,689	7,519	9,873
Total	\$136,231	\$184,833	\$196,107

We present below the components of our income tax provision for 2018, 2017 and 2016 (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Current:			
Federal	\$22,606	\$53,998	\$56,053
State	6,182	6,595	8,204

Foreign	7,018	6,185	5,819
	35,806	66,778	70,076
Deferred:			
Federal	(3,127 )	1,590	2,086
State	(674 )	35	(268 )
Foreign	(464 )	(51 )	(21 )
	(4,265 )	1,574	1,797
Total	\$31,541	\$68,352	\$71,873

We did not have income tax benefits related to the exercise of stock options for the years ended December 31, 2018 or 2017 as the remaining outstanding stock options were exercised in 2016. The income tax benefits related to the exercise of stock options was approximately \$0.1 million for 2016.

As a result of losses in foreign locations, we have net operating loss carry-forwards (“NOLs”) of approximately \$0.7 million available to offset future income. Substantially all of the NOLs expire between 2019 and 2025. We have established a valuation allowance for substantially all of these NOLs because the ability to utilize them is not more likely than not to occur.

We have tax credit carry-forwards of approximately \$7.0 million available to offset future state tax. These tax credit carry-forwards expire between 2019 and 2028. These credits represent a deferred tax asset of \$5.5 million after consideration of the federal benefit of state tax deductions. A valuation allowance of \$2.8 million has been established for these credits because the ability to use them is not more likely than not to occur.

At December 31, 2018, we had approximately \$52.7 million of undistributed earnings and profits. The undistributed earnings and profits are considered previously taxed income and would not be subject to U.S. income taxes upon repatriation of those earnings, in the form of dividends. The undistributed earnings and profits are considered to be permanently reinvested, accordingly no provision for local withholdings taxes have been provided, however, upon repatriation of those earnings, in the form of dividends, we could be subject to additional local withholding taxes.

We present below a summary of the items that cause recorded income taxes to differ from taxes computed using the statutory federal income tax rate for 2018, 2017 and 2016:

	Year Ended		
	December 31,		
	2018	2017	2016
Statutory federal income tax rate	21.0%	35.0%	35.0%
Effect of:			
State income tax, net of federal benefit	3.4	2.3	2.7
State credit carryforwards	0.3	(0.1)	(0.2)
U.S. federal R&D tax credit	(1.7)	(0.8)	(0.7)
Tax Reform	(0.1)	1.5	-
Excess benefit of equity compensation	(0.6)	(1.0)	-
Foreign-derived intangible income (FDII) deduction	(1.6)	-	-
Foreign operations	1.2	(0.1)	(0.2)
Tax contingencies	0.5	-	0.6
Other permanent differences	1.0	0.3	(0.5)
Change in valuation allowance	(0.2)	(0.1)	(0.1)
Income taxes	23.2%	37.0%	36.6%

On December 22, 2017, the United States enacted tax reform legislation commonly known as the Tax Cuts and Jobs Act (“the Act”), resulting in significant modifications to existing law. We followed the guidance in SEC Staff Accounting Bulletin 118 (“SAB 118”), which provides additional clarification regarding the application of ASC Topic 740 in situations where we do not have the necessary information available, prepared, or analyzed in reasonable detail to complete the accounting for certain income tax effects of the Act for the reporting period in which the Act was enacted. SAB 118 provides for a measurement period beginning in the reporting period that includes the Act’s enactment date and ending when we have obtained, prepared, and analyzed the information needed in order to complete the accounting requirements but in no circumstances should the measurement period extend beyond one year from the enactment date.

In December 2017, we recorded a provisional estimate of \$3.3 million for the one-time deemed repatriation transition tax on unrepatriated foreign earnings. The provisional amount was based on information available at that time, including estimated tax earnings and profits from foreign investments. In the fourth quarter of 2018, we finalized our transition tax calculation and recorded additional tax expense of \$0.3 million. In December 2017, we also recorded a provisional write-down to deferred tax assets of \$0.7 million related to changes in Section 162(m), Internal Revenue Code of 1986, regarding deductions for excessive employee compensation. In 2018, we finalized our calculation under Section 162(m) and recorded a tax benefit of \$0.5 million. We also recorded a one-time tax benefit in December 2017 of \$1.2 million from the remeasurement of deferred tax assets and liabilities from 35% to 21%. As of December 31, 2018, we have completed the accounting for all of the impacts of the Act.

The Act provides for the global intangible low-taxed income (“GILTI”) provision which requires us, in our U.S. income tax return, to include foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary’s tangible assets. The FASB Staff provided additional guidance to address the accounting for the effects of the provisions related to the taxation of GILTI, noting that companies should make an accounting policy election to recognize deferred taxes for temporary basis differences expected to

reverse as GILTI in future years or to include the tax expense in the year it is incurred. We have elected to include the tax expense in the year that we incur it.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows for 2018, 2017 and 2016 (in thousands):

	December 31,		
	2018	2017	2016
Unrecognized tax benefits at January 1,	\$(7,419)	\$ (6,938)	\$ (5,789)
Gross amount of increases in unrecognized tax benefits as a result of tax positions taken during a prior period	(873 )	(789 )	(756 )
Gross amount of decreases in unrecognized tax benefits as a result of tax positions taken during a prior period	233	145	270
Gross amount of increases in unrecognized tax benefits as a result of tax positions taken during the current period	(78 )	-	(791 )
Reductions to unrecognized tax benefits relating to settlements with taxing authorities	349	-	-
Reductions to unrecognized tax benefits as a result of a lapse of the applicable statute of limitations	675	163	128
Unrecognized tax benefits at December 31,	\$(7,113)	\$ (7,419)	\$ (6,938)

Our unrecognized tax benefits totaled \$7.1 million and \$7.4 million as of December 31, 2018 and 2017, respectively. Included in these amounts are unrecognized tax benefits totaling \$5.4 million and \$5.6 million as of December 31, 2018 and 2017, respectively, which, if recognized, would affect the effective tax rate.

We recognize potential accrued interest and penalties related to unrecognized tax benefits within our global operations in income tax expense. For 2018, 2017 and 2016, we recognized \$0.5 million, \$0.3 million, and \$0.3 million, respectively, of expense for the potential payment of interest and penalties. Accrued interest and penalties were \$2.1 million and \$1.7 million as of December 31, 2018 and 2017. We conduct business globally and, as a result, file income tax returns in the United State federal jurisdiction and in many state and foreign jurisdictions. We are no longer subject to U.S. federal, state, and local, or non-US income tax examinations for the years before 2012. Due to the expiration of statutes of limitations in multiple jurisdictions globally during 2019, we anticipate it is reasonably possible that unrecognized tax benefits may decrease by \$2.4 million.

#### 4. Shareholders' Equity

During 2018, 2017 and 2016, we purchased 3,147,466, 2,695,295, and 2,821,488 shares of our common stock for \$143.3 million, \$124.9 million, and \$158.4 million, respectively, through open market transactions as part of a publicly-announced share repurchase program. In January 2019, our Board of Directors authorized us to repurchase up to an aggregate of \$50 million of our common stock.



## 5. Commitments and Contingencies

### Leases

Rent expense was \$7.1 million, \$7.1 million, and \$6.8 million in 2018, 2017 and 2016, respectively. In 2014, we amended our Atlanta headquarters lease to obtain additional space and extended the lease term to September 2025. As part of such lease agreement, we received reimbursement of \$1.3 million from the landlord in 2018 for leasehold improvements. The entire cash rent obligation is being amortized to expense on a straight-line basis over the lease term.

Aggregate future minimum lease payments under noncancellable operating leases as of December 31, 2018 are as follows (in thousands):

Year Ending December 31,	
2019	\$6,196
2020	5,616
2021	5,359
2022	5,129
2023	5,185
Thereafter	10,451
Total minimum payments required	\$37,936

There are no future minimum lease payments under capital leases as of December 31, 2018.

### Legal and Other Matters

From time to time, we may be involved in litigation relating to claims arising in the ordinary course of business, and occasionally legal proceeding not in the ordinary course. Many of our installations involve products that are critical to the operations of our clients' businesses. Any failure in our company's 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 set forth in our contracts will be enforceable in all instances. We are not currently a party to any legal proceeding in the ordinary course of business or other legal proceedings the result of which we believe is likely to have a material adverse impact upon our business, financial position, results of operations, or cash flows. We expense legal costs associated with loss contingencies as such legal costs are incurred.

## 6. Employee Benefit Plan

We sponsor the Manhattan Associates 401(k) Plan and Trust (the "401(k) Plan"), a qualified profit sharing plan with a 401(k) feature covering substantially all our employees. Under the 401(k) Plan's deferred compensation arrangement, eligible employees who elect to participate in the 401(k) Plan may contribute up to 60% of eligible compensation up to \$18,500, as defined, to the 401(k) Plan. The Internal Revenue Service has set the eligible compensation limit at \$275,000 for 2018. Since 2012, we have provided a 50% matching contribution up to 6% of eligible compensation being contributed after the participant's first year of employment. During 2018, 2017 and 2016, we made matching

contributions to the 401(k) Plan of \$4.1 million, \$4.1 million, and \$4.0 million, respectively.

## 7. Segment Reporting

We manage our business by geographic segment and have three geographic reportable segments: the Americas, EMEA, and APAC. All segments derive revenue from the sale and implementation of our supply chain commerce solutions. The individual products sold by the segments are similar in nature and are all designed to help companies manage the effectiveness and efficiency of their supply chain commerce. We use the same accounting policies for each reportable segment. The chief executive officer and chief financial officer evaluate performance based on revenue and operating results for each reportable segment.

The Americas segment charges royalty fees to the other segments based on software licenses and cloud subscriptions sold by those reportable segments. The royalties, which totaled \$4.2 million, \$7.0 million, and \$3.5 million in 2018, 2017 and 2016, respectively, are included in costs of revenue for each segment with a corresponding reduction in the America's cost of revenue. The revenues represented below are from external customers only. The geography-based costs consist of costs for professional services personnel, direct sales and marketing expenses, infrastructure costs to support the employee and customer base, billing and financial systems, management and general and administrative support. There are certain corporate expenses included in the Americas segment that we do not charge to the other segments. Such expenses include research and development, certain marketing and general and

administrative costs that support the global organization, and the amortization of acquired developed technology. Costs in the Americas' segment include all research and development costs including the costs associated with our operations in India.

Amortization expense on intangible assets in 2018, 2017 and 2016 was immaterial.

In accordance with the segment reporting topic of the FASB Codification, we present below certain financial information by reportable segment for 2018, 2017 and 2016 (in thousands):

	Year Ended December 31, 2018				2017			
	Americas	EMEA	APAC	Consolidated	Americas	EMEA	APAC	Consolidated
Revenue:								
Cloud subscriptions	\$20,611	\$2,075	\$418	\$ 23,104	\$9,274	\$322	\$-	\$ 9,596
Software license	28,423	11,406	5,539	45,368	44,145	22,875	5,293	72,313
Maintenance	117,489	20,933	8,611	147,033	116,426	18,710	7,862	142,998
Services	265,165	50,328	14,192	329,685	264,186	43,431	18,885	326,502
Hardware	13,798	2	167	13,967	43,118	11	61	43,190
Total revenue	445,486	84,744	28,927	559,157	477,149	85,349	32,101	594,599
Costs and Expenses:								
Cost of revenue	183,563	43,080	14,238	240,881	195,152	36,124	14,457	245,733
Operating expenses	156,793	14,484	4,499	175,776	134,167	12,761	4,312	151,240
Depreciation and amortization	7,601	743	269	8,613	8,324	527	209	9,060
Restructuring charge	-	-	-	-	2,813	108	-	2,921
Total costs and expenses	347,957	58,307	19,006	425,270	340,456	49,520	18,978	408,954
Operating income	\$97,529	\$26,437	\$9,921	\$ 133,887	\$136,693	\$35,829	\$13,123	\$ 185,645

	Year Ended December 31, 2016			
	Americas	EMEA	APAC	Consolidated
Revenue:				
Cloud subscriptions	\$5,783	\$-	\$-	\$ 5,783
Software license	65,351	9,187	4,675	79,213
Maintenance	111,592	15,117	7,139	133,848
Services	296,983	41,969	12,833	351,785
Hardware	33,875	9	44	33,928
Total revenue	513,584	66,282	24,691	604,557
Costs and Expenses:				
Cost of revenue	206,687	30,711	12,481	249,879
Operating expenses	133,637	12,983	4,661	151,281
Depreciation and amortization	8,313	528	249	9,090
Restructuring charge	-	-	-	-

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Total costs and expenses	348,637	44,222	17,391	410,250
Operating income	\$164,947	\$22,060	\$7,300	\$194,307

In the following table, we present goodwill, long-lived assets, and total assets by reportable segment as of December 31, 2018 and 2017 (in thousands):

	As of December 31, 2018				As of December 31, 2017			
	Americas	EMEA	APAC	Consolidated	Americas	EMEA	APAC	Consolidated
Goodwill, net	\$54,766	\$5,511	\$1,963	\$62,240	\$54,766	\$5,519	\$1,963	\$62,248
Long lived assets	20,251	3,161	674	24,086	19,424	2,846	527	22,797
Total assets	256,948	37,777	12,425	307,150	271,704	32,308	10,983	314,995

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For 2018, 2017 and 2016, we derived revenue from sales to customers outside the United States of approximately \$174.1 million, \$168.3 million, and \$144.8 million, respectively. Our remaining revenue was derived from domestic sales.

The majority of our software license revenue (70-80%) relates to our warehouse management product group. Cloud subscriptions revenue primarily relates to our Manhattan Active omnichannel and transportation management solutions.

## 8. Restructuring Charge

In May 2017, we eliminated about 100 positions due to retail sector headwinds and to align our services capacity with demand. We recorded a restructuring charge of approximately \$2.9 million pretax (\$1.8 million after-tax or \$0.03 per fully diluted share) in 2017. The charge primarily consisted of employee severance, employee transition costs and outplacement services and is classified in “Restructuring charge” in our Consolidated Statements of Income.

The following table summarizes the segment activity in the restructuring accrual for 2017:

	Americas	EMEA	APAC	Consolidated
	(in thousands)			
Restructuring charge	\$2,813	\$ 108	\$ -	\$ 2,921
Cash payments	(2,813)	(108 )	-	(2,921 )
Restructuring accrual balance at December 31, 2017	\$-	\$-	\$ -	\$ -

## 9. Subsequent Events

We evaluated all subsequent events that occurred after the date of the accompanying financial statements and determined that there were no events or transactions during this subsequent event reporting period which require recognition or disclosure in our financial statements.

## 10. Quarterly Results of Operations (Unaudited)

In the table below, we present our quarterly results of operations for 2018 and 2017. Such unaudited quarterly results have been prepared on substantially the same basis as the audited Consolidated Financial Statements.

	Quarter Ended							
	Mar 31, 2017	Jun 30, 2017	Sep 30, 2017	Dec 31, 2017	Mar 31, 2018	Jun 30, 2018	Sep 30, 2018	Dec 31, 2018
(In thousands, except per share data)								
Statements of Income Data:								
Revenue:								
Cloud subscriptions	\$1,496	\$2,378	\$2,534	\$3,188	\$4,469	\$5,377	\$6,455	\$6,803
Software license	21,277	20,064	16,260	14,712	7,555	12,973	11,526	13,314
Maintenance	33,376	35,959	36,338	37,325	36,397	36,993	37,177	36,466
Services	79,781	85,327	84,211	77,183	78,757	82,267	84,136	84,525
Hardware	7,559	10,413	13,540	11,678	3,391	4,261	3,057	3,258
Total revenue	143,489	154,141	152,883	144,086	130,569	141,871	142,351	144,366
Costs and expenses:								
Cost of software license	1,352	1,438	1,316	1,377	1,308	2,096	1,211	682
Cost of cloud subscriptions, maintenance and services	54,899	53,109	51,103	48,934	56,486	56,985	59,975	62,138
Cost of hardware	5,370	7,766	10,653	8,416	-	-	-	-
Research and development	14,225	14,102	14,747	14,630	17,059	18,176	18,453	18,208
Sales and marketing	11,789	11,732	10,739	13,222	12,884	13,809	10,726	13,843
General and administrative	11,872	11,387	11,031	11,764	12,800	12,885	13,711	13,222
Depreciation and amortization	2,262	2,326	2,275	2,197	2,202	2,235	2,179	1,997
Restructuring charge	-	3,022	(77 )	(24 )	-	-	-	-
Total costs and expenses	101,769	104,882	101,787	100,516	102,739	106,186	106,255	110,090
Operating income	41,720	49,259	51,096	43,570	27,830	35,685	36,096	34,276
Other (loss) income, net	(371 )	(68 )	207	(580 )	721	986	1,538	(901 )
Income before income taxes	41,349	49,191	51,303	42,990	28,551	36,671	37,634	33,375
Income tax provision	13,125	18,047	18,704	18,476	5,899	9,003	9,179	7,460
Net income	\$28,224	\$31,144	\$32,599	\$24,514	\$22,652	\$27,668	\$28,455	\$25,915
Basic earnings per share	\$0.40	\$0.45	\$0.47	\$0.36	\$0.34	\$0.42	\$0.43	\$0.40
Diluted earnings per share	\$0.40	\$0.45	\$0.47	\$0.36	\$0.33	\$0.42	\$0.43	\$0.40
Shares used in computing basic earnings per share	69,973	69,227	68,928	68,485	67,553	66,429	65,658	65,199
Shares used in computing diluted	70,247	69,421	69,135	68,791	67,736	66,535	65,901	65,526

earnings per share

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**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**

We maintain disclosure controls and procedures designed to ensure that information required to be disclosed in reports filed under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

No system of controls, no matter how well designed and operated, can provide absolute assurance that the objectives of the system of controls are met, and no evaluation of controls can provide absolute assurance that the system of controls has operated effectively in all cases. Our disclosure controls and procedures, however, are designed to provide reasonable assurance that the objectives of disclosure controls and procedures are met.

As of the end of the period covered by this report, our Chief Executive Officer and Chief Financial Officer evaluated, with the participation of management, the effectiveness of our disclosure controls and procedures. Based on the evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this report, our disclosure controls and procedures were effective to provide reasonable assurance that the objectives of disclosure controls and procedures are met.

**Management's Report on Internal Control over Financial Reporting**

Management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2018, and the report of Ernst & Young LLP on the effectiveness of our internal control over financial reporting are contained on pages 40 and 41 of this report.

**Change in Internal Control over Financial Reporting**

During the fourth quarter of 2018, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting, including any corrective actions with regard to material weaknesses.

**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 prior to April 1, 2019, under the captions “Election of Directors,” “Executive Officers,” “Section 16(a) Beneficial Ownership Reporting Compliance,” “Code of Ethics,” and “Board Committees.”

**Item 11. *Executive Compensation***

The information required by this item is incorporated by reference from the relevant information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1, 2019, under the captions “Director Compensation,” “Executive Compensation,” “Compensation Committee Interlocks and Insider Participation,” and “Compensation Committee Report.”

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

The information required by this item is incorporated by reference from the relevant information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1, 2019, under the caption “Security Ownership of Certain Beneficial Owners and Management.” The information required by this item with respect to the securities authorized for issuance under equity compensation plans is included in Part II, Item 5 of this Form 10-K and is incorporated by reference herein.

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

The information required by this item is incorporated by reference from the relevant information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1, 2019, under the captions “Related Party Transactions” and “Election of Directors.”

**Item 14. *Principal Accountant Fees and Services***

The information required by this item is incorporated by reference from the relevant information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1,

2019, under the caption “Ratification of Appointment of Independent Registered Public Accounting Firm.”

## PART IV

**Item 15. Exhibits and Financial Statement Schedules**(a) 1. *Financial Statements.*

The response to this item is submitted as a separate section of this Form 10-K. See Item 8.

2. *Financial Statement Schedule.*

The following financial statement schedule is filed as a part of this report:

## SCHEDULE II

## MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES

## VALUATION AND QUALIFYING ACCOUNTS

(in thousands)

Classification:	Balance at Beginning of Period	Additions Charged to Operations	Net Deductions	Balance at End of Period
Allowance for Doubtful Accounts				
For the year ended:				
December 31, 2016	\$ 7,031	\$ 4,889	\$ 8,325	(a) \$3,595
December 31, 2017	\$ 3,595	\$ 1,574	\$ 2,477	(a) \$2,692
December 31, 2018	\$ 2,692	\$ 3,876	\$ 3,979	(a) \$2,589
Deferred Tax Asset Valuation Allowance				
For the year ended:				
December 31, 2016	\$ 4,916	\$ -	\$ 885	(b) \$4,031
December 31, 2017	\$ 4,031	\$ 53	\$ -	(b) \$4,084
December 31, 2018	\$ 4,084	\$ -	\$ 238	(b) \$3,846
Restructuring Charge Accrual				
For the year ended:				
December 31, 2017	\$ -	\$ 2,921	\$ 2,921	(c) \$-

(a) Represents write-offs of accounts, net of recoveries.

(b) Represents current year releases credited to expenses and current year reductions due to decreases in net deferred tax assets.

(c) Represents current year cash payments.

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

*3.Exhibits.*

See (b) below.

(b)The exhibits listed below under “Exhibit Index” are filed with or incorporated by reference in this Report. Where such filing is made by incorporation by reference to a previously filed registration statement or report, such registration statement or report is identified in parentheses.

(c)See Item 15(a)(2).

**Item 16.***Form 10-K Summary*

None.

EXHIBIT INDEX

The following exhibits are filed or incorporated by reference as part of this Report.

Exhibit Number	Description
3.1	<u>Articles of Incorporation of the Registrant dated February 24, 1998 (Incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2014 (File No. 00023999), filed on July 29, 2014).</u>
3.2	<u>Amended Bylaws of the Registrant (As Amended Effective October 25, 2018) (Incorporated by reference to Exhibit 3.2 to the Company's Form 10-Q for the period ended September 30, 2018 (File No. 000-23999), filed on October 25, 2018).</u>
4.1	<u>Provisions of the Articles of</u>

Incorporation and Bylaws of the Registrant defining rights of the holders of common stock of the Registrant (Incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1 (File No. 333-47095), filed on February 27, 1998).

4.2 Specimen Stock Certificate (Incorporated by reference to Exhibit 4.2 to the Company's Pre-Effective Amendment No. 1 to its Registration Statement on Form S-1 (File No. 333-47095), filed on April 2, 1998).

10.1(a) Lease Agreement by and between Wildwood Associates, a Georgia general partnership, and the Registrant dated September 24, 1997 (Incorporated by reference to Exhibit 10.1 to the Company's Registration

Statement on  
Form S-1 (File  
No. 333-47095).  
filed on  
February 27,  
1998).

(b) First  
Amendment to  
Lease between  
Wildwood  
Associates, a  
Georgia general  
partnership, and  
the Registrant  
dated  
October 31, 1997  
(Incorporated by  
reference to  
Exhibit 10.2 to  
the Company's  
Registration  
Statement on  
Form S-1 (File  
No. 333-47095).  
filed on  
February 27,  
1998).

(c) Second  
Amendment to  
Lease  
Agreement  
between  
Wildwood  
Associates, a  
Georgia general  
partnership, and  
the Registrant,  
dated  
February 27,  
1998  
(Incorporated by  
reference to  
Exhibit 10.8 to  
the Company's  
Pre-Effective  
Amendment  
No. 1 to its  
Registration  
Statement on

Form S-1 (File No. 333-47095), filed on April 2, 1998).

- (d) Third Amendment to Lease Agreement between Wildwood Associates and the Registrant, dated October 24, 2000 (Incorporated by reference to Exhibit 10.9 to the Company's Annual Report for the period ended December 31, 2000 (File No. 000-23999), filed on April 2, 2001).

- 10.2(a) Lease Agreement by and between Wildwood Associates, a Georgia general partnership, and the Registrant, dated June 25, 2001 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report for the period ended June 30, 2001 (File No. 000-23999), filed August 14, 2001).

- (b)

First  
Amendment to  
Lease  
Agreement  
between  
Wildwood  
Associates, and  
the Registrant,  
dated June 10,  
2002  
(Incorporated by  
reference to  
Exhibit 10.6 to  
the Company's  
Annual Report  
for the period  
ended  
December 31,  
2006 (File  
No. 000-23999),  
filed on  
March 14, 2007).

- (c) Second  
Amendment to  
Lease  
Agreement  
between 2300  
Windy Ridge  
Parkway  
Investors LLC,  
and the  
Registrant, dated  
February 27,  
2007  
(Incorporated by  
reference to  
Exhibit 10.7 to  
the Company's  
Annual Report  
for the period  
ended  
December 31,  
2006 (File  
No. 000-23999),  
filed on  
March 14, 2007).

- (d) Third  
Amendment to  
Lease

Agreement  
between 2300  
Windy Ridge  
Parkway  
Investors LLC,  
and the  
Registrant, dated  
June 14, 2007  
(Incorporated by  
reference to  
Exhibit 10.2(d)  
to the Company's  
Annual Report  
for the period  
ended  
December 31,  
2014 (File  
No. 000-23999),  
filed on  
February 5,  
2015).

- (e) Fourth  
Amendment to  
Lease  
Agreement  
between SP4  
2300 Windy  
Ridge LP, and  
the Registrant,  
dated August 14,  
2012  
(Incorporated by  
reference to  
Exhibit 10.2(e)  
to the Company's  
Annual Report  
for the period  
ended  
December 31,  
2014 (File  
No. 000-23999),  
filed on  
February 5,  
2015).

- (f) Fifth  
Amendment to  
Lease  
Agreement  
between 2300

Windy Ridge  
LLC, and the  
Registrant, dated  
May 19, 2014  
(Incorporated by  
reference to  
Exhibit 10.2(f) to  
the Company's  
Annual Report  
for the period  
ended  
December 31,  
2014 (File  
No. 000-23999),  
filed on  
February 5,  
2015).

Exhibit

Number Description

- (g) Sixth Amendment to Lease Agreement between 2300 Windy Ridge LLC, and the Registrant, dated August 13, 2014 (Incorporated by reference to Exhibit 10.2(g) to the Company's Annual Report for the period ended December 31, 2014 (File No. 000-23999), filed on February 5, 2015).
- (h) Seventh Amendment to Lease Agreement between 2300 Windy Ridge LLC and the Registrant, dated April 29, 2015 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2015 (File No. 000-23999), filed on July 28, 2015).
- 10.3 Agreement to Build and Lease between Orchid Apartments Private Limited and Manhattan Associates India Development Centre Private Limited, executed on November 19, 2004 (Incorporated by reference to Exhibit 10.8 to the Company's Annual Report for the period ended December 31, 2004 (File No. 000-23999), filed on March 16, 2005).
- 10.4 Lease Agreement between IGE Energy Services (UK) Limited, Manhattan Associates Limited and Manhattan Associates, Inc., dated February 1, 2005 (Incorporated by reference to Exhibit 10.9 to the Company's Annual Report for the period ended December 31, 2004 (File No. 000-23999), filed on March 16, 2005).
- 10.5 Form of Director and Officer Indemnification Agreement (Incorporated by reference to Exhibit 10.2 to the Company's Form 8-K (File No. 000-23999) filed on April 4, 2013).
- 10.6\* Summary Plan Description of the Registrant's 401(k) Plan and Trust, effective January 1, 1995 (Incorporated by reference to Exhibit 10.4 to the Company's Registration Statement on Form S-1 (File No. 333-47095), filed on February 27, 1998).
- 10.7(a)\* Manhattan Associates, Inc. 1998 Stock Incentive Plan (Incorporated by reference to Exhibit 10.10 to the Company's Registration Statement on Form S-1 (File No. 333-47095), filed on February 27, 1998).
- (b)\* First Amendment to the Manhattan Associates, Inc. 1998 Stock Incentive Plan (Incorporated by reference to Exhibit 10.22 to the Company's Annual Report for the period ended December 31, 1998 (File No. 000-23999), filed on March 31, 1999).
- (c)\* Second Amendment to the Manhattan Associates, Inc. 1998 Stock Incentive Plan (Incorporated by reference to Exhibit 10.23 to the Company's Annual Report for the period ended December 31, 1998 (File No. 000-23999), filed on March 31, 1999).
- (d)\* Third Amendment to the Manhattan Associates, Inc. 1998 Stock Incentive Plan (Incorporated by reference to Exhibit 10.24 to the Company's Annual Report for the period ended December 31, 1998 (File No. 000-23999), filed on March 31, 1999).
- (e)\* Fourth Amendment to the Manhattan Associates, Inc. 1998 Stock Incentive Plan (Incorporated by reference to Exhibit 10.25 to the Company's Annual Report for the period ended December 31, 1999 (File No. 000-23999), filed on March 30, 2000).
- (f)\* Fifth Amendment to the Manhattan Associates, Inc. 1998 Stock Incentive Plan (Incorporated by reference to Exhibit 4.8 to the Company's Form S-8 (File No. 333-68968), filed on September 5, 2001).

- (g)\* Sixth Amendment to the Manhattan Associates, Inc. 1998 Stock Incentive Plan (Incorporated by reference to Annex A to the Company's Proxy Statement for its Annual Meeting held May 17, 2002 (File No. 000-23999), filed on April 24, 2002).
- (h)\* Amendment No. 7 to the Manhattan Associates, Inc. 1998 Stock Incentive Plan (Incorporated by reference to Exhibit 4.10 to the Company's Form S-8 (File No. 333-105913), filed on June 6, 2003).
- 10.8\* Form of Composite Stock Option Agreement (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report for the period ended March 31, 2006 (File No. 000-23999), filed on May 4, 2006).
- 10.9(a)\* Executive Employment Agreement by and between the Registrant and Peter F. Sinisgalli, effective as of February 25, 2004 (Incorporated by reference to Exhibit 10.28 to the Company's Annual Report for the period ended December 31, 2003 (File No. 000-23999), filed on March 15, 2004).

Exhibit Number	Description
(b)*	<p><u>Modification dated July 19, 2007 by and between the Company and Peter F. Sinisgalli to the Executive Employment Agreement dated February 25, 2004 (Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K (File No. 000-23999), filed on July 24, 2007).</u></p>
10.10*	<p><u>Executive Employment Agreement by and between the Registrant and Peter F. Sinisgalli, effective as of April 13, 2012 (Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K (File No. 000-23999), filed on December 23, 2011).</u></p>
10.11*	<p><u>Separation and Non-Competition Agreement by and between the Registrant and Peter F. Sinisgalli, effective as of February 25, 2004 (Incorporated by</u></p>

reference to  
Exhibit 10.29 to  
the Company's  
Annual Report for  
the period ended  
December 31,  
2003 (File  
No. 000-23999),  
filed on  
March 15, 2004).

10.12(a)\* Form of  
Executive  
Employment  
Agreement  
(Incorporated by  
reference to  
Exhibit 10.1 to  
the Company's  
Form 8-K (File  
No. 000-23999)  
filed on April 4,  
2013).

(b)\* Updated Schedule  
to Form of  
Executive  
Employment  
Agreement of  
Initial Salaries  
and Target Bonus  
Opportunities for  
Named Executive  
Officers  
(Incorporated by  
reference to  
Exhibit 10.1(b) to  
the Company's  
Quarterly Report  
on Form 10-Q for  
the period ended  
June 30, 2013  
(File No.  
000-23999) filed  
on July 31, 2013).

10.13\* Executive  
Employment  
Agreement with  
Steven P. Smith  
(Incorporated by

reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2013 (File No. 000-23999) filed on July 31, 2013).

10.14 \* Form of Modification Agreement for Terms and Conditions for Stock Options. (Incorporated by reference to Exhibit 10.3 to the Company's Form 8-K (File No. 000-23999), filed on January 2, 2009).

10.15 Form of License Agreement, Software Maintenance Agreement and Consulting Agreement (Incorporated by reference to Exhibit 10.18 to the Company's Pre-Effective Amendment No. 1 to its Registration Statement on Form S-1 (File No. 333-47095), filed on April 2, 1998).

10.16 Form of Software License, Services and Maintenance Agreement

(Incorporated by reference to Exhibit 10.21 to the Company's Annual Report for the period ended December 31, 1998 (File No. 000-23999), filed on March 31, 1999).

10.17(a)\* 2007 Stock Incentive Plan, as amended by the First Amendment thereto (Incorporated by reference to Annex A to the Company's Definitive Proxy Statement related to its 2009 Annual Meeting of Shareholders (File No. 000-23999) filed on April 20, 2009).

(b)\* Second amendment to 2007 Stock Incentive Plan (Incorporated by reference to Annex A to the Company's Definitive Proxy Statement related to its 2011 Annual Meeting of Shareholders (File No. 000-23999) filed on April 15, 2011).

(c)\* Third amendment to 2007 Stock

- Incentive Plan  
(Incorporated by  
reference to  
Annex A to  
Exhibit 10.1 to  
the Company's  
Quarterly Report  
on Form 10-Q for  
the period ended  
September 30,  
2017 (File No.  
000-23999) filed  
on October 30,  
2017).
- 10.18\* Written Summary  
of Manhattan  
Associates, Inc.  
Annual Cash  
Incentive Plan  
(Incorporated by  
reference to  
Exhibit 10.47 to  
the Company's  
Annual Report for  
the period ended  
December 31,  
2009 (File  
No. 000-23999),  
filed on February  
19, 2010).
- 10.19\* Form of  
Manhattan  
Associates, Inc.  
Restricted Stock  
Award  
Agreement for  
Employees  
(Incorporated by  
reference to  
Exhibit 10.48 to  
the Company's  
Annual Report for  
the period ended  
December 31,  
2009 (File  
No. 000-23999),  
filed on February  
19, 2010).
- 10.20\*

Form of  
Manhattan  
Associates, Inc.  
Restricted Stock  
Award  
Agreement for  
Non-Employee  
Directors  
(Incorporated by  
reference to  
Exhibit 10.49 to  
the Company's  
Annual Report for  
the period ended  
December 31,  
2009 (File  
No. 000-23999),  
filed on February  
19, 2010).

10.21\* Form of  
Manhattan  
Associates, Inc.  
Restricted Stock  
Unit Award  
Agreement for  
Employees  
(Incorporated by  
reference to  
Exhibit 10.50 to  
the Company's  
Annual Report for  
the period ended  
December 31,  
2012 (File  
No. 000-23999),  
filed on February  
23, 2012).

10.22\* Form of  
Manhattan  
Associates, Inc.  
Restricted Stock  
Unit Award  
Agreement for  
Non-Employee  
Directors  
(Incorporated by  
reference to  
Exhibit 10.51 to  
the Company's

Annual Report for  
the period ended  
December 31,  
2012 (File  
No. 000-23999),  
filed on February  
23, 2012).

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Exhibit Number	Description
10.23*	<p><u>Executive Employment Agreement by and between the Registrant and Bruce Richards, effective as of August 1, 2011 (Incorporated by reference to Exhibit 10.52 to the Company's Annual Report for the period ended December 31, 2012 (File No. 000-23999), filed on February 23, 2012).</u></p>
10.24*	<p><u>Severance and Non-Competition Agreement by and between the Registrant and Bruce Richards, effective as of August 1, 2011 (Incorporated by reference to Exhibit 10.53 to the Company's Annual Report for the period ended December 31, 2012 (File No. 000-23999), filed on February 23, 2012).</u></p>
10.25*	<p><u>Modification Agreement for Terms and Conditions for Stock Options by and between the Registrant and Eddie Capel, effective as of June 4, 2007 (Incorporated by</u></p>

reference to Exhibit 10.54 to the Company's Annual Report for the period ended December 31, 2012 (File No. 000-23999), filed on February 23, 2012).

10.26\* Severance and Non-Competition Agreement by and between the Registrant and Eddie Capel, effective as of March 18, 2010 (Incorporated by reference to Exhibit 10.55 to the Company's Annual Report for the period ended December 31, 2012 (File No. 000-23999), filed on February 23, 2012).

10.27\* Settlement Agreement by and between the Registrant and Steven P. Smith, effective as of June 8, 2015 (Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K (File No. 000-23999), filed on June 12, 2015).

10.28 2016 Annual Cash Bonus Plan (Incorporated by reference from Annex B to the Company's Definitive Proxy Statement for its 2016 Annual Meeting of

Shareholders filed with the SEC on April 8, 2016 (SEC File No. 000-23999).

10.29\* Executive Employment Agreement with Linda C. Pinne (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2016 (File No. 000-23999), filed on April 22, 2016).

10.30\* Indemnification Agreement with Linda C. Pinne (Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2016 (File No. 000-23999), filed on April 22, 2016).

10.31\* Consulting Agreement, dated May 12, 2016, by and between the Registrant and Dan Lautenbach (Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K (File No. 000-23999), filed on May 13, 2016).

10.32\* Executive Employment Letter

Agreement, dated July 27, 2016, by and between the Registrant and Dennis Story (Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K (File No. 000-23999), filed on August 1, 2016).

10.33\* Form of Executive Employment Agreement (Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the period ended September 30, 2018 (File No. 000-23999), filed on October 25, 2018).

21.1 List of Subsidiaries.

23.1 Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.

31.1 Certification of Principal Executive Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

31.2 Certification of Principal Financial Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant

to Section 302 of the  
Sarbanes-Oxley Act  
of 2002

32\*\* Certification of  
Principal Executive  
Officer and Principal  
Financial Officer  
pursuant to 18 U.S.C.  
Section 1350, as  
adopted pursuant to  
Section 906 of the  
Sarbanes-Oxley Act  
of 2002

101.INS XBRL Instance  
Document – the  
instance document  
does not appear in  
the Interactive Data  
File because its  
XBRL tags are  
embedded within the  
Inline XBRL  
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

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Exhibit  
Number Description

101.PRE XBRL  
Taxonomy  
Extension  
Presentation  
Linkbase  
Document

\*Management contract or compensatory plan or agreement.

\*\*In accordance with Item 601(b)(32)(ii) of the SEC's Regulation S-K, this Exhibit is hereby furnished to the SEC as an accompanying document and is not deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that Section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933.

SIGNATURES

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

MANHATTAN ASSOCIATES, INC.

By: /s/ Eddie Capel  
 Eddie Capel  
 President, Chief Executive Officer, and Director  
 Date: February 8, 2019

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

Signature	Title	Date
/s/ John J. Huntz, Jr. John J. Huntz, Jr.	Chairman of the Board	February 8, 2019
/s/ Eddie Capel Eddie Capel	President, Chief Executive Officer, and Director (Principal Executive Officer)	February 8, 2019
/s/ Dennis B. Story Dennis B. Story	Executive Vice President, Chief Financial Officer, and Treasurer (Principal Financial Officer)	February 8, 2019
/s/ Linda C. Pinne Linda C. Pinne	Senior Vice President, Global Corporate Controller, and Chief Accounting Officer (Principal Accounting Officer)	February 8, 2019
/s/ Edmond I. Eger III Edmond I. Eger III	Director	February 8, 2019
/s/ John H. Heyman John H. Heyman	Director	February 8, 2019
/s/ Linda T. Hollembaek Linda T. Hollembaek	Director	February 8, 2019

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/s/ Charles E. Moran	Director	February 8, 2019
Charles E. Moran		
/s/ Thomas E. Noonan	Director	February 8, 2019
Thomas E. Noonan		
/s/ Deepak Raghavan	Director	February 8, 2019
Deepak Raghavan		