MANHATTAN ASSOCIATES INC
Form 10-K
February 03, 2017

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, 2016

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+)	58-2373424 (I.R.S. Employer Identification No.)
2300 Windy Ridge Parkway, Tenth Floor Atlanta, Georgia (Address of principal executive offices)	30339 (Zip Code)

Registrant's telephone number, including area code: (770) 955-7070

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted 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 and post 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, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	Accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company)	Smaller reporting company

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, 2016 was $4,591,996,136, which was calculated based upon a closing sales price of $64.13 per share of the Common Stock as reported by the Nasdaq Global Select Market on the same day. As of January 30, 2017, the Registrant had outstanding 70,398,760 shares of Common Stock.

DOCUMENTS INCORPORATED BY REFERENCE

The Registrant’s definitive Proxy Statement for the Annual Meeting of Shareholders to be held May 18, 2017 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, 2016

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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, the words “may,” “expect,” “forecast,” “anticipate,” “intend,” “plan,” “believe,” “could,” “seek,” “project,” “estimate,” and similar expressions are general 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 Annual Report. 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:

- economic, political and market conditions;
- ability to attract and retain highly skilled employees;
- competition;
- our dependence on a single line of business;
- our dependence on generating license revenue to drive business;
- risks associated with large system implementations;
- the requirement to maintain high quality professional service capabilities;
- possible compromises of our data protection and IT security measures;
- the risks of international operations, including foreign currency exchange risk;
- the possibility that research and developments investments may not yield sufficient returns;
- possible liability to customers if our products fail;
- undetected errors or “bugs” in our software;
- 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 likely exit from the European Union; and
- other risks described under the heading “Risk Factors” in Part I, Item 1A of this Annual Report.

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 omni-channel 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 supply chain commerce solutions that help our customers in three distinct areas of their business:

- Supply Chain - Manhattan Associates provides companies the tools needed to manage distribution and optimize transportation costs throughout their entire commercial network. Manhattan provides shippers the most comprehensive transportation management solutions in the market. This includes services and software to help them move freight via the most cost-effective means possible while also meeting service-level expectations. Likewise, 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.
- Omni-Channel - Meeting ever-evolving consumer expectations of service, inventory availability and delivery convenience is a challenge every retailer must meet head on. Manhattan's Omni-Channel solutions provide both 'central' or corporate solutions that manage inventory availability across all channels and locations as well as 'local' solutions deployed in retail stores to empower store associates to satisfy the demands of the walk-in shopper and the online customer.
- Inventory - Manhattan solutions provide distributors of any 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. 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 single, holistic technology architecture 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 instance, the ability to apportion freight, labor, inventory handling and overhead costs across the supply chain to determine an item's total cost to serve for an end customer normally requires a massive integration and harmonization effort. With a platform like Manhattan's, this is simply another module that taps into a readily available pool of data in the supply chain and inventory solutions.
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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.

- 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.

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Supply Chain Solutions

As previously described, 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 and the overall distribution center layout. All of these solutions come together to provide the customer the most productive workforce with an 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 network that can be successful, along with planning, execution and settlement tools to manage day-to-day transportation requirements. 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.

Omni-Channel 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.

- Omni-Channel Central 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 full inventory visibility, direct to client distribution and seamless fulfillment operations. The goal is to enable an omni-channel 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. Lastly, the Call Center application provides representatives access to this inventory picture as well as complete customer sales history to satisfy shopper needs, regardless of whether it is an exchange, a return or a new order.
- Omni-Channel Local Solutions - As the consumer enters the store with more information than ever, it is now vital to equip the sales associate with relevant information and capabilities to satisfy that shopper's every demand. Local solutions include mobile Point of Sale to process purchase transactions, Clienteling to provide the associate with a complete picture of the shopper's purchase history, and Tablet Retailing to offer a virtual showroom. Manhattan brings all of these solutions together on a single mobile platform to enable retailers to offer unparalleled service and convenience for the shopper.

Another important part of Local solutions 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 omni-channel 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.

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- 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.

Manhattan 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.

Technology Platform

Our solutions operate across Unix, IBM System i, Linux and Microsoft's .NET computing platforms, as well as on multiple hardware platforms and systems. Because 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 systems (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.

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.

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 software 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 27 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.

Customer Support Services and Software Enhancements

We offer a comprehensive program that provides our customers 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 of 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.

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. We believe 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 omni-channel, supply chain and inventory management:

Develop and Enhance Software Solutions. We intend to continue to focus our research and development resources on enhancing our Supply Chain, Omni-Channel 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 outside the United States, and for organizations with global operations. We have offices in Australia, China, France, India, Japan, the Netherlands, Singapore, 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 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 sales (licensing) 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 prospect profiling and targeting, lead generation, public relations, analyst relations, trade show attendance and sponsorships, supply chain conference hosting, online 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, 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 plan to 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 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 12%, 8%, and 10% of total revenue for the years ended December 31, 2016, 2015 and 2014, respectively. No single customer accounted for more than 10% of our total revenue in 2016, 2015 and 2014.

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 Process 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.

Our research and development expenses for the years ended December 31, 2016, 2015 and 2014 were $54.7 million, $53.9 million, and $49.0 million, respectively. We intend to continue to invest significantly in product development.

Competition

Our solutions are solely focused on enterprise commerce capabilities, which have been consolidating rapidly, are intensely competitive, and are characterized by rapid technological change. 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., Salesforce.com, NCR Corporation, 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 omni-channel 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 omni-channel 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 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 reporting segments based on geographic location: the Americas; Europe, Middle East and Africa ("EMEA"); and Asia Pacific ("APAC"). For further information on our segments, see Note 7 to our Consolidated Financial Statements. Our international revenue was approximately \$144.8 million, \$131.3 million, and \$134.6 million for the years ended December 31, 2016, 2015 and 2014, respectively, which represents approximately 24%, 24%, and 27% of our total revenue for the years ended December 31, 2016, 2015 and 2014, respectively. International revenue includes all revenue derived from sales to customers outside the United States. At December 31, 2016, we employed approximately 1,550 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, 2016, we employed approximately 3,020 employees worldwide, of which 1,470 are based in the Americas, 210 in EMEA, and 1,340 in APAC (including India).

Available Information

We file annual, quarterly and current reports and other information with the Securities and Exchange Commission (the "SEC" or the "Commission"). These materials can be inspected and copied at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Copies of these materials may also be obtained by mail at prescribed rates from the SEC's Public Reference Room at the above address. Information about the Public Reference Room can be obtained by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website at 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, 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.

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 in places like Ukraine, Syria and Iraq 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.

Our 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, NCR Corporation, 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 do we. 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 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 license sales, 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, 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 versions or products, 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.

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, impact revenue, and harm our reputation.

Our ability to license 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.

If our data protection or other security measures are compromised and as a result our data, our customers' data or our IT systems are accessed improperly, made unavailable, or improperly modified, our products and services may be perceived as vulnerable, our brand and reputation could be damaged, the IT services we provide to our customers could be disrupted, and customers may stop using our products and services, all of which could reduce our revenue and earnings, increase our expenses and expose us to legal claims and regulatory actions. 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 in 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 the confidential information or data of our customers. Data may also be accessed or modified improperly 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 described above were to occur, we could suffer damage to our brand and reputation, which could reduce our revenue and earnings, increase our expenses to address and fix the incidents as well as expose us to legal claims and regulatory actions.

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 greatly increase our cost of providing our products and services.

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 Europe: the United Kingdom, the Netherlands, and France; and in Asia: China, Japan, Singapore, and India; and 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; 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.

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, 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 software may contain undetected errors or "bugs" resulting in harm to our reputation which could adversely impact our business, results of operations, cash flow, and financial condition. Software products as complex as those offered by us might contain undetected errors or failures when first introduced or when new versions are released. Despite testing, we cannot ensure that 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 claims from our customers for significant damages, and we cannot assure you that courts would enforce the provisions in our customer agreements that limit our liability for damages. In turn, our business, results of operations, cash flow, and financial condition could be materially adversely affected.

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 would be subject to additional income taxes which would result in a higher effective tax rate.

In addition, the United States government and other governments are considering and may adopt 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 effecting 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 out of our 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 (the "U.K") held a referendum in which voters approved an exit from the European Union ("E.U."), commonly referred to as Brexit. It is expected that the U.K. government will initiate a process to withdraw from the E.U. and begin negotiating the terms of its separation. The announcement of Brexit has resulted in significant volatility in global stock market and currency exchange rate fluctuations that resulted in strengthening of the U.S. dollar relative to other foreign currencies in which we conduct business. The announcement of Brexit and likely withdrawal of the U.K. from the E.U. may also create global economic uncertainty, which 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 11% and 13% of our total revenue for the year ended December 31, 2016 and 2015, 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 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. For example, the Financial Accounting Standards Board has issued new accounting standards for revenue recognition and leases. We are continuing to evaluate the impact that the adoption of these standards 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.

Item 1B. Unresolved Staff Comments

As of December 31, 2016, we do not have any unresolved SEC staff comments.

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 additional offices under multi-year agreements in New Jersey. We also occupy facilities outside of the United States under multi-year agreements in the United Kingdom, the Netherlands, France, China, Japan, Singapore, India, and Australia. We also occupy offices under short-term agreements in other geographical regions. 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. The Company is not currently a party to any legal proceeding the result of which it believes could have a material adverse impact upon its 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 following table sets forth the high and low closing sales prices of the common stock as reported by the Nasdaq Global Select Market for the periods indicated:

Fiscal Period	High Price	Low Price
2016		
First Quarter	$64.68	$45.82
Second Quarter	68.16	55.40
Third Quarter	67.29	57.62
Fourth Quarter	59.01	49.97
2015		
First Quarter	$55.11	$38.53
Second Quarter	61.23	50.80
Third Quarter	68.19	56.96
Fourth Quarter	76.96	62.68

On January 30, 2017, the last reported sales price of our common stock on the Nasdaq Global Select Market was $51.23 per share. The number of registered shareholders of record of our common stock as of January 30, 2017 was approximately 14. 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.

Equity Compensation Plan Information

The following table provides information regarding our current equity compensation plans as of December 31, 2016:

Plan Category	Number of securities to be issued upon exercise of outstanding options and rights	Weighted-average exercise price of outstanding options and rights	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans	1,029,230	$0.00	11,333,600

approved by security holders			
Equity compensation plans not approved by security holders	-	-	-
Total	1,029,230	$0.00	11,333,600

Additional information regarding our equity compensation plans can be found in Note 2 of the Notes to our Consolidated Financial Statements.

Purchase of Equity Securities

The following table provides information regarding our common stock repurchases under our publicly-announced share repurchase program and shares withheld for taxes due upon vesting of restricted stock for the quarter ended December 31, 2016. All repurchases related to the share repurchase program were made on the open market.

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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, 2016	124,500	$52.15	124,500	$43,507,134
November 1 - November 30, 2016	463,390	51.91	463,390	19,454,170
December 1 - December 31, 2016	369,580	52.37	369,580	98,984
Total	957,470		957,470	

During the year ended December 31, 2016, we repurchased a total of 2,821,488 shares at an average price per share of $56.14 under our publicly-announced share repurchase program. In January 2017, our Board of Directors authorized the Company to repurchase up to an aggregate of $50 million of the Company's 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 the years ended December 31, 2016, 2015 and 2014, and the balance sheet data as of December 31, 2016 and 2015, 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 years ended December 31, 2013 and 2012 and the balance sheet data as of December 31, 2014, 2013, and 2012 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,				
	2012	2013	2014	2015	2016
	(in thousands, except per share data)				
Statement of Income Data:					
Software license	$61,494	$62,416	$71,583	$78,615	$84,996
Total revenue	$376,248	$414,518	$492,104	$556,371	$604,557
Operating income	$80,073	$101,287	$127,124	$161,446	$194,307
Net income	$51,853	$67,296	$82,000	$103,475	$124,234
Earnings per diluted share	$0.64	$0.86	$1.08	$1.40	$1.72

	December 31,				
	2012	2013	2014	2015	2016
	(in thousands)				

Balance Sheet Data:					
Cash, cash equivalents and investments	$103,047	$132,956	$124,438	$128,760	$95,615
Total assets	$261,813	$297,828	$318,170	$337,913	$297,140
Debt	$-	$-	$-	$-	$-
Shareholders' equity	$161,509	$181,586	$182,023	$195,492	$169,366

	Year Ended December 31,				
	2012	2013	2014	2015	2016
	(in thousands)				
Statement of Cash Flow Data:					
Operating cash flow	$75,271	$89,387	$94,162	$120,153	$139,346

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 “anticipate,” “believe,” “plan,” “estimate,” “expect,” and “intend” and other similar 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 omni-channel 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. We have three principal sources of revenue:

- licenses of our software;
- professional services, including solutions planning and implementation, related consulting, customer training, and customer support services and software enhancements (collectively, “services”); and
- hardware sales and other revenue.

In 2016, we generated $604.6 million in total revenue, with a revenue mix of: license revenue 14%; services revenue 77%; and hardware and other revenue 9%.

The Company has three geographic reportable segments: the Americas, EMEA, and APAC. Geographic revenue is based on the location of the sale. Our international revenue was approximately $144.8 million, $131.3 million and $134.6 million for the years ended December 31, 2016, 2015 and 2014, respectively, which represents approximately 24%, 24% and 27% of our total revenue for the years ended December 31, 2016, 2015 and 2014, respectively. International revenue includes all revenue derived from sales to customers outside the United States. At December 31, 2016, we employed approximately 3,020 employees worldwide, of which 1,470 employees are based in the Americas, 210 employees in EMEA, and 1,340 employees in APAC (including India). We have offices in Australia, China, France, India, Japan, the Netherlands, Singapore, 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.

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 2016, approximately 76% of our total revenue was generated in the United States, 11% 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 has 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 often is 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, the current sales cycles for large license sales 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 2017, the International Monetary Fund (IMF) provided a World Economic Outlook (WEO) update maintaining its previous 2017 world economic growth forecast issued in October 2016 at 3.4 percent. The WEO update noted “After a lackluster outturn in 2016, economic activity is projected to pick up pace in 2017 and 2018, especially in emerging market and developing economies. However, there is a wide dispersion of possible outcomes around the projections, given uncertainty surrounding the policy stance of the incoming U.S. administration and its global ramifications.”

The WEO update projected that advanced economies, which represent our primary revenue markets, would grow at about 1.9 percent in 2017 and 2.0 percent in 2018, while the emerging and developing economies would grow at about 4.5 percent in 2017 and 4.8 percent in 2018.

During the past three years, the overall trend has been steady for our large license sales, with recognized license revenue of $1.0 million or greater on 18, 21 and 15 new contracts for 2016, 2015 and 2014, respectively. While we are encouraged by our 2016 and 2015 results, we, along with many of our customers, still remain cautious regarding the pace of global economic growth. We believe global 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 sales.

Revenue

License revenue: License revenue, a leading indicator of our business performance, is primarily derived from software license fees customers pay for supply chain solutions. In 2016, license revenue totaled $85.0 million, or 14% of total revenue, with gross margins of 87.3%. For the year ended December 31, 2016, Americas, EMEA, and APAC recognized $71.1 million, $9.2 million, and $4.7 million in license revenue, respectively. For the year ended December 31, 2016, the percentage mix of new to existing customers was approximately 35/65.

License revenue growth is influenced by the strength of general economic and business conditions and the competitive position of our software products. Our license revenue generally has long sales cycles. In addition, the timing of the closing of a few large license transactions can have a material impact on our license revenues, operating profit, operating margins and earnings per share. For example, $1.1 million of license revenue in 2016 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, Labor Management), Inventory optimization and Omni-channel 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 license 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 solution 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.

Services revenue: Our services business consists of professional services (consulting and customer training) and customer support services and software enhancements ("CSSE"). In 2016, our services revenue totaled $467.3 million, or 77% of total revenue, with gross margins of 57.7%. The Americas, EMEA, and APAC recognized $392.7 million, $55.2 million, and $19.4 million, respectively, in services revenue for the year ended December 31, 2016. Professional services totaled $333.4 million in 2016, accounted for approximately 71% of total services revenue and approximately 55% of total revenue. Our consolidated operating margin profile may be lower than those of various other technology companies due to our large services revenue mix as a percentage of total revenue. While we believe our services margins are very strong, they do lower our overall operating margin profile as services margins are inherently lower than license revenue margins.

At December 31, 2016, our professional services organization totaled approximately 2,010 employees, accounting for 67% 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 solution, 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 license revenue and customer upgrade cycles, which is 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.

For CSSE, 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. Our CSSE revenues totaled $133.9 million in 2016, representing approximately 29% of services revenue and approximately 22% of total revenue, respectively. The growth of CSSE revenues is influenced by: (1) new license revenue growth; (2) annual renewal of support contracts; (3) increase in customers through acquisitions; and (4) fluctuations in currency rates. 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%. CSSE revenue is generally paid in advance and recognized ratably over the term of the agreement, typically twelve months. CSSE renewal revenue is recognized over the renewal period and recognition is not initiated until payment is received from the customer.

Hardware and other revenue: Our hardware and other revenue totaled $52.3 million in 2016 representing 9% of total revenue with gross margins of 20.5%. 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.

Other revenue represents amounts associated with reimbursements from customers for out-of-pocket expenses. The total amount of expense reimbursement recorded to hardware and other revenue was $18.3 million, $20.2 million, and $18.9 million for 2016, 2015 and 2014, respectively.

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 the years ended December 31, 2016, 2015 and 2014 were $54.7 million, $53.9 million, and $49.0 million, respectively. At December 31, 2016, our R&D organization totaled approximately 680 employees, located in the U.S. and India.

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 solution 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 on 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 2016, we generated cash flow from operating activities of $139.3 million and have generated a cumulative total of $353.7 million for the three years ended December 31, 2016. Our cash and investments at December 31, 2016 totaled $95.6 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 funding investment in R&D and operations to drive earnings growth and repurchases of common stock.

During 2016, we repurchased approximately $158.4 million of Manhattan Associates' outstanding common stock under the share repurchase program approved by our Board of Directors throughout the year.

In 2017, we anticipate that our priorities for use of cash will be in hiring, developing sales and services resources and continued investment in product development 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. We do not anticipate any borrowing requirements in 2017 for general corporate purposes.

Full Year 2016 Financial Summary

- Diluted earnings per share for the twelve months ended December 31, 2016 was $1.72, compared to $1.40 for the twelve months ended December 31, 2015;
- Consolidated revenue for the twelve months ended December 31, 2016 was $604.6 million, compared to $556.4 million for the twelve months ended December 31, 2015. License revenue was $85.0 million for the twelve months ended December 31, 2016, compared to $78.6 million for the twelve months ended December 31, 2015;
- Operating income was $194.3 million for the twelve months ended December 31, 2016, compared to $161.4 million for the twelve months ended December 31, 2015;
- Operating margins for 2016 were 32.1% compared to operating margins of 29.0% in 2015;
- Cash flow from operations totaled $139.3 million for the full year 2016 compared to $120.2 million in 2015;
- Cash and investments on hand at December 31, 2016 was $95.6 million compared to $128.8 million at December 31, 2015;
- During the twelve months ended December 31, 2016, the Company repurchased approximately 2.8 million shares of Manhattan Associates common stock, reducing common shares outstanding by 3%, under the share repurchase program authorized by our Board of Directors, for a total investment of $158.4 million; and
- In January 2017, our Board of Directors authorized the Company to repurchase up to an aggregate of $50 million of the Company’s common stock.

Results of Operations

The following table summarizes selected Statement of Income data for the years ended December 31, 2016, 2015 and 2014.

	Year Ended December 31,			% Change vs. Prior Year	
	2016	2015	2014	2016	2015
	(in thousands)				
Revenue:					
Software license	$84,996	$78,615	$71,583	8%	10%
Services	467,286	428,078	376,023	9%	14%
Hardware and other	52,275	49,678	44,498	5%	12%
Total revenue	604,557	556,371	492,104	9%	13%
Costs and expenses:					
Cost of license	10,820	9,938	7,110	9%	40%
Cost of services	197,475	184,349	169,140	7%	9%
Cost of hardware and other	41,584	41,141	36,328	1%	13%
Research and development	54,736	53,859	48,953	2%	10%
Sales and marketing	48,223	48,615	52,617	-1%	-8%
General and administrative	48,322	49,259	44,455	-2%	11%
Depreciation and amortization	9,090	7,764	6,377	17%	22%
Total costs and expenses	410,250	394,925	364,980	4%	8%
Income from operations	$194,307	$161,446	$127,124	20%	27%
Operating margin	32.1%	29.0%	25.8%		

The Company has 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 geographical-based expenses include costs of personnel, direct sales, and marketing expenses, and general and administrative costs to support the business. There are certain corporate expenses included in the Americas segment that are not charged 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 the Company's India operations. During 2016, 2015, or 2014, we derived the majority of our revenues from sales to customers within our Americas segment. The following table summarizes revenue and operating profit by segment:

	Year Ended December 31,			% Change vs. Prior Year	
	2016	2015	2014	2016	2015
Revenue:	(in thousands)				
Software license					
Americas	$71,134	$65,307	$59,502	9%	10%
EMEA	9,187	9,566	7,505	-4%	27%
APAC	4,675	3,742	4,576	25%	-18%
Total software license	84,996	78,615	71,583	8%	10%
Services					
Americas	392,675	352,665	301,025	11%	17%
EMEA	55,240	58,030	51,440	-5%	13%
APAC	19,371	17,383	23,558	11%	-26%
Total services	467,286	428,078	376,023	9%	14%
Hardware and Other					
Americas	49,775	46,504	41,437	7%	12%
EMEA	1,855	2,480	1,910	-25%	30%
APAC	645	694	1,151	-7%	-40%
Total hardware and other	52,275	49,678	44,498	5%	12%
Total Revenue					
Americas	513,584	464,476	401,964	11%	16%
EMEA	66,282	70,076	60,855	-5%	15%
APAC	24,691	21,819	29,285	13%	-25%
Total revenue	$604,557	$556,371	$492,104	9%	13%
Operating income:					
Americas	$164,947	$133,823	$101,936	23%	31%
EMEA	22,060	22,310	15,313	-1%	46%
APAC	7,300	5,313	9,875	37%	-46%
Total operating income	$194,307	$161,446	$127,124	20%	27%

The consolidated results of our operations for the years ended December 31, 2016, 2015 and 2014 are discussed below.

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Revenue

Our revenue consists of fees generated from the licensing and hosting of software; fees from professional services, customer support services and software enhancements; hardware sales of complementary radio frequency and computer equipment; and other revenue representing amounts associated with reimbursements from customers for out-of-pocket expenses.

	Year Ended December 31,			% Change vs. Prior Year		% of Total Revenue		
	2016	2015	2014	2016	2015	2016	2015	2014
	(in thousands)							
Software license	$84,996	$78,615	$71,583	8%	10 %	14 %	14 %	15 %
Services	467,286	428,078	376,023	9%	14 %	77 %	77 %	76 %
Hardware and other	52,275	49,678	44,498	5%	12 %	9 %	9 %	9 %
Total revenue	$604,557	$556,371	$492,104	9%	13 %	100%	100 %	100 %

License revenue

Year 2016 compared with year 2015

License revenue increased $6.4 million, or 8%, to $85.0 million in 2016 compared to 2015. We completed eighteen and twenty-one large new deals greater than $1.0 million in 2016 and 2015, respectively. Our Americas and APAC license revenue increased $5.8 million and $0.9 million, respectively, while EMEA license revenue decreased $0.3 million over 2015.

The license sales percentage mix across our product suite in 2016 was approximately 60% warehouse management solutions and 40% non-warehouse management solutions. Our warehouse management solutions decreased $1.8 million, or 4%, in 2016 compared to 2015, and non-warehouse management solutions increased $8.2 million, or 29%, in 2016 over 2015.

Year 2015 compared with year 2014

License revenue increased $7.0 million, or 10%, to $78.6 million in 2015 compared to 2014. We completed twenty-one and fifteen large new deals greater than $1.0 million in 2015 and 2014, respectively. Our Americas and EMEA license revenue increased $5.8 million and $2.0 million, respectively, while APAC license revenue decreased $0.8 million over 2014.

The license sales percentage mix across our product suite in 2015 was approximately 65% warehouse management solutions and 35% non-warehouse management solutions. Our warehouse management solutions increased $10.0 million, or 25%, in 2015 compared to 2014, and non-warehouse management solutions decreased $3.0 million, or 9%, in 2015 over 2014.

Services revenue

Year 2016 compared with year 2015

Services revenue increased $39.2 million, or 9%, in 2016 compared to 2015 due to a $28.8 million, or 9%, increase in professional services revenue and a $10.4 million, or 8%, increase in CSSE revenue. The Americas and APAC segments increased $40.0 million and $2.0 million, respectively, while the EMEA segment decreased $2.8 million, compared to 2015. The increase in services revenue is primarily due to a combination of license deals signed and customer-specific initiatives in conjunction with customer upgrade activity.

Year 2015 compared with year 2014

Services revenue increased $52.1 million, or 14%, in 2015 compared to 2014 due to a $44.6 million, or 17%, increase in professional services revenue and a $7.5 million, or 6%, increase in CSSE revenue. The Americas and EMEA segments increased $51.6 million and $6.6 million, respectively, while the APAC segment decreased $6.1 million, compared to 2014. The increase in services revenue is primarily due to a combination of license deals signed and customer-specific initiatives in conjunction with customer upgrade activity.

Hardware and other

Sales of hardware increased $4.5 million to $34.0 million in 2016 compared to $29.5 million in 2015. Sales of hardware increased $3.9 million to $29.5 million in 2015 compared to $25.6 million in 2014. The majority of hardware sales are derived from our Americas segment. Sales of hardware are largely dependent upon customer-specific desires, which fluctuate. Other revenue represents reimbursements for professional service travel expenses that are required to be classified as revenue and are included in hardware and other revenue. Reimbursements by customers for out-of-pocket expenses were approximately $18.3 million, $20.2 million, and $18.9 million for 2016, 2015 and 2014, respectively.

Cost of Revenue

	Year Ended December 31,			% Change vs. Prior Year	
	2016	2015	2014	2016	2015
	(in thousands)				
Cost of software license	$10,820	$9,938	$7,110	9%	40%
Cost of services	197,475	184,349	169,140	7%	9%
Cost of hardware and other	41,584	41,141	36,328	1%	13%
Total cost of revenue	$249,879	$235,428	$212,578	6%	11%

Cost of License

Cost of license consists of the costs associated with software reproduction; hosting services; media, packaging and delivery, documentation, and other related costs; and royalties on third-party software sold with or as part of our products. In 2016, cost of license increased by $0.9 million, or 9% compared to 2015 principally due to a $1.2 million increase in cost of hosting offset by a $0.6 million decrease in cost of royalties over the prior year. In 2015, cost of license increased by $2.8 million, or 40% compared to 2014 principally due to a $1.7 million increase in cost of third-party software license fees and a $0.7 million increase in cost of hosting over the prior year.

Cost of Services

Year 2016 compared with year 2015

Cost of services consists primarily of salaries and other personnel-related expenses of employees dedicated to professional and technical services and customer support services. The $13.1 million, or 7%, increase in cost of services in 2016 compared to 2015 was principally due increased headcount to support business growth resulting in a $15.1 million increase in compensation, other personnel-related and travel expenses. These personnel and other services operating expense increases were offset by a $3.3 million decrease in performance-based compensation expense.

Year 2015 compared with year 2014

Cost of services consists primarily of salaries and other personnel-related expenses of employees dedicated to professional and technical services and customer support services. The $15.2 million, or 9%, increase in cost of services in 2015 compared to 2014 was principally due increased headcount to support business growth resulting in a $13.5 million increase in compensation, other personnel-related and travel expenses as well as a $1.0 million increase in performance-based compensation expense.

Cost of Hardware and other

In 2016, cost of hardware increased $2.2 million to $23.4 million from $21.2 million in 2015 on increased sales of hardware. In 2015, cost of hardware increased $3.5 million to $21.2 million from $17.7 million in 2014 on increased sales of hardware. Cost of hardware and other includes professional services billed travel expenses reimbursed by customers of approximately $18.2 million, $19.9 million, and $18.6 million for 2016, 2015 and 2014, respectively.

Operating Expenses

	Year Ended December 31,			% Change vs. Prior Year	
	2016	2015	2014	2016	2015
	(in thousands)				
Research and development	$54,736	$53,859	$48,953	2%	10%
Sales and marketing	48,223	48,615	52,617	-1%	-8%
General and administrative	48,322	49,259	44,455	-2%	11%
Depreciation and amortization	9,090	7,764	6,377	17%	22%
Operating expenses	$160,371	$159,497	$152,402	1%	5%

Research and Development

Our principal research and development (R&D) activities during 2016, 2015 and 2014 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 point-of-sale and tablet retailing.

For the years ended December 31, 2016, 2015 and 2014, 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 2016 compared with year 2015

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 2016 increased by $0.9 million, or 2%, compared to 2015. This increase is primarily due to a $2.1 million increase in compensation and other personnel-related expenses. The personnel and other R&D operating expenses were offset by a $1.8 million decrease in performance-based compensation expense.

Year 2015 compared with year 2014

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 2015 increased by $4.9 million, or 10%, compared to 2014. This increase is primarily due to a $3.4 million increase in compensation and other personnel-related expenses, a $0.6 million increase in temporary contracted personnel, and a $0.6 million increase in performance-based bonus expense.

Sales and Marketing

Year 2016 compared with year 2015

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 decreased by $0.4 million, or 1%, in 2016 compared to 2015.

Year 2015 compared with year 2014

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 decreased by $4.0 million, or 8%, in 2015 compared to 2014. This decrease was mainly attributable to the decrease in performance-based compensation expense of $3.7 million.

General and Administrative

Year 2016 compared with year 2015

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 administrative expenses. General and administrative expenses decreased $0.9 million, or 2%, in 2016 primarily attributable to a $1.0 million decrease in performance-based compensation expense.

Year 2015 compared with year 2014

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 administrative expenses. General and administrative expenses increased $4.8 million, or 11%, in 2015 primarily attributable to an increase of $3.6 million in compensation and other personnel-related expenses, and an increase of $1.1 million in professional fees.

Depreciation and Amortization

Depreciation expense amounted to $8.7 million, $7.3 million, and $6.2 million 2016, 2015 and 2014, respectively. Amortization of intangibles was immaterial in 2016, 2015 and 2014. We have recorded goodwill and other acquisition-related intangible assets as part of the purchase accounting associated with various acquisitions.

Operating Income

Operating income for the year ended December 31, 2016 increased $32.9 million to $194.3 million, compared to $161.4 million for the year ended December 31, 2015. Operating margins were 32.1% for 2016 versus 29.0% for 2015. Operating income and margin increased primarily due to strong revenue growth and expense discipline during the year ended December 31, 2016. The foreign currency translation effect for the year ended December 31, 2016 is immaterial. In 2016, operating income in the Americas and APAC segments increased by $31.1 million and $2.0 million, respectively, but decreased in the EMEA segment by $0.2 million.

Operating income for the year ended December 31, 2015 increased $34.3 million to $161.4 million, compared to $127.1 million for the year ended December 31, 2014. Operating margins were 29.0% for 2015 versus 25.8% for 2014. Operating income and margin increased primarily due to strong revenue growth and expense discipline during the year even though disadvantaged from unfavorable foreign currency translation effect of $2.1 million for the year ended December 31, 2015. The unfavorable foreign currency translation effect is primarily due to the weakening of the euro and British pound sterling versus the U.S. dollar during the year ended December 31, 2015. In 2015, operating income in the Americas and EMEA segments increased by $31.9 million and $7.0 million, respectively, but decreased in the APAC segment by $4.6 million.

Other Income and Income Taxes

	Year Ended December 31,			% Change vs. Prior Year	
	2016	2015	2014	2016	2015
Other income, net	$1,800	$1,395	$874	29%	60%
Income tax provision	71,873	59,366	45,998	21%	29%

Other Income, net

Other income, net primarily includes interest income, foreign currency gains and losses, and other non-operating expenses. Interest income was $1.2 million for the year ended December 31, 2016, and $1.3 million for both the years ended December 31, 2015 and 2014. The weighted-average interest rate earned on cash and investments was approximately 1% for the years ended December 31, 2016, 2015 and 2014. We recorded a net foreign currency gain of $0.6 million in 2016, and net foreign currency losses of $0.1 million and $0.4 million in 2015 and 2014, respectively. 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, Indian Rupee and Japanese Yen.

Income Tax Provision

Our effective income tax rates were 36.6%, 36.5%, and 35.9% in 2016, 2015 and 2014, 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 tax rate in 2015 increased from 2014 mainly due to increases in reserves for uncertain tax positions, partially offset by increases in estimated utilization of state tax credit carryforwards.

Liquidity and Capital Resources

During 2016, 2015 and 2014, we funded our business through cash generated from operations. Our cash and investments as of December 31, 2016 included $47.7 million held in the U.S. and $47.9 million held by our foreign subsidiaries. We believe that our cash balances in the U.S. are sufficient to fund our U.S. operations. In the future, if we elect to repatriate the unremitted earnings of our foreign subsidiaries in the form of dividends or otherwise, we would be subject to additional U.S. income taxes which would result in a higher effective tax rate. However, our intent is to indefinitely reinvest these funds outside of the U.S. and we do not have a current cash requirement need to repatriate cash to the U.S.

Our cash flow from operating activities totaled $139.3 million, $120.2 million, and $94.2 million in 2016, 2015 and 2014, 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 payments 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 2016 increased $19.1 million compared to 2015 primarily attributable to higher revenue and net earnings. Cash flow from operating activities for 2015 increased $26.0 million compared to 2014 primarily attributable to higher revenue and net earnings. Days sales outstanding was 63, 63 and 61 at December 31, 2016, 2015 and 2014, respectively, reflecting solid cash collections.

Our cash flow from investing activities totaled $3.4 million in 2016. Our investing activities used cash of $13.5 million and $12.7 million in 2015 and 2014, respectively. The cash flow from investing activities for the year ended December 31, 2016 was primarily attributable to net maturities of investments of $10.2 million offset by capital expenditures of $6.8 million to support company growth. The use of cash for investing activities for the year ended December 31, 2015 was for capital expenditures of $11.5 million to support company growth and net purchases of $2.0 million in investments. The use of cash for investing activities for the year ended December 31, 2014 was for capital expenditures of $9.4 million, $2.8 million payment in connection with the asset acquisition of Global Bay Mobile Technologies, and net purchases of $0.5 million in investments.

Our financing activities used cash of approximately $162.7 million, $102.3 million, and $89.1 million in 2016, 2015 and 2014, respectively. The principal use of cash for financing activities for the year ended December 31, 2016 was to purchase approximately $167.9 million of our common stock, including $9.5 million for shares withheld for taxes due upon vesting of restricted stock, partially offset by a $5.2 million excess tax benefit related to the exercise of stock options and vesting of restricted stock awards. The principal use of cash for financing activities for the year ended December 31, 2015 was to purchase approximately $112.1 million of our common stock, including $10.5 million for shares withheld for taxes due upon vesting of restricted stock, partially offset by proceeds generated from options exercised of $0.7 million and a $9.1 million excess tax benefit related to the exercise of stock options and vesting of restricted stock awards. The principal use of cash for financing activities for the year ended December 31, 2014 was to purchase approximately $99.2 million of our common stock, including $8.1 million for shares withheld for taxes due upon vesting of restricted stock, partially offset by proceeds generated from options exercised of $1.6 million and a $8.6 million excess tax benefit related to the exercise of stock options and vesting of restricted stock awards. In January 2017, our Board of Directors authorized the Company to repurchase up to an aggregate of $50 million of the Company's 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 2017, 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 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 2017 for general corporate purposes.

New Accounting Pronouncements

Revenue Recognition

In May 2014, the FASB issued ASU 2014-09, Revenue Recognition – Revenue from Contracts with Customers (Topic 606), which will replace substantially all current revenue recognition guidance once it becomes effective. 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. The new standard is less prescriptive and may require software entities to use more judgment and estimates in the revenue recognition process than are required under existing revenue guidance.

In March 2016, the FASB issued ASU 2016-08, Revenue from Contracts with Customers (Topic 606) – Principal versus Agent Considerations, which clarifies the implementation guidance for principal versus agent considerations in ASU 2014-09. In April 2016, the FASB issued ASU 2016-10, Revenue from Contracts with Customers (Topic 606) – Identifying Performance Obligations and Licensing, which amends the guidance in ASU 2014-09 related to identifying performance obligations and accounting for licenses of intellectual property. In May 2016, the FASB issued ASU 2016-12, Revenue from Contracts with Customers (Topic 606) – Narrow-Scope Improvements and Practical Expedients, which clarifies the following aspects in ASU 2014-09: collectability, presentation of sales taxes and other similar taxes collected from customers, noncash considerations, contract modifications at transition, completed contracts at transition, and technical correction. We must adopt ASU 2016-08, ASU 2016-10 and ASU 2016-12 with ASU 2014-09, which is effective for annual and interim periods beginning after December 15, 2017.

The new revenue standard may be applied using either of the following transition methods: (1) a full retrospective approach reflecting the application of the standard in each prior reporting period with the option to elect certain practical expedients, or (2) a modified retrospective approach with the cumulative effect of initially adopting the standard recognized at the date of adoption (which includes additional footnote disclosures). We will adopt the standard in the first quarter of 2018 and preliminarily expect to use the modified prospective method. However, we are continuing to evaluate the impact of the standard, and our adoption method is subject to change. Currently, we are in the process of reviewing our historical contracts to quantify the impact that the adoption of the standard will have on specific performance obligations. We are also continuing to evaluate the impact of the standard on our recognition of costs related to obtaining customer contracts (namely sales commissions).

Balance Sheet Classification of Deferred Taxes

In November 2015, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2015-17, Balance Sheet Classification of Deferred Taxes, to simplify the presentation of deferred income taxes. The ASU requires that all deferred tax assets and liabilities, along with any related valuation allowance, be classified as noncurrent on the balance sheet. The guidance does not change the existing requirement that only permits offsetting within a tax-paying component of an entity. This guidance is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods, but may be adopted earlier, and may be applied either prospectively or retrospectively. We adopted this guidance in the first three months ended March 31, 2016 reporting on a retrospective basis. Accordingly, we reclassified current deferred taxes to noncurrent on our December 31, 2015 consolidated balance sheet, which increased noncurrent deferred tax assets $4.6 million and decreased noncurrent deferred tax liabilities $5.7 million.

Leases

In February 2016, the FASB issued ASU 2016-02, Leases, 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 ASU will require both types of leases to be recognized on the balance sheet. The ASU 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. For public companies, this guidance is effective for annual periods beginning after December 15, 2018, and interim periods within those annual periods, but may be adopted earlier. We are currently evaluating the impact that the adoption of this standard will have on our Consolidated Financial Statements.

Stock Compensation

In March 2016, the FASB issued ASU 2016-09, Compensation – Stock Compensation: Improvements to Employee Share-Based Payment Accounting, to improve the accounting for employee share-based payments. Under the new guidance, companies will no longer record excess tax benefits and certain tax deficiencies in additional paid-in capital. Instead, all excess tax benefits and tax deficiencies should be recognized as income tax expense or benefit in the income statement, and additional paid-in capital pools will be eliminated. The guidance requires companies to present excess tax benefits as an operating activity on the statement of cash flows rather than as a financing activity. It also will allow an employer to repurchase more of an employee's shares than it can today for tax withholding purposes without triggering liability accounting and to make a policy election to account for forfeitures as they occur. The new guidance will require an employer to classify the cash paid to a tax authority when shares are withheld to satisfy its statutory income tax withholding obligation as a financing activity on its statement of cash flows. Companies will have to elect whether to account for forfeitures of share-based payments by (1) recognizing forfeitures of awards as they occur (e.g., when an award does not vest because the employee leaves the company) or (2) estimating the number of awards expected to be forfeited and adjusting the estimate when it is likely to change, as is currently required. For public companies, this guidance is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods, but may be adopted earlier. We are adopting this ASU in the first quarter of 2017. We plan to account for forfeitures as incurred upon adoption of this guidance. In each of the years ended December 31, 2016, 2015 and 2014, we have recorded excess tax benefits of $5.2 million, $9.1 million, and $8.6 million as a component of additional paid in capital. In accordance with this ASU, comparable amounts for future periods related to the difference between the fair value of a restricted stock unit (RSU) on the grant date and the fair value of a RSU on the vest date will be recorded as a discrete benefit or expense to the current income tax provision in the period in which the RSU vests. A majority of the future amounts to be recorded would likely occur during the first quarter consistent with the vesting of a majority of RSU grants.

Going Concern

In August 2014, the FASB issued ASU 2014-15, Presentation of Financial Statements – Going Concern. The new guidance requires management to evaluate whether there are conditions and events that raise substantial doubt about an entity’s ability to continue as a going concern within one year after the financial statements are issued (or available to be issued when applicable). Management will be required to make this evaluation for both annual and interim reporting periods. When management identifies events or conditions that indicate that it is probable that the entity will be unable to meet its obligations as they become due, the standard allows management to consider the mitigating effect of its plans to determine whether substantial doubt is alleviated. Management will have to make certain disclosures if it concludes that substantial doubt exists or when its plans alleviate substantial doubt about the entity’s ability to continue as a going concern. This guidance is effective for annual periods ending after December 15, 2016, and for annual periods and interim periods thereafter, but may be adopted earlier. We adopted this guidance during the three months period ended December 31, 2016. The adoption did not impact our financial statements.

Off-Balance Sheet Arrangements and Aggregate Contractual Obligations

Our principal commitments as of December 31, 2016 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 SEC rules.

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 $6.8 million, $6.3 million, and $6.3 million during 2016, 2015 and 2014, respectively.

The following table summarizes our contractual commitments as of December 31, 2016 (in thousands):

	Total	2017	2018	2019	2020	2021	Thereafter
Operating Lease Obligations	$45,888	$7,756	$6,856	$5,416	$4,707	$4,647	$ 16,506

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 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, 2016.

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 claim 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, 2016.

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. generally accepted accounting principles (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 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

The Company's revenue consists of fees from the licensing and hosting of software (collectively included in "Software license" revenue in the Consolidated Statements of Income), fees from implementation and training services (collectively, "professional services") and customer support services and software enhancements (collectively with professional services revenue included in "Services" revenue in the Consolidated Statements of Income), and sales of hardware and other revenue, which consists of reimbursements of out-of-pocket expenses incurred in connection with our professional services (collectively included in "Hardware and other" revenue in the Consolidated Statements of Income). All revenue is recognized net of any related sales taxes.

The Company recognizes license revenue when the following criteria are met: (1) a signed contract is obtained covering all elements of the arrangement, (2) delivery of the product has occurred, (3) the license fee is fixed or determinable, and (4) collection is probable. Revenue recognition for software with multiple-element arrangements requires recognition of revenue using the "residual method" when (a) there is vendor-specific objective evidence (VSOE) of the fair values of all undelivered elements in a multiple-element arrangement that is not accounted for using long-term contract accounting, (b) VSOE of fair value does not exist for one or more of the delivered elements in the arrangement, and (c) all other applicable revenue-recognition criteria for software revenue recognition are satisfied. For those contracts that contain significant customization or modifications, license revenue is recognized using contract accounting.

The Company allocates revenue to customer support services and software enhancements and any other undelivered elements of the arrangement based on VSOE of fair value of each element, and such amounts are deferred until the applicable delivery criteria and other revenue recognition criteria have been met. The balance of the revenue, net of any discounts inherent in the arrangement, is recognized at the outset of the arrangement using the residual method as the product licenses are delivered. If the Company cannot objectively determine the fair value of each undelivered element based on the VSOE of fair value, the Company defers revenue recognition until all elements are delivered, all services have been performed, or until fair value can be objectively determined. The Company must apply judgment in determining all elements of the arrangement and in determining the VSOE of fair value for each element, considering the price charged for each product on a stand-alone basis or applicable renewal rates. For arrangements that include future software functionality deliverables, the Company accounts for these deliverables as a separate element of the arrangement. Because the Company does not sell these deliverables on a standalone basis, the Company is not able to establish VSOE of fair value of these deliverables. As a result, the Company defers all revenue under the arrangement until the future functionality has been delivered to the customer.

Payment terms for the Company's software licenses vary. Each contract is evaluated individually to determine whether the fees in the contract are fixed or determinable and whether collectability is probable. Judgment is required in assessing the probability of collection, which is generally based on evaluation of customer-specific information, historical collection experience, and economic market conditions. If market conditions decline, or if the financial conditions of customers deteriorate, the Company may be unable to determine that collectability is probable, and the Company could be required to defer the recognition of revenue until the Company receives customer payments. The Company has an established history of collecting under the terms of its software license contracts without providing refunds or concessions to its customers. Therefore, the Company has determined that the presence of payment terms that extend beyond contract execution in a particular contract do not preclude the conclusion that the fees in the contract are fixed or determinable. Although infrequent, when payment terms in a contract extend beyond our standard terms or twelve months, the Company has determined that such fees are not fixed or determinable and recognizes revenue as payments become due provided that all other conditions for revenue recognition have been met.

The Company’s services revenue consists of fees generated from professional services and customer support and software enhancements related to the Company’s software products. Professional services include system planning, design, configuration, testing, and other software implementation support, and are not typically essential to the functionality of the software. Fees from professional services performed by the Company are separately priced and are generally billed on an hourly basis, and revenue is recognized as the services are performed. In certain situations, professional services are rendered under agreements in which billings are limited to contractual maximums or based upon a fixed fee for portions of or all of the engagement. Revenue related to fixed-fee-based contracts is recognized on a proportional performance basis based on the hours incurred on discrete projects within an overall services arrangement. The Company has determined that output measures, or services delivered, approximate the input measures associated with fixed-fee services arrangements. Project losses are provided for in their entirety in the period in which they become known. Revenue related to customer support services and software enhancements is generally paid in advance and recognized ratably over the term of the agreement, typically twelve months.

Hardware and other revenue is generated from the resale of a variety of hardware products, developed and manufactured by third parties, that are integrated with and complementary to the Company’s software solutions. As part of a complete solution, the Company’s customers periodically purchase hardware from the Company for use with the software licenses purchased from the Company. These products include computer hardware, radio frequency terminal networks, radio frequency identification (RFID) chip readers, bar code printers and scanners, and other peripherals. Hardware revenue is recognized upon shipment to the customer when title passes. The Company generally purchases hardware from the Company’s vendors only after receiving an order from a customer. As a result, the Company generally does not maintain hardware inventory.

In accordance with the other presentation matters within the Revenue Recognition Topic of the ASC, the Company recognizes amounts associated with reimbursements from customers for out-of-pocket expenses as revenue. Such amounts have been included in “Hardware and other” revenue in the Condensed Consolidated Statements of Income. The total amount of expense reimbursement recorded to revenue was $18.3 million, $20.2 million, and $18.9 million for 2016, 2015 and 2014, respectively.

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 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.

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, Australia, China, Japan, Singapore, 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 a foreign exchange gain of $0.6 million in 2016, and foreign exchange losses of $0.1 million and $0.4 million in 2015 and 2014, respectively. 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, 2016 relative to the U.S. dollar would result in a change of approximately $0.3 million in the reported foreign currency gain. A fluctuation of 10% in the period end exchange rates at December 31, 2015 relative to the U.S. dollar would result in a change of approximately $0.2 million in the reported foreign currency loss.

Interest Rates

We currently invest our cash in a variety of financial instruments, including taxable floating rate obligations in money market funds and certificate of deposits. These investments are mainly denominated in U.S. dollars. Cash balances in foreign currencies overseas, except for India, are derived from business operations. India operations are funded by the U.S. At December 31, 2016, our cash, cash equivalents, and investment balances totaled $95.6 million, of which all is highly liquid. Our cash equivalents balance at December 31, 2016 was $44.2 million. Cash equivalents consist of highly-liquid money market funds and certificates of deposits with maturities of less than three months when purchased.

Investments in both fixed rate and floating rate interest-earning instruments carry interest rate risk. 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 and investment securities was approximately 1% for the years ended December 31, 2016 and 2015. The fair value of cash equivalents and investments held at December 31, 2016 and 2015 was $44.2 million and $50.0 million, respectively. Based on the average investments outstanding during 2016 and 2015, 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

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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 2016 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, 2016 was effective.

Ernst & Young LLP, the independent registered public accounting firm that audited the Company's financial statements for the year ended December 31, 2016, has audited the Company's internal control over financial reporting as of December 31, 2016 and has issued a report regarding the Company's internal control over financial reporting appearing on page 39, which expresses an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2016.

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

February 3, 2017

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

February 3, 2017

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The Board of Directors and Shareholders

Manhattan Associates, Inc. and Subsidiaries

We have audited Manhattan Associates, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2016, 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). Manhattan Associates, Inc. and subsidiaries' 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 conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). 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 audit provides a reasonable basis for our opinion.

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.

In our opinion, Manhattan Associates, Inc. and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Manhattan Associates, Inc. and subsidiaries as of December 31, 2016 and 2015, and 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, 2016 of Manhattan Associates, Inc. and subsidiaries, and our report dated February 3, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Atlanta, Georgia

February 3, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

ON THE CONSOLIDATED FINANCIAL STATEMENTS

The Board of Directors and Shareholders

Manhattan Associates, Inc. and Subsidiaries

We have audited the accompanying consolidated balance sheets of Manhattan Associates, Inc. and subsidiaries as of December 31, 2016 and 2015, and 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, 2016. Our audits also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Manhattan Associates, Inc. and subsidiaries at December 31, 2016 and 2015, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Manhattan Associates, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2016, 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 3, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Atlanta, Georgia

February 3, 2017

MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES

Consolidated Statements of Income

(in thousands, except per share amounts)

	Year Ended December 31,		
	2016	2015	2014
Revenue:			
Software license	$84,996	$78,615	$71,583
Services	467,286	428,078	376,023
Hardware and other	52,275	49,678	44,498
Total revenue	604,557	556,371	492,104
Costs and expenses:			
Cost of license	10,820	9,938	7,110
Cost of services	197,475	184,349	169,140
Cost of hardware and other	41,584	41,141	36,328
Research and development	54,736	53,859	48,953
Sales and marketing	48,223	48,615	52,617
General and administrative	48,322	49,259	44,455
Depreciation and amortization	9,090	7,764	6,377
Total costs and expenses	410,250	394,925	364,980
Operating income	194,307	161,446	127,124
Interest income	1,161	1,331	1,268
Other income (loss), net	639	64	(394)
Income before income taxes	196,107	162,841	127,998
Income tax provision	71,873	59,366	45,998
Net income	$124,234	$103,475	$82,000
Basic earnings per share	$1.73	$1.41	$1.09
Diluted earnings per share	$1.72	$1.40	$1.08