

Annual Report 2022



Executive Officers

Eddie Capel
President and Chief Executive Officer

Stewart Gantt
Executive Vice President,
Professional Services

Bob Howell
Executive Vice President, Americas

Dennis Story
Executive Vice President,
Chief Financial Officer and Treasurer

Linda Pinne
Senior Vice President,
Global Corporate Controller and
Chief Accounting Officer

Bruce Richards
Senior Vice President,
Chief Legal Officer and Secretary

Board of Directors

John J. Huntz, Jr.
Chairman of the Board of Directors
Managing Director
Huntz & Co., LLC

Eddie Capel
Director
President and Chief Executive Officer
Manhattan Associates, Inc.

Edmond I. Eger III
Director
Chief Executive Officer
Rewards Network Establishment
Services, Inc.

Linda T. Hollembaek
Director
Former Senior Vice President,
Integration Management Officer
Lexmark International, Inc.

Kimberly A. Kuryea
Director
Senior Vice President,
Human Resources and Administration
General Dynamics Corporation

Charles E. Moran
Director
Former Chairman and
Chief Executive Officer
Skillsoft Corporation

Thomas E. Noonan
Director
General Partner
TechOperators LLC

Deepak Raghavan, Ph.D.
Director
Co-founder
Manhattan Associates, Inc.
Professor of Practice,
Physics and Astronomy
Georgia State University





FELLOW SHAREHOLDERS,

What does success look like?

Is it revenue growth? Financial stability? Could it be market leadership? Or perhaps world-class innovation?

For Manhattan in 2022, it was all of the above. By virtually any measure, the company had arguably the best year in our history. As we reached the end of our five-year plan to become a cloud-first organization, our customers, our revenues, and the industry at large confirmed that it was indeed the appropriate strategy.

Five or six years ago we saw that the relationships across the supply chain — between manufacturers, wholesalers, retailers, associates and customers — were radically changing. There was a growing demand for greater speed, efficiency, agility and innovation. Monolithic legacy systems were never going to be able to meet the needs of unified global commerce. Only a modern, cloud-native approach, one that was fully extensible, always current, and continuously imbued with new capabilities, would empower the marketplace with the solutions it needed.

A half-decade into our transitional journey and we were able to deliver another record year in 2022. In fact, three of the past five years produced record revenues, as well as strong operating earnings. This remarkable performance, amidst the long tail of the global pandemic, is a testament both to the strength of our technology and our team's dedication and resilience. Adoption of our Manhattan Active® cloud solutions continues to increase nicely, with cloud revenue up 44% over 2021. It now represents nearly 90% of our total software revenue.

Diving a little deeper into the numbers, in 2022 we set a new, full-year, total revenue record of \$767 million — a 16% increase — led by strong demand for our solutions. In addition, we set all-time records in cashflow, earnings per share and RPO (Remaining Performance Obligation). We strive for our results to be balanced between revenue growth and profitability and we believe that our performance has created a healthy combination that compares favorably to the “Rule of 40.” RPO, the leading indicator of our growth, totaled \$1.05 billion at year end — up 50% over 2021 — and we ended 2022 with \$225 million in cash reserves and \$0 debt.

As we enter 2023, we anticipate that Manhattan is well positioned to achieve another record year.

We believe that we maintain a clear technology advantage relative to our competition, and as you know, the past few years have shone a spotlight on the importance of supply chains. Organizations have reacted by devoting more focus and more spend to upgrading and optimizing their capabilities. Our consistent investment strategy has created an opportunity for us to capitalize on the near-universal need for modern, adaptable, supply chain solutions.

Demand is high for Manhattan's flagship products. We have signed approximately 100 customers across 12 countries for Manhattan Active Warehouse Management alone — all in less than two years. It's encouraging that almost 50% of those deals are with brands that are new to the Manhattan family. In transportation, the market has taken a strong interest in Manhattan Active Transportation Management, which launched a year after Manhattan Active Warehouse Management, in May of 2021. We are closing deals and filling the pipeline to capture even more market share this year. Manhattan Active Omni continues to be a leader in the global market and our more recently released retail Point of Sale and store systems solutions are picking up some very nice momentum.

True to the Manhattan spirit, we have no plans to rest. In the coming year, we plan to increase our R&D investment to about \$110 million. This commitment to innovation is fuel for our future success, allowing us to develop ambitious new capabilities that solve emerging market needs.

As we see it, global conditions, market demand and our business strategy are all in alignment. Because we engineered Manhattan Active applications from the ground up as truly cloud native, they're able to drive meaningfully different business outcomes for our customers. One of the most important — and differentiated — ways is by enabling real-time process agility with an ability to react to instantaneous changes. Driven by advanced, underlying technology across WMS, TMS and OMS, our solutions are built to adapt in real time to meet changing market needs.

That could mean empowering a consumer to change an order's delivery location just hours after placing it, or a business customer to modify quantities or add products to an order that's already deep into a fulfillment cycle. Advanced agility can also bring the ability to manage change in operational factors like early or late shipments, volatility in labor availability, or unpredictable order volumes, in meaningful ways.

With all our major products now on the same revolutionary, cloud-native platform, going forward we anticipate a growing need — and desire from our markets — for the adaptability and unification that only Manhattan is at the forefront of offering.

It's a very exciting time to be leading in the supply chain technology market, and the potential advances extend well beyond running in the cloud. Manhattan Active applications use myriad optimization techniques, including machine learning, heuristics and other forms of contextual and generative artificial intelligence, to ensure our customers are maximizing profitability and precision on every element of their supply chains.

But beyond our technology, products and differentiated capabilities, I believe the secret to Manhattan's success is our culture. Time and again, our global teams inspire awe at their ability to execute and support customers in an ever-changing landscape. Much of that is thanks to hiring and retaining the industry's most experienced and talented workforce. This coming year, we will keep investing in our people, with a goal of adding about 500 new team members to meet our continuing growth aspirations and market demand.

As a progressive, people-first organization, we are always aware of the complex cultural and socioeconomic changes occurring in our world. We will continually reevaluate and be ready to adapt our corporate practices to match — and where we can help drive — the positive transformations occurring in the world today.

At Manhattan, our purpose is to create possibilities that move life and commerce forward. As we drive innovation that fuels supply chain modernization and transforms customer experiences, we also feel an obligation to the greater good. That means a continued dedication to the environment, supporting a diverse and inclusive workplace, and strengthening the communities where we live and work.

Last year we committed to expanding our focus on Environmental, Social, and Governance (ESG) matters. I continue to spearhead a cross-functional, ESG steering committee that is overseen by our Board of Directors. In 2022, we launched our ESG-specific website and published our inaugural ESG Disclosure Summary and we currently hold an A rating from MSCI.

As I reflect on the many successes at Manhattan, I am humbled at the opportunity to lead your company. I truly value both the efforts of our growing employee family and your investment in the organization as shareholders. Thank you for continuing this journey with us. We are gratified that 2022 was another record year. I feel confident in saying that our financial strength and strategy, and your support, position us well in 2023 and into the future. Onward and upward.

A handwritten signature in black ink that reads "E. Capel." The signature is fluid and cursive, with a large "E" and a stylized "Capel" followed by a period.

Eddie Capel
President and Chief Executive Officer





10K



**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, 2022

OR

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

For the transition period from _____ to _____

Commission File Number: 000-23999

Manhattan Associates, Inc.

(Exact name of registrant as specified in its charter)

Georgia
(State or other jurisdiction of
incorporation or organization+)

2300 Windy Ridge Parkway, Tenth Floor
Atlanta, Georgia
(Address of principal executive offices)

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

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

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

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

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to § 240.10D-1(b). ☐

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, 2022 was \$7,187,541,590, which was calculated based upon a closing sales price of \$114.60 per share of the Common Stock as reported by the Nasdaq Global Select Market on the same day. As of January 31, 2023, the Registrant had outstanding 62,495,971 shares of Common Stock.

DOCUMENTS INCORPORATED BY REFERENCE

The Registrant's definitive Proxy Statement for the Annual Meeting of Shareholders to be held May 11, 2023 is incorporated by reference in Part III of this Form 10-K to the extent stated herein.

Auditor Firm Id: 42

Auditor Name: Ernst & Young

Auditor Location: Atlanta, GA

MANHATTAN ASSOCIATES, INC.
Annual Report on Form 10-K
For the Fiscal Year Ended December 31, 2022
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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, selling, general and administrative activities, and liquidity and capital needs and resources. When used in this Annual Report, on Form 10-K (this “Form 10-K”) the words “may,” “expect,” “forecast,” “anticipate,” “intend,” “plan,” “believe,” “could,” “seek,” “project,” “estimate,” and similar expressions are generally intended to identify forward-looking statements. Undue reliance should not be placed on these forward-looking statements, which reflect opinions only as of the date of this Form 10-K. Such forward-looking statements are subject to risks, uncertainties, and other factors that could cause actual results to differ materially from future results expressed or implied by such forward-looking statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and involve risks and uncertainties, and that actual results may differ materially from those contemplated by such forward-looking statements.

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

- ongoing disruption and transformation in our vertical markets, including a major public health concern such as the COVID-19 pandemic;
- general economic, political and market conditions, including inflation;
- our ability to attract and retain highly skilled employees;
- competition;
- our dependence on a single line of business;
- our dependence on generating revenue from cloud subscriptions and software licenses to drive business;
- undetected errors or “bugs” in our software;
- the risk of defects, delays or interruptions in our cloud subscription services;
- possible compromises of our data protection and IT security measures;
- risks associated with large system implementations;
- possible liability to customers if our products fail;
- the requirement to maintain high quality professional service capabilities;
- the risks of international operations, including foreign currency exchange risk;
- the possibility that research and developments investments may not yield sufficient returns;
- the long sales cycle associated with our products;
- the difficulty of predicting operating results;
- the need to continually improve our technology;
- risks associated with managing growth;
- reliance on third party and open source software;
- the need for our products to interoperate with other systems;
- the need to protect our intellectual property, and our exposure to intellectual property claims of others;
- the possible effects on international commerce of new or increased tariffs, or a “trade war;” and
- other risks described under the heading “Risk Factors” in Part I, Item 1A of this Form 10-K, as there may be updated from time to time in subsequent documents that we file with the Security and Exchange Commission.

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

PART I

Item 1. *Business*

Overview

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

We develop, sell, deploy, service and maintain software solutions designed to manage supply chains, inventory and omnichannel operations for retailers, wholesalers, manufacturers, logistics providers and other organizations. Our customers include many of the world’s premier and most profitable brands. Our Manhattan Active® applications are run in the cloud and delivered as subscription-based software as a service (SaaS), and its architecture is highly differentiated among enterprise application providers, particularly within the Omni Channel and Supply Chain categories. Our microservice based architecture delivers a versionless yet highly extensible experience for our customers. We offer our customers access to new innovation on a quarterly basis, ensuring all customers are running on a single fully up-to-date codebase. Manhattan Active also provides zero downtime updates, so access to innovation is delivered seamlessly into customer environments without the need for planned maintenance windows.

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

- **Supply Chain** - We provide companies the tools needed to manage distribution and optimize transportation costs throughout their entire commercial network. Manhattan’s Warehouse Management solutions are widely regarded as industry-leading systems designed to optimize productivity and throughput in distribution centers and warehouses around the world. Our software helps optimize fulfillment models to support our customers across a wide range of channels and fulfillment methods. Likewise, we design our offerings with the aim of providing shippers and carriers the most comprehensive transportation management solutions in the market. This includes software to help them move freight via the most cost-effective means possible while also meeting service-level expectations, to model their transportation network, and to automate the procurement-to-pay process.
- **Omnichannel** - Meeting ever-evolving consumer expectations of service, inventory availability, and delivery convenience is a challenge every merchant must meet head on. Manhattan’s Omnichannel solutions provide an operating platform for digital commerce, retailers, and wholesale businesses. Comprising Order Management, Store Inventory Fulfillment, Call Center, Point of Sale, and Customer Engagement as its core applications, Manhattan Omnichannel solutions provide CRM capabilities for contact center agents; end-to-end process enablement for store associates, and enterprise-wide inventory availability determination, order fulfillment optimization, and point of sale capabilities.
- **Inventory** – Manhattan’s solutions provide distributors of finished goods (apparel, food, auto parts, pharmaceuticals, etc.) the ability to forecast demand, determine when, where and how much inventory is needed, and translate this into a profitable inventory buying plan. These areas are ever more complex and critical to profitability as more wholesalers and retailers engage in omnichannel operations. Through the use of advanced science and sophisticated analytics, customer service level is maximized with the minimum necessary inventory investment. Industry changes driven by omnichannel retail, pharmaceutical regulations and other trends make this an area of particular need for many retailers and wholesale distributors.

Manhattan Associates’ Software Solution Portfolios

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

- **Industry Leading Feature Function** – Manhattan solutions are consistently rated by customers and industry analysts alike as providing the most comprehensive and innovative feature functionality in the market. From warehouse management to point of sale, our solutions are consistently at the top of the market with respect to configurability, capability and usability. Customers choose Manhattan applications to solve the industry’s most complex supply chain problems. Our combination of deep domain expertise, an in-house data science and operations research team, and a specialized user experience team combine to differentiate Manhattan solutions.
- **Solution Unification** – Manhattan solutions are organized into three groups: omni-channel, supply chain, and inventory. Each one of these groups are engineered to provide cross-application benefit that simplifies and improves operations within those three areas. This approach significantly reduces complexity, maintenance and application risk for our customers, providing an

expanded set of so-called end-to-end capabilities. As complexity continues to grow for our customers, Manhattan provides value by eliminating the need to design, build and maintain complex system to system integration.

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

- **Distribution Management** - These applications comprise Manhattan's Warehouse Management Solutions (WMS) commonly used to manage the complexity of the modern distribution center. WMS manages the flow of goods and information across the distribution center. WMS is now delivered for new and upgrading customers in the form of Manhattan Active Warehouse Management (MAWM), a cloud native and versionless application that delivers new innovation on a quarterly basis. Manhattan Active WM runs on Google Cloud Platform, is offered exclusively via subscription, and includes state of the art fulfillment optimization technology, a consumer grade mobile app experience for the associate; and embedded gamification capabilities to improve associate engagement and performance. Manhattan Active WM is fully configurable and technically extensible, meaning customers can build their own componentry to work alongside our base application. Manhattan Active WM also embeds labor management and slotting optimization capabilities. Manhattan's WMS customers benefit from its embedded warehouse execution system that coordinates the interaction between automation, robotics and labor for maximum efficiency. Manhattan's WMS also enables the efficient utilization of a single distribution center for direct-to-consumer, retail replenishment and high-volume wholesale fulfillment. Our WMS provides the customer the most productive operation that can scale to meet the highest demands during peak season while operating effectively and profitably throughout the course of the year.
- **Transportation Management** - Organizations today face a complex transportation environment with ever-changing demands driven by macro-economic trends and governmental regulations. Manhattan's Transportation Management Solutions (TMS) are designed to help shippers navigate their way through these demands while meeting customer service expectations at the lowest possible freight costs. TMS components include procurement and modeling tools to setup a successful network, along with planning, execution and settlement tools to manage day-to-day transportation requirements. Our TMS can also connect shippers with a network of partners that can increase shipping capacity on an as-needed basis. Manhattan Carrier is a suite of solutions built specifically to help motor carriers optimize load assignments, minimize fuel costs, manage drivers' hours of service and accommodate demand fluctuations.
- **Visibility** - Visibility into the movement of goods between locations in the supply chain and outside the enterprise's realm of control is crucial to effective supply chain management. Manhattan provides best in class visibility and event management tools that not only alerts our customer when events occur in the global supply chain, but also when they don't occur (such as missing a vessel overseas), as that can have a cascading effect on production lines, freight and most importantly, customer commitments.

Manhattan SCALETM (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 solutions leverage a common platform, they 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.

SCALE is now also available as Manhattan Active SCALE, delivered in the cloud on Microsoft's Azure platform. Manhattan Active SCALE customers receive new capability on an annual basis and enjoy full configurability and elements of technical extensibility even when delivered on Azure. We continue to offer SCALE on premise via perpetual licenses or via the cloud on a subscription basis as Manhattan Active SCALE.

Omnichannel Solutions

As omnichannel retail has placed new demands on organizations, it has also created new software solution needs. These range from the ability to leverage inventory across the entire network to meet any demand, to providing store associates and call center representatives the means to take advantage of the available inventory. Our Manhattan Active Omni set of solutions brings together Order Management, Store Inventory & Fulfillment, Point of Sale and Customer Engagement tools into a single application built on a shared, cloud-native, microservices platform. This architecture enables our customers to more easily expand their systems to include more capabilities and quarterly product enhancements while always maintaining their customizations.

- **Enterprise Omnichannel Solutions** - There is a wide range of new capabilities that must be leveraged at a corporate or ‘central’ level in retail today to enable best-in-class customer service, full inventory visibility, direct to client distribution and seamless fulfillment operations. Our goal is to enable an omnichannel commerce platform that can be tapped into by any selling system—such as webstore, ERP, point-of-sale, call center, and mobile app, to more cost-effectively promise and then meet delivery dates. 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 other fulfillment locations in the network. Enterprise Order Management merges this inventory availability data with demand feeds from across the organization to match supply with demand satisfying customer delivery expectations while striving to maximize revenue and profitability. Finally, Manhattan offers a unique Customer Engagement solution that enables contact center associates to see a holistic view of the customer, including a complete customer sales and interaction history, to better satisfy shopper needs while optimizing potential revenue and profit opportunities through new orders, exchanges or a returns. Manhattan Active Omni now also includes a set of Digital Self-Service capabilities, allowing consumers to manage their orders after they have placed them.
- **Omnichannel Solutions for the Store** - As the consumer enters the store with more information than ever, it is vital to equip the sales associate with relevant information and capabilities to satisfy their demands. Store solutions include Point of Sale, available on mobile and fixed stations, to process purchase transactions and Customer Engagement to provide the associate with a complete picture of the shopper’s purchase history. Manhattan brings these solutions together on a single mobile platform to enable retailers to offer unparalleled service and convenience for the shopper.
- Another important part of the Manhattan Active store offering is Store Inventory and Fulfillment. Most retailers are now looking to leverage store inventory to fulfill ecommerce demand (driving greater sales revenue with less inventory). This requires solutions that can accurately maintain inventory integrity and enable productive, reliable fulfillment. Manhattan’s Store Fulfillment solutions provide store associates with capabilities that power fulfillment experiences like buy online, pickup in store, curbside pickup, same day delivery and ship from store.

Inventory Solutions

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

- **Inventory Optimization** - This set of applications includes sophisticated demand forecasting capabilities that can address the particularly challenging slow-moving and intermittent products that frequently result in excess inventory due to unpredictability. Also included is the Replenishment module that can evaluate inventory needs across all locations and channels. This module can even suggest transferring inventory between locations (warehouses or stores) or ‘protect’ merchandise at a store from online sales to save it for walk-in traffic.
- **Planning** - Manhattan’s Planning solutions provide merchants the tools they need to create channel-, store- or region-specific assortments. These tools offer channel-specific metrics and methodologies that optimize the planning process and maximize retailer revenues.
- **Allocation** – Manhattan’s Allocation is designed to serve the softlines/apparel market. It provides inventory planning capabilities from first receipt in the distribution center through to the end of season for a given assortment. Built on the Manhattan Active architecture, Manhattan Active Allocation is cloud native, versionless, runs on Google Cloud Platform and updated on a quarterly basis.

Technology Platform

To fulfill increasing market demand for software-as-a-service models, Manhattan offers Manhattan Active Platform solutions – cloud-native products designed to provide “always current” version-less product access. The server side full stack runs exclusively on Google Cloud Platform, and end users can access the system from almost any type of device – mobile, tablet or desktop. Manhattan Active solutions are sold directly in multi-year cloud subscription arrangements, typically for a period of five years or more, providing clients with regular software updates during the contract period to ensure access to the latest product features and benefiting Manhattan with a highly predictable and regular revenue stream.

Part of the key value proposition of Manhattan Active Platform is extensibility. In addition to the business configurability offered within each line of business application, Manhattan Active Platform also allows our customers to change the underlying data model, the user interface, and the core business logic within each application. Key to this process is Manhattan ProActive, our developer enablement toolkit which allows for the types of technical modifications noted above (and more). While we don’t charge separately for Manhattan ProActive (it comes as part to the subscription to any Manhattan Active Platform application), we do enhance it on the same cadence as we do our line of business application, i.e. quarterly.

As omnichannel and supply chain solutions necessarily interact with other business operation systems, our solutions are designed to interoperate with software from other providers as well as with a company's existing legacy systems. This interfacing and open system capability enables customers to continue using existing computer resources and to choose among a wide variety of existing and emerging computer hardware and peripheral technologies. We 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.

Maintenance

We offer a comprehensive program that provides our on-premises software licensees with software upgrades for additional or improved functionality and technological advances incorporating emerging supply chain and industry advances. 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 a pre-paid annual fee based on the specific solutions the customer has and the service level required. We provide software upgrades on a when-and-if-available basis.

Professional Services

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

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

Our Professional Services team delivers deep supply chain and enterprise commerce domain expertise to our customers through industry-specific "best-practices" protocols and processes developed through the collective knowledge we have gained from 30 years of implementing our supply chain solutions worldwide. We also extensively train our consulting personnel on enterprise commerce operations and on our solutions.

Our 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, web- and mobile-based commerce platforms, and Material Handling Equipment systems. At times, third-party consultants, such as those from major systems integrators, assist our customers with certain implementations.

Training and Change Management Services

We offer training and change management services for new and existing users, enabling our customers to align systems, people and processes. Services provided by Manhattan training experts cover a wide range of support from the intended design to the front line of the customer's business, including critical end-user adoption with hands-on, live training in a virtualized Manhattan software environment. These programs are provided on a fixed fee per-person, per-class basis. 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 Omnichannel, Supply Chain or Inventory.

We offer Manhattan Training and Change Management Services 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 computer hardware, radio frequency terminal networks, radio frequency identification (RFID) chip readers, bar code printers and scanners, and other peripherals. We resell all third-party hardware products and related maintenance pursuant to agreements with manufacturers or

through distributor-authorized reseller agreements pursuant to which we are entitled to purchase hardware products and services at discount prices and to receive technical support in connection with product installations and any subsequent product malfunctions. We do not maintain hardware inventory as we generally purchase hardware from vendors only after receiving related customer orders.

Strategy

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

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

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

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

Acquire or Invest in Complementary Businesses. We 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 complement 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 of professionals with industry experience in sales and technical sales support. We generated the majority of our cloud subscription revenue and software license revenue through direct sales. 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. Our marketing strategy is to promote our brand, differentiate our value proposition, and generate demand for our offerings. We use multi-channel global marketing programs to reach new prospects and expand relationships with current customers. Our marketing efforts and lead generation activities consist primarily of press and industry analyst relations, customer endorsements, content marketing, digital marketing including social media such as LinkedIn, Twitter and YouTube, advertising, trade shows,

industry events, joint marketing with strategic partners, and targeted lead generation through account-based marketing. We also host our annual Momentum and Exchange user conferences, webinars, and regional user groups where the Manhattan community comes together to connect on important topics and each other, get inspired to drive their digital transformation, and get educated on Manhattan solutions and offerings.

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

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

Our Manhattan Value Partner (Manhattan MVP™) and Manhattan GeoPartner™ programs foster joint sales and marketing with other organizations. Manhattan Value Partners are proven software and hardware providers, trusted third-party integrators and consultants who bring added value to customer engagements through vertical industry knowledge or technical specialization. Manhattan MVPs support and complement our supply chain solutions so we can provide customers with a comprehensive approach that is suited to their business requirements. This collaborative program is designed to benefit both Manhattan and our partners through tailored joint marketing, sales and, in some cases, co-development efforts. Among others, Manhattan MVPs include Google Cloud, Deloitte, Accenture, Cognizant, Zebra, and Honeywell. 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, 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 11%, 12%, and 12% of total revenue for the year ended December 31, 2022 (“2022”), the year ended December 31, 2021 (“2021”) and the year ended December 31, 2020 (“2020”), respectively. No single customer accounted for more than 10% of our total revenue in 2022, 2021 and 2020.

Product Development

We focus our development efforts on new product innovation and on adding new functionality to existing solutions; integrating our various solution offerings; and enhancing the operability of our solutions across our platform and across distributed and alternative hardware platforms, operating systems, and database systems. We believe that our future success depends, in part, on our ability to continue to enhance existing solutions, respond to dynamically changing customer requirements and 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 customers’ 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 promote programming continuity standards. However, we may periodically outsource some projects that can be performed separately or that require special

skills. We also use third-party translation companies to localize our application software into various languages including Chinese, French, Japanese and Spanish.

Competition

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

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

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

We anticipate ongoing 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 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 or new competitors could emerge to win significant market share. Increased competition could result in price reductions, fewer customer orders, reduced earnings and margins and loss of market share. In turn, this could have a material adverse effect on our business, results of operations, cash flow and financial condition.

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

International Operations: Segments

We have three reportable segments based on geographic location: North and Latin America ("the Americas"); Europe, Middle East and Africa ("EMEA"); and Asia Pacific ("APAC"). For further information on our segments, see Note 8 of the Notes to our Consolidated Financial Statements. International revenue includes all revenue derived from sales to customers outside the United States. At December 31, 2022, we employed approximately 2,500 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 provide our SaaS services and license our proprietary products to our customers under services contracts and license agreements that we believe contain appropriate use and other restrictions in order to try to best protect our ownership of our services and products and our proprietary rights and to protect our revenue potential. 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 and Human Capital Management

At Manhattan, employees are our most-valued asset and are the key to our success. We have offices in Australia, Chile, China, France, Germany, India, Italy, Japan, the Netherlands, Singapore, Spain, the United Kingdom, and the United States, as well as representatives in Mexico and reseller partnerships in Latin America, Eastern Europe, the Middle East, South Africa, and Asia. As of December 31, 2022, we employed approximately 4,150 employees worldwide.

Diversity & Inclusion: Our workforce is highly educated and diverse, which we believe is important for our continued success as a leading innovator in supply chain and omnichannel commerce software and services. Our employees comprise software developers, engineers, and other technical workers and professionals in business operations and administration. Manhattan's PRISM™ embodies our long-standing global diversity and inclusion strategy and is driven by team members with a passion for creating an innovative and inclusive environment. It brings our diverse cultures together to form a collective brilliance in an environment where individuals from all backgrounds and experiences can feel comfortable as themselves. Through PRISM, we offer our Women's Initiative Network (WIN™) and our Multicultural Network (MCN™). We also have a dedicated learning path for all employees regarding diversity and inclusion.

Talent Acquisition, Retaining, and Engagement: We employ several strategies for attracting, retaining, and engaging our talented workforce. To build a steady and diverse pipeline of talent, we have a robust in-house recruiting program, which includes campus recruiting focused on universities with leading supply chain, engineering, and computer science programs. Further, we employ recruiting processes that mitigate unconscious biases and promote diverse candidate pools. Additionally, we cultivate partnerships with organizations focused on hiring women, minorities, individuals with disabilities, and veterans, including Circa, Technologists of Color, and Society of Women Engineers. Our campus programs include recruitment at historically black colleges and universities (HBCUs) and other schools with a high percentage of females and minorities enrolled in engineering and computer science programs. Further, as a federal contractor, we comply with federal contractor affirmative action requirements to employ and advance women, minorities, individuals with disabilities, and protected veterans.

To attract and retain employees, we provide competitive compensation and benefits programs, employee recognition, career development opportunities, and access to continual growth through online learning platforms, external training, and in-house live training.

To further employee enrichment and engagement, we periodically survey our employees regarding their engagement levels. We use these survey results to determine how we can continue to create work environments that enable and energize our employees and to develop a positive culture. None of our U.S. employees are subject to a collective bargaining agreement; our employees in both France

(approximately 160 employees) and the Netherlands (approximately 90 employees) are represented by employee works councils. Globally, we have experienced no work stoppages, and we believe our relations with our employees are strong.

Social Responsibility: At Manhattan, we provide opportunities for our employees to take a full day each year to give back to their communities. We call this our Manhattan Purpose™ day. We also give our employees multiple opportunities to serve through community partnerships that we cultivate through our Manhattan Connect™ program.

Well-being: We support the mental, emotional, physical, and financial well-being of our employees around the world with various company-provided programs and self-service tools, including free virtual mental health counseling, free gym access in certain locations, and free educational webinars, speakers, and other resources for personal financial and benefit plan management. In 2022, we hired our first director of global well-being, who oversees our well-being programs and continues to look for ways to enhance our offerings.

Environmental, Social and Governance (ESG)

At Manhattan, we are committed to meeting our responsibilities to our stakeholders in the areas of Environmental, Social and Governance (ESG) and believe our ESG objectives align favorably with their interests. Our Environmental, Social and Governance (ESG) Steering Committee, chaired by our CEO, overseen by our Board of Directors, and representing various levels of company management, sets our ESG objectives, ensures our focus and track our progress. More information on our ESG programs can be found on our ESG website, <https://www.manh.com/esg>.

Available Information

We file annual, quarterly and current reports and other information with the Securities and Exchange Commission (the “SEC” or the “Commission”). The SEC maintains a website at www.sec.gov 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 our 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.

Risks Related to Our Business

The effects of a pandemic or major public health concern such as the COVID-19 pandemic could materially adversely affect our business, results of operations and financial condition. In March 2020, the World Health Organization declared the outbreak of the novel coronavirus, and the disease it causes, COVID-19, a pandemic. The pandemic spread throughout the U.S. and the world and has resulted in authorities implementing numerous measures from time to time to contain the virus, including travel bans and restrictions, quarantines, shelter-in-place orders, and business limitations and shutdowns. While we are unable to completely predict the full impact that a pandemic and related remedial measures will have on our results from operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic and containment measures, our compliance with these measures could impact our day-to-day operations and could disrupt our business and operations, as well as that of our customers, suppliers and other counterparties, for an indefinite period of time.

The negative effects of a global pandemic such as COVID-19 on the overall economy could cause our revenues and profitability to decline for numerous reasons, including:

- Our customers could implement cost-saving measures, which may include reductions in information technology expense or requests for extended payment terms;
- Some customers could file for bankruptcy;
- Forced store closures could accelerate pre-existing disruption in the retail sector; and/or

- The spending habits of our customers' customers could change, reducing our customers' own revenues and profitability, which in turn could affect our revenues and profitability.

While we have experienced strong demand during 2022 and expect continued growth for our cloud solutions, sales cycles could extend as our customers and prospects continue to evaluate our solutions, including Manhattan Active Warehouse Management.

In addition, restrictions on in-person interaction, whether occasioned by government orders or changed habits or customs regarding social distancing and group activity after the expiration of strict government measures, may have a material impact on our business. For instance, implementation of our software may be impeded if either our personnel or our customer's information technology personnel are working remotely.

A decrease in revenues could also negatively affect our liquidity, as we primarily rely on cash generated from operating activities for our liquidity needs. Compounding this issue, a pandemic may make outside capital less available or more expensive.

Our future revenue is dependent on continuing sales from cloud subscriptions, which in turn drive sales of professional services. We are dependent on our new customers as well as our large installed customer base to purchase additional cloud subscriptions and professional services from us. In future periods customers may discontinue the cloud subscriptions and in turn may not purchase additional professional services from us. If our customers decide to discontinue the cloud subscription, or if they reduce the scope of their 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, products or convert them to cloud subscription, there can be no assurance that these customers will do so. If customers using older versions of our products decide not to license our current software products, or decide to discontinue the use of our products and associated post-contract support services, our revenue could decrease and our operating results could be materially adversely affected.

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

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

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

Our liability to clients may be substantial if our systems fail, which could adversely impact our business, results of operations, cash flow, and financial condition. Our products are often critical to the operations of our customers' businesses and provide benefits that may be difficult to quantify. If our products fail to function as required—which, as described in more detail in other risk factors, could be due to software bugs, cloud hosting service failures, security breaches, faulty implementations or other reasons—we may be subject to claims for substantial damages. Courts may not enforce provisions in our contracts that would limit our liability or otherwise protect us from liability for damages. Defending a lawsuit, regardless of its merit, could be costly and divert management's time and attention. Although we maintain general liability insurance and error and omissions coverage, these coverages may not continue to be available on reasonable terms or in sufficient amounts to cover claims against us. In addition, our insurer may disclaim coverage as to any future claim. If claims exceeding the available insurance coverage are successfully asserted against us, or our insurer imposes premium increases or large deductibles or co-insurance requirements on us, then our business, results of operations, cash flow, and financial condition could be adversely affected.

Our ability to sell our cloud solutions is highly dependent on the quality of our services offerings, and our failure to offer high quality services could adversely impact our business, results of operations, cash flow, and financial condition. Most of our customers rely to some extent on our professional services to aid in the implementation of our software solutions. Once our software has been installed and deployed, our customers may depend on us to provide them with ongoing support and resolution of issues relating to our software. Therefore, a high level of service is critical for the continued marketing and sale of our solutions. If we or our partners do not efficiently and effectively install and deploy our software products, or succeed in helping our customers quickly resolve post-deployment issues, our ability to sell software products to these customers would be adversely affected and our reputation in the marketplace with potential customers could suffer.

Our 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.

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 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.

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.

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;
- interest rate and inflation rate trends and fluctuations;
- overall demand for enterprise software and services;
- governmental policy, budgetary constraints or shifts in government spending priorities;

- general geo-political developments, such as the war in Ukraine; and
- currency exchange rate fluctuations.

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

In addition, political unrest and the related potential impact on global stability, acts of war or terrorism and the potential for other hostilities in various parts of the world, as well as potential public health crises and natural disasters continue to contribute to a climate of economic and political uncertainty that could adversely affect our results of operations and financial condition, including our revenue growth and profitability.

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

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 future success will depend in large part upon our ability to attract, retain, and motivate highly skilled executives and 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 Blue Yonder/Panasonic (formerly JDA), Korber (formerly HighJump), SAS Institute, the Sterling Commerce division of IBM, Relex, and others;
- Point of sale vendors, including Aptos, Oracle, and others; and
- Smaller independent companies that have developed or are attempting to develop supply chain execution solutions or planning solutions that apply either globally or in specific countries.

Some of these potential competitors have longer operating histories, significantly more financial, technical, marketing, and other resources, greater name recognition, broader solutions, and larger installed bases of customers than we do. 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. 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.

Our operating results are substantially dependent on one line of business. We continue to derive our revenues from sales of our supply chain cloud solutions and related professional services. Accordingly, any factor adversely affecting the markets for supply chain cloud solutions could have an adverse effect on our business, results of operations, cash flow, and financial condition.

Our research and development activities may not generate significant returns. 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 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 cloud and services revenue necessary to offset the investment.

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. 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 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 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.

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

Risks Related to Our Intellectual Property and Cybersecurity

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

If our data protection or other security measures are compromised and, as a result, our data, our customers’ data or our IT systems are accessed improperly, made unavailable, or improperly modified, our products and services may be perceived as

vulnerable, possibly damaging our brand and reputation, disrupting the IT services we provide to our customers, and causing our customers to stop using our products and services, all of which could reduce our revenue and earnings, increase our expenses and expose us to legal claims and regulatory actions. Our products and services can store, retrieve, manipulate and manage our customers' information and data as well as our own. We have a reputation for secure and reliable software products and services and invest time and resources into protecting the integrity and security of our products, services and internal and external data that we manage.

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

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

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

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

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.

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.

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.

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.

Risks Related to Laws and Regulations

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

In addition, the United States and other governments adopt tax reform measures from time to time that impact future effective tax rates favorably or unfavorably. These tax reforms may be in the form of changes in tax rates, changes in the valuation of deferred tax assets or liabilities, or changes in tax laws or their interpretation. Such changes can have a material adverse impact on our financial results. In 2022, the United States enacted the Inflation Reduction Act, which includes a 1% excise tax on corporate stock repurchases. While we do not anticipate that changes in the tax laws or rates in that Act will have a material, direct impact on the Company, imposition of new excise taxes and minimum corporate tax rates such as these can have a material adverse impact on the Company in the future.

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.

Other laws and regulations. We face risks related to other laws and regulations in areas discussed elsewhere in “Risk Factors” section, including data protection, export controls and immigration.

Risks Related to International Operations

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. International sales are subject to many risks and difficulties, including those arising from complying with a variety of foreign laws, import and export restrictions and tariffs, 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 and political and economic instability. 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.

Our operating results may include foreign currency gains and losses. 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 could materially impact our revenues, expenses, operating profit and net income.

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.

Risks Related to Our Common Stock

Our stock price has been highly volatile. 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 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; 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.

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 articles of incorporation and bylaws and Georgia law may inhibit a takeover of our company. Our corporate organizational 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 control of our company or a change in our management. These provisions could also discourage proxy contests and make it more difficult for shareholders to elect their own director nominees and

compel other corporate actions. The existence of these provisions could also limit the price that investors might be willing to pay for shares of our common stock.

General Risk Factors

Changes in, or interpretation of, accounting principles could result in unfavorable accounting changes. Our Consolidated Financial Statements are prepared in conformity with U.S. generally accepted accounting principles (GAAP) and accompanying accounting pronouncements, implementation guidelines, and interpretations. These rules are subject to interpretation by the SEC and various bodies formed to interpret and create appropriate accounting principles. Changes in these rules or their interpretation could significantly change our reported results and may even retroactively affect previously reported transactions. 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. In addition, as we work to align with the guidelines of the Financial Stability Board's Task Force on Climate-Related Financial Disclosures ("TCFD") and the Sustainability Accounting Standards Board ("SASB") environmental metrics, we may continue to expand our disclosure in these areas. Our failure to report accurately or achieve progress on our metrics timely could adversely affect our reputation, financial performance and business growth.

Adverse litigation results could affect our business. From time to time, we may be involved in litigation relating to claims arising in the ordinary course of business, and occasionally legal proceeding not in the ordinary course. Litigation can be lengthy, expensive and disruptive to our operations, and can divert our management's attention away from running our core business. The results of any litigation also cannot be predicted with certainty. An adverse decision could result in monetary damages or injunctive relief that could affect our business, operating results or financial condition. Additional information regarding legal matters in which we are involved, if any, can be found in Note 5 to our Consolidated Financial Statements.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

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

Item 3. Legal Proceedings

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

Many of our customer engagements involve services or products that are critical to the operations of our clients' businesses. Any downtime or failure of our services or products could result in a claim for substantial damages against us, regardless of our responsibility for that failure. Although we attempt to contractually limit our liability for damages arising from services or product downtime or failures or negligent acts or omissions, there can be no assurance that the limitations of liability in our contracts will be enforceable.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Market for Common Stock

Our common stock is traded on the Nasdaq Global Select Market under the symbol “MANH”. The number of registered shareholders of record of our common stock as of January 31, 2023 was 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

In the following table, we provide information regarding our current equity compensation plans as of December 31, 2022:

Plan Category	Number of securities to be issued upon exercise of outstanding rights	Weighted-average exercise price of outstanding rights	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by security holders	1,427,831	\$0.00	3,439,854
Equity compensation plans not approved by security holders	-	-	-
Total	1,427,831	-	3,439,854

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

Purchase of Equity Securities

In the following table, we provide information regarding our common stock repurchases under our publicly-announced share repurchase program for the quarter ended December 31, 2022.

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, 2022	-	\$-	-	\$75,000,000
November 1 - November 30, 2022	88,990	123.14	88,990	64,041,974
December 1 - December 31, 2022	117,428	121.57	117,428	49,765,853
Total	206,418		206,418	

During the year ended December 31, 2022, we repurchased a total of 1,352,954 shares at an average price per share of \$129.61 under our publicly-announced share repurchase program. In January 2023, our Board of Directors approved raising the Company’s remaining share repurchase authority to an aggregate of \$75.0 million of our common stock.

Item 6. [Reserved]

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

All statements, trend analyses, and other information contained in the following discussion relative to markets for our products and trends in revenue, gross margins, and anticipated expense levels, as well as other statements including words such as "may," "expect," "forecast," "anticipate," "intend," "plan," "believe," "could," "seek," "project," "estimate," and other 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 Unified Omnichannel Commerce and Digital Supply Chain, inventory and omnichannel operations for retailers, wholesalers, manufacturers, logistics providers and other organizations. Our customers include many of the world's most premier and profitable brands.

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

We have five principal sources of revenue:

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

In 2022, we generated \$767.1 million in total revenue, with a revenue mix of: cloud subscriptions 23%; software license 3%; maintenance 19%; services revenue 51%; and hardware 4%.

We have three geographic reportable segments: the Americas, EMEA, and APAC. Geographic revenue is based on the location of the sale. Our international revenue was approximately \$238.4 million, \$196.4 million and \$178.1 million for the years ended December 31, 2022, 2021 and 2020, respectively, which represents approximately 31%, 30% and 30% of our total revenue for the years ended December 31, 2022, 2021 and 2020, respectively. International revenue includes all revenue derived from sales to customers outside the United States. At December 31, 2022, we employed approximately 4,150 employees worldwide. We have offices in Australia, Chile, China, France, Germany, India, Italy, Japan, the Netherlands, Singapore, Spain, and the United Kingdom, as well as representatives in Mexico and reseller partnerships in Latin America, Eastern Europe, the Middle East, South Africa, and Asia.

Future Expectations

While we remain cautious about the global economy, our results for the full year ended 2022 exceeded our expectations due to solid demand for our cloud solutions. Our solutions are mission critical, supporting complex global supply chains. Favorable secular tailwinds, such as the digital transformation of businesses in manufacturing, wholesale and retail, coupled with our commitment to investing in organic innovation to deliver leading cloud supply chain, inventory and omnichannel commerce solutions is in synergistic alignment with current market demand. This alignment is contributing to our strong financial results, higher demand and strong win rates for our solutions for the period.

We remain committed to investing in our business to drive customer success and expand our total addressable market, which we believe will position us well to achieve long-term sustainable growth and earnings. We have taken steps to best ensure the health and safety of our employees globally. Our daily execution has evolved into hybrid model, and we continue to find innovative ways to engage with employees, customers and prospects.

Going forward, we are investing in our cloud business, including enterprise investments in innovation, and strategic operating expenses to support growth objectives. The pace at which the market adopts our cloud subscriptions, resulting in revenue recognition spread out over the subscription period rather than up front, combined with extended lead times for developing new business, can cause uncertainty, impacting our ability to accurately forecast bookings and revenues from quarter to quarter and over the longer term.

For 2023, our five strategic goals continue to be:

- Focus on customer success and drive sustainable long-term growth;
- Invest in innovation to expand our products and total addressable market;
- Expand our cloud suites of Unified Omnichannel Commerce and Digital Supply Chain solutions;
- Develop and grow our cloud business and cloud subscription revenue; and
- Expand our global sales, marketing, and professional service teams.

Cloud Subscription

In 2017, we released Manhattan Active™ Solutions, accelerating our business transition to cloud subscriptions. Under a cloud subscription, customers pay a periodic fee for the right to use our software within a cloud environment that we provide and manage over a specified period of time. As part of our subscription program, we allow our existing customers to convert their maintenance contracts to cloud subscription contracts. Some customers have converted their maintenance contracts to cloud subscriptions, and we expect there will be continued opportunities to convert existing maintenance contracts to cloud subscription contracts in the future.

In the fifth year of our cloud transition, demand for our cloud solutions is the dominant preference of customers. Our perpetual license solutions are rapidly attriting due to market demand for cloud with almost all of our pipeline representing cloud. Cloud solutions are our fastest growing revenue line and represents 88% of total software revenue in 2022. We believe the reduction in license and maintenance revenue in favor of our cloud offerings is positive for our customers and Manhattan Associates.

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 2022, approximately 69% of our total revenue was generated in the United States, 17% in EMEA, and the remaining balance in APAC, Canada, and Latin America. In addition, Gartner Inc. (“Gartner”), an information technology research and advisory company, estimates that nearly 75% of every supply chain software solutions dollar invested is spent in North America and Western Europe; consequently, the health of the U.S. and the Western European economies have a meaningful impact on our financial results.

We sell technology-based solutions with total pricing, including software and services, in many cases exceeding \$1.0 million. Our software is often a part of our customers’ and prospects’ much larger capital commitment associated with facilities expansion and business improvement. We believe that, given the mission critical nature of our software, combined with a challenging global macro environment, our current sales cycles for large cloud subscriptions in our target markets could be extended. While demand for our solutions is solid, the current business climate within the United States and geographic regions in which we operate may affect customers’ and prospects’ decisions regarding timing of strategic capital expenditures.

In January 2023, the International Monetary Fund (IMF) provided a World Economic Outlook (WEO) update. The WEO update noted, “global growth is projected to fall from an estimated 3.4 percent in 2022 to 2.9 percent in 2023, then rise to 3.1 percent in 2024. The rise in central bank rates to fight inflation and Russia’s war in Ukraine continue to weigh on economic activity. The rapid spread of COVID-19 in China dampened growth in 2022, but the recent reopening has paved the way for a faster than expected recovery.”

The WEO update projected that advanced economies, which represent our primary revenue markets, would grow at about 1.2 and 1.4 percent in 2023 and 2024, while the emerging and developing economies would grow at about 4.0 percent in 2023 and 4.2 percent in 2024.

While we are encouraged by our results, we remain cautious regarding the pace of global economic growth. We believe global geopolitical and economic volatility associated with the pandemic likely will continue to shape customers’ and prospects’ enterprise software buying decisions.

Revenue

Cloud Subscriptions and Software License revenue: Cloud subscriptions revenue and remaining performance obligation (“RPO”) growth are the leading indicators of our business performance, primarily derived from cloud subscription fees that customers pay for our Unified Omnichannel Commerce and Digital Supply Chain solutions. Since we announced our transition to becoming a cloud-first company in 2017 with our launch of Manhattan Active™ Solutions, we have continued to see a significant shift in demand for cloud solutions versus software license. By comparison, in 2016, cloud subscriptions and software license revenue represented 7% and 93%, respectively, of our total cloud and software license revenue mix.

In the full year ended 2022, cloud subscriptions and software license revenue were 88% and 12%, respectively, of our total cloud subscriptions and software license revenue mix. RPO increased 50% over prior year on strong demand. As of December 31, 2022, approximately \$1,051.5 million of revenue is expected to be recognized from RPO. Over 97% of RPO represent cloud native

subscriptions with a non-cancelable term greater than one year (including cloud deferred revenue as well as amounts we will invoice and recognize as revenue from our performance of cloud services in future periods). Maintenance contracts are typically one year in duration and are not included in RPO. Going forward, we expect cloud revenue to increase as a percentage of total software revenue mix on solid market demand supplanting legacy perpetual license demand.

In 2022, cloud subscriptions revenue totaled \$176.5 million, or 23% of total revenue. The Americas, EMEA, and APAC segments recognized \$149.0 million, \$23.0 million and \$4.5 million in cloud subscriptions revenue, respectively, in 2022. Cloud subscriptions revenue is recognized over the term of the agreement, typically five years or more. Cloud subscription revenue growth is influenced by the strength of general economic and business conditions and the competitive position of our software products. These revenues generally have long sales cycles.

In 2022, license revenue totaled \$24.8 million, or 3% of total revenue. The Americas, EMEA, and APAC segments totaled \$16.4 million, \$6.4 million, and \$2.1 million in license revenue, respectively, in 2022. The percentage mix of new to existing customers for the combination of cloud subscriptions and software license sales was approximately 40/60 in 2022.

Our Unified Omnichannel Commerce and Digital Supply Chain solutions are focused on core omnichannel operation (e-commerce, retail store operations and point of sale), supply chain commerce operations (Warehouse Management, Transportation Management and Labor Management), and Inventory Optimization, which are intensely competitive markets characterized by rapid technological change. We are a market leader in the supply chain management and omnichannel 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 cloud subscriptions and software license revenues faster than our competitors through investment in innovation.

Maintenance Revenue: Our maintenance revenue totaled \$142.2 million, or 19% of total revenue. The Americas, EMEA and APAC segments recognized \$113.3 million, \$19.8 million, and \$9.2 million, respectively, in maintenance revenue in 2022. For maintenance, we offer a comprehensive 24 hours per day, 365 days per year program that provides our customers with software upgrades, when and if available, which include additional or improved functionality and technological advances incorporating emerging supply chain and industry initiatives. The growth of maintenance revenues is influenced by: (1) new software license revenue growth; (2) annual renewal of support contracts; (3) increase in customers through acquisitions; (4) fluctuations in currency rates, and is offset by conversion of maintenance contracts to cloud subscription contracts. Substantially all of our customers renew their annual support contracts. Maintenance revenue is generally paid in advance and recognized over the term of the agreement, typically twelve months. Maintenance renewal revenue is recognized over the renewal period once we have a contract upon payment from the customer.

Services Revenue: In 2022, our services revenue totaled \$394.1 million, or 51% of total revenue. The Americas, EMEA, and APAC segments recognized \$296.0 million, \$79.6 million, and \$18.5 million, respectively.

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

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

Services revenue growth is contingent upon cloud sales and customer upgrade cycles, which are influenced by the strength of general economic and business conditions and the competitive position of our software products. In addition, our professional services business has competitive exposure to offshore providers and other consulting companies.

Hardware Revenue: Our hardware revenue, which we recognize net of related costs, totaled \$29.5 million in 2022 representing 4% of total revenue. As a convenience for our cloud and software customers, we resell a variety of hardware products developed and manufactured by third parties. These products include computer hardware, radio frequency terminal networks, RFID chip readers, bar code printers and scanners, and other peripherals. We resell all third-party hardware products and related maintenance pursuant to agreements with manufacturers or through distributor-authorized reseller agreements pursuant to which we are entitled to purchase hardware products and services at discount prices. We generally purchase hardware from our vendors only after receiving an order from a customer. As a result, we do not maintain hardware inventory.

Product Development

We continue to invest significantly in research and development (R&D) to provide leading Unified Omnichannel Commerce and Digital Supply Chain solutions to enable 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 R&D expenses for the years ended December 31, 2022, 2021 and 2020 were \$111.9 million, \$97.6 million, and \$84.3 million, respectively.

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

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

Cash Flow and Financial Condition

For 2022, we generated cash flow from operating activities of \$179.6 million and have generated a cumulative total of \$505.7 million for the three years ended December 31, 2022. Our cash at December 31, 2022 totaled \$225.5 million, with no debt on our balance sheet. We currently have no credit facilities. During the past three years, our primary uses of cash have been for funding investments in R&D in our Unified Omnichannel Commerce and Digital Supply Chain solutions to drive revenue and earnings growth. In addition, we repurchased approximately \$175.4 million of Manhattan Associates' outstanding common stock under the share repurchase program approved by our Board of Directors. In January 2023, our Board of Directors approved raising the Company's remaining share repurchase authority to an aggregate of \$75.0 million of our common stock.

In 2023, our priorities for use of cash will continue to be investments in our Unified Omnichannel Commerce and Digital Supply Chain solutions. We also will prioritize capital allocation in our global teams to fund growth, and accretive share repurchases. We do not anticipate any borrowing requirements in 2023 for general corporate purposes.

Full Year 2022 Financial Summary

- Diluted earnings per share: \$2.03 for 2022 compared to \$1.72 for 2021;
- Consolidated revenue: \$767.1 million for 2022 compared to \$663.6 million for 2021;
- Cloud subscription revenue: \$176.5 million for 2022 compared to \$122.2 million for 2021;
- License revenue: \$24.8 million for 2022 compared to \$37.1 million for 2021;
- Operating income: \$152.7 million for 2022 compared to \$134.3 million for 2021;
- Operating margins: 19.9% for 2022 compared to operating margins of 20.2% for 2021;
- Cash flow from operations: \$179.6 million for 2022 compared to \$185.2 million for 2021;
- Cash paid for income taxes: \$58.0 million for 2022 compared to \$29.2 million for 2021;
- Cash and investments: \$225.5 million at December 31, 2022 compared to \$263.7 million at December 31, 2021; and
- Share repurchases: In 2022, we repurchased 1,352,954 shares of Manhattan Associates' outstanding common stock for approximately \$175.4 million under the share repurchase program approved by our Board of Directors. In January 2023, our Board of Directors approved raising the Company's remaining share repurchase authority to an aggregate of \$75.0 million of our common stock.

Results of Operations

In the following table, we present a selection of certain Statement of Income data for 2022, 2021 and 2020.

	Year Ended December 31,				
	2022	2021	2020	% Change vs. Prior Year	
		(in thousands)		2022	2021
Revenue:					
Cloud subscriptions	\$ 176,458	\$ 122,195	\$ 79,830	44%	53%
Software license	24,848	37,070	38,284	-33%	-3%
Maintenance	142,198	145,841	147,748	-2%	-1%
Services	394,096	334,799	303,569	18%	10%
Hardware	29,484	23,738	16,941	24%	40%
Total revenue	767,084	663,643	586,372	16%	13%
Costs and expenses:					
Cost of software license	2,126	2,309	2,894	-8%	-20%
Cost of cloud subscriptions, maintenance and services	356,111	295,518	266,993	21%	11%
Research and development	111,877	97,628	84,276	15%	16%
Sales and marketing	64,537	57,855	47,758	12%	21%
General and administrative	73,070	68,086	61,444	7%	11%
Depreciation and amortization	6,663	7,914	8,946	-16%	-12%
Total costs and expenses	614,384	529,310	472,311	16%	12%
Income from operations	\$ 152,700	\$ 134,333	\$ 114,061	14%	18%
Operating margin	19.9%	20.2%	19.5%		

We have three geographic reportable segments: the Americas, EMEA, and APAC. Geographic revenue information is based on the location of sale. The revenues represented below are from external customers only. The geography-based expenses include costs of personnel, direct sales, marketing expenses, and general and administrative costs to support the business. There are certain corporate expenses included in the Americas segment that we do not charge to the other segments including research and development, certain marketing and general and administrative costs that support the global organization, and the amortization of acquired developed technology. Included in the Americas costs are all research and development costs, including the costs associated with our operations in India. During 2022, 2021, or 2020, we derived the majority of our revenues from sales to customers within our Americas segment. In the following table, we present a summary of revenue and operating profit by segment:

	Year Ended December 31,				
	2022	2021	2020	% Change vs. Prior Year	
		(in thousands)		2022	2021
Revenue:					
Cloud subscriptions					
Americas	\$ 148,943	\$ 103,863	\$ 69,469	43%	50%
EMEA	22,988	15,380	8,465	49%	82%
APAC	4,527	2,952	1,896	53%	56%
Total cloud subscriptions	176,458	122,195	79,830	44%	53%
Software license					
Americas	16,364	29,300	30,509	-44%	-4%
EMEA	6,380	5,729	4,308	11%	33%
APAC	2,104	2,041	3,467	3%	-41%
Total software license	24,848	37,070	38,284	-33%	-3%
Maintenance					
Americas	113,258	113,169	116,309	0%	-3%
EMEA	19,784	23,091	22,208	-14%	4%
APAC	9,156	9,581	9,231	-4%	4%
Total maintenance	142,198	145,841	147,748	-2%	-1%
Services					
Americas	295,998	256,392	232,954	15%	10%
EMEA	79,628	66,131	58,360	20%	13%
APAC	18,470	12,276	12,255	50%	0%
Total services	394,096	334,799	303,569	18%	10%
Hardware					
Americas	29,321	23,491	16,698	25%	41%
EMEA	158	243	241	-35%	1%
APAC	5	4	2	25%	100%
Total hardware	29,484	23,738	16,941	24%	40%
Total Revenue					
Americas	603,884	526,215	465,939	15%	13%
EMEA	128,938	110,574	93,582	17%	18%
APAC	34,262	26,854	26,851	28%	0%
Total revenue	\$ 767,084	\$ 663,643	\$ 586,372	16%	13%
Operating income:					
Americas	\$ 99,289	\$ 91,179	\$ 81,109	9%	12%
EMEA	40,030	34,747	24,637	15%	41%
APAC	13,381	8,407	8,315	59%	1%
Total operating income	\$ 152,700	\$ 134,333	\$ 114,061	14%	18%

The consolidated results of our operations for the years ended December 31, 2022, 2021 and 2020 are discussed below.

Revenue

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

	Year Ended December 31,							
	% Change vs. Prior					% of Total Revenue		
	Year		2020	Year		2022		2020
	2022	2021		2022	2021	2022	2021	2020
	(in thousands)							
Cloud subscriptions	\$ 176,458	\$ 122,195	\$ 79,830	44%	53%	23%	18%	14%
Software license	24,848	37,070	38,284	-33%	-3%	3%	6%	6%
Maintenance	142,198	145,841	147,748	-2%	-1%	19%	22%	25%
Services	394,096	334,799	303,569	18%	10%	51%	50%	52%
Hardware	29,484	23,738	16,941	24%	40%	4%	4%	3%
Total revenue	<u>\$ 767,084</u>	<u>\$ 663,643</u>	<u>\$ 586,372</u>	<u>16%</u>	<u>13%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Cloud Subscriptions Revenue

Year 2022 compared with year 2021

Cloud subscriptions revenue increased \$54.3 million to \$176.5 million in 2022 compared to 2021 on customers demand for our SaaS offerings. Our customers increasingly prefer cloud solutions, including existing customers that are migrating from on-premise to cloud offerings. Cloud subscriptions revenue for the Americas, EMEA and APAC segments increased \$45.1 million, \$7.6 million and \$1.6 million, respectively.

Year 2021 compared with year 2020

Cloud subscriptions revenue increased \$42.4 million to \$122.2 million in 2021 compared to 2020 as customers continue to purchase our SaaS offerings rather than a traditional perpetual license. Our customers increasingly prefer cloud solutions, including existing customers that are migrating from on-premise to cloud offerings. Cloud subscriptions revenue for the Americas, EMEA and APAC segments increased \$34.4 million, \$6.9 million and \$1.1 million, respectively.

Software License Revenue

Year 2022 compared with year 2021

Software license revenue decreased \$12.3 million to \$24.8 million in 2022 compared to 2021 as customers continue to purchase our SaaS offerings rather than a traditional perpetual license. License revenue for the Americas decreased \$13.0 million, while license revenue for the EMEA and APAC segments increased \$0.6 million and \$0.1 million, respectively, in 2022 over 2021. The majority of our software license revenue relates to our warehouse management product group (over 85%) for the year ended December 31, 2022.

Year 2021 compared with year 2020

Software license revenue decreased \$1.2 million to \$37.1 million in 2021 compared to 2020. License revenue for the Americas and APAC segments decreased \$1.2 million and \$1.4 million, respectively, and license revenue for the EMEA segment increased \$1.4 million, in 2021 over 2020. The majority of our software license revenue relates to our warehouse management product group (approximately 85%) for the year ended December 31, 2021.

Maintenance Revenue

Year 2022 compared with year 2021

Maintenance revenue decreased \$3.6 million in 2022 compared to 2021 as customers have continued to convert their maintenance contracts to cloud subscriptions. The EMEA and APAC segments decreased \$3.3 million and \$0.4 million respectively, compared to 2021, while the Americas segment increased \$0.1 million.

Year 2021 compared with year 2020

Maintenance revenue decreased \$1.9 million in 2021 compared to 2020. Maintenance revenue for the Americas segments decreased \$3.1 million, while EMEA and APAC segments increased \$0.9 million and \$0.3 million compared to 2020, respectively.

Services Revenue

Year 2022 compared with year 2021

Services revenue increased \$59.3 million in 2022 compared to 2021. Service revenue for the Americas, EMEA and APAC segments increased \$39.6 million, \$13.5 million and \$6.2 million, respectively, compared to 2021. Services revenue was driven by adoption and implementation of our cloud solutions.

Year 2021 compared with year 2020

Services revenue increased \$31.2 million in 2021 compared to 2020. The Americas and EMEA segments increased \$23.4 million and \$7.8 million, respectively, while the APAC segment remained flat, compared to 2020. Services revenue was driven by adoption and implementation of our cloud solutions.

Hardware Revenue

Hardware revenue, net increased \$5.8 million in 2022 compared to 2021. Hardware revenue, net increased \$6.8 million in 2021 compared to 2020. The majority of hardware sales are derived from our Americas segment. Sales of hardware are largely dependent upon customer-specific desires, which fluctuate.

Cost of Revenue

	Year Ended December 31,				
	2022	2021	2020	% Change vs. Prior Year	
				2022	2021
		(in thousands)			
Cost of software license	\$ 2,126	\$ 2,309	\$ 2,894	-8%	-20%
Cost of cloud subscriptions, maintenance and services	356,111	295,518	266,993	21%	11%
Total cost of revenue	<u>\$ 358,237</u>	<u>\$ 297,827</u>	<u>\$ 269,887</u>	<u>20%</u>	<u>10%</u>

Cost of Software License

Cost of software license consists of the costs associated with software reproduction; media, packaging and delivery; documentation, and other related costs; and royalties on third-party software sold with or as part of our products. In 2022, cost of license decreased by \$0.2 million, compared to 2021. In 2021, cost of software license decreased by \$0.6 million compared to 2020.

Cost of Cloud Subscriptions, Maintenance and Services

Year 2022 compared with year 2021

Cost of cloud subscriptions, maintenance and services consists primarily of salaries and other personnel-related expenses of employees dedicated to cloud subscriptions; maintenance services; and professional and technical services as well as hosting fees. The \$60.6 million increase in 2022 compared to 2021 was principally due to a \$43.7 million increase in compensation and other personnel-related expenses, a \$6.2 million increase in travel expense, a \$5.1 million increase in performance-based compensation expense, a \$3.7 million increase in computer infrastructure cost and a \$0.8 million increase in professional expense.

Year 2021 compared with year 2020

The \$28.5 million increase in 2021 compared to 2020 was principally due to a \$17.0 million increase in compensation and other personnel-related expenses, and a \$15.1 million increase in performance-based compensation expense, offset by a \$2.0 million decrease in computer infrastructure costs and a \$1.8 million decrease in travel expense.

Operating Expenses

	Year Ended December 31,				
	2022	2021	2020	% Change vs. Prior Year	
				2022	2021
				(in thousands)	
Research and development	\$ 111,877	\$ 97,628	\$ 84,276	15%	16%
Sales and marketing	64,537	57,855	47,758	12%	21%
General and administrative	73,070	68,086	61,444	7%	11%
Depreciation and amortization	6,663	7,914	8,946	-16%	-12%
Operating expenses	\$ 256,147	\$ 231,483	\$ 202,424	11%	14%

Research and Development

Our principal research and development (R&D) activities during 2022, 2021 and 2020 focused on the expansion and integration of new products and releases, including cloud solutions, while expanding the product footprint of our Unified Omnichannel Commerce and Digital Supply Chain solutions, including Inventory Optimization and point-of-sale.

For 2022, 2021 and 2020, 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 2022 compared with year 2021

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 2022 increased by \$14.3 million compared to 2021. This increase is principally due to a \$12.1 million increase in compensation and other personnel-related expenses, and a \$1.1 million increase in performance-based compensation expense.

Year 2021 compared with year 2020

Research and development expenses in 2021 increased by \$13.4 million compared to 2020. This increase is principally due to a \$7.8 million increase in compensation and other personnel-related expenses, and a \$4.4 million increase in performance-based compensation expense.

Sales and Marketing

Year 2022 compared with year 2021

Sales and marketing expenses include salaries, commissions, travel and other personnel-related costs and the costs of our marketing and alliance programs and related activities. Sales and marketing expenses increased by \$6.7 million in 2022 compared to 2021, primarily due to a \$2.7 million increase in performance-based compensation expense, a \$2.1 million increase in compensation and other personnel-related expenses, a \$1.1 million in travel expense, and a \$0.8 million increase in marketing and campaign programs.

Year 2021 compared with year 2020

Sales and marketing expenses increased \$10.1 million in 2021 compared to 2020, primarily due to a \$6.2 million increase in performance-based compensation expense, a \$2.5 million increase in compensation and other personnel-related expenses, and a \$1.6 million increase in marketing and campaign programs.

General and Administrative

Year 2022 compared with year 2021

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 \$5.0 million in 2022 primarily due to a \$4.1 million increase in compensation and other personnel-related expenses, and a \$0.6 million increase in travel expenses.

Year 2021 compared with year 2020

General and administrative expenses increased \$6.6 million in 2021 primarily due to a \$4.0 million increase in compensation and other personnel-related expenses, and a \$2.5 million increase in performance-based compensation expenses.

Depreciation and Amortization

Depreciation and amortization of intangibles and software expense amounted to \$6.7 million, \$7.9 million, and \$8.9 million in 2022, 2021 and 2020, respectively. Amortization of intangibles was immaterial in 2022, 2021 and 2020. We have recorded goodwill and other acquisition-related intangible assets as part of the purchase accounting associated with various acquisitions.

Operating Income

Operating income in 2022 increased \$18.4 million to \$152.7 million, compared to \$134.3 million for 2021. Operating margins were 19.9% for 2022 versus 20.2% for 2021. Operating income increased primarily due to increased cloud subscriptions and services revenues. In 2022, operating income increased by \$8.1 million, \$5.3 million, and \$5.0 million in the Americas, EMEA and APAC segment, respectively. Our operating margin decreased slightly due to our commitment to strategically invest in the business as a cloud first company focused on delivering long term sustainable growth and earnings leverage. We are investing significantly in R&D to deliver new innovation as well as cloud operations headcount, infrastructure, and technology to support our ability to scale our cloud business to achieve our growth objectives.

Operating income in 2021 increased \$20.2 million to \$134.3 million, compared to \$114.1 million for 2020. Operating margins were 20.2% for 2021 versus 19.5% for 2020. Operating income and operating margin increased primarily due to increased cloud subscriptions and services revenues. In 2021, operating income increased in both of the Americas and EMEA segments by \$10.1 million while the APAC segment remained relatively flat.

Other Income and Income Taxes

	Year Ended December 31,			% Change vs. Prior Year	
	2022	2021	2020	2022	2021
Other (loss) income, net	\$ 5,421	\$ (261)	\$ (285)	-2177%	-8%
Income tax provision	29,162	23,600	26,536	24%	-11%

Other (Loss) Income, net

Other (loss) income, net primarily includes interest income, foreign currency gains and losses, and other non-operating expenses. Interest income was \$0.6 million, \$0.1 million and \$0.1 million for 2022, 2021 and 2020, respectively. The weighted-average interest rate earned on cash and investments was immaterial for 2022, 2021 and 2020. We recorded net foreign currency gains of \$4.7 million in 2022, compared to net foreign loss of \$0.2 million and \$0.4 million in 2021 and 2020, 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 and Indian Rupee.

Income Tax Provision

Our effective income tax rates were 18.4%, 17.6%, and 23.3% in 2022, 2021 and 2020, 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 2022 increased from 2021 mainly due to an increase of expense from an unfavorable tax law change limiting creditability of foreign tax offset by a decrease in expense for tax contingencies.

The effective income tax rate in 2021 decreased from 2020 mainly due to an increase of excess tax benefits on restricted stock vesting, a decrease in expense for tax contingencies, and an increase in foreign jurisdiction business incentives. These benefits were partially offset by a net increase in non-deductible equity-based compensation.

The income tax provision for 2022, 2021 and 2020 included excess tax benefits of \$7.6 million, \$6.6 million, and \$3.8 million on vesting of restricted stock.

Liquidity and Capital Resources

During 2022, 2021 and 2020, we funded our business through cash generated from operations. Our cash and cash equivalents as of December 31, 2022 included \$172.5 million held in the U.S. and \$53.0 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, we would no longer be subject to additional U.S. income taxes on such earnings due to the enactment of the Tax Cuts and Jobs Act in December 2017, but we could be subject to additional local withholding taxes.

Cash flow from operating activities totaled \$179.6 million, \$185.2 million, and \$140.9 million in 2022, 2021 and 2020, respectively. Typical factors affecting our cash provided by operating activities include our level of revenue and earnings for the period, the timing and amount of employee bonus and income tax payments, and the timing of cash collections from our customers which is our primary source of operating cash flow. Cash flow from operating activities for 2022 decreased \$5.6 million compared to 2021, which is mainly due to an increase in income tax payments from the 2017 U.S. Tax Cuts and Jobs Act elimination of the expensing of research and development costs as incurred for tax purposes beginning in 2022. Cash flow from operating activities for 2021 increased \$44.3 million compared to 2020, which is mainly due to earnings growth in 2021, and the timing of cash collections, partially offset by an increase in income tax payments. Days sales outstanding was 77, 67 and 68 at December 31, 2022, 2021 and 2020, respectively, reflecting solid cash collections.

Investing activities used cash of approximately \$6.6 million, \$4.0 million, and \$2.7 million in 2022, 2021 and 2020, respectively. Our investing activities for 2022, 2021 and 2020 consisted of capital spending to support company growth and short-term investing. For 2022, 2021 and 2020, capital expenditure was \$6.6 million, \$4.0 million, and \$2.7 million, respectively.

Financing activities used cash of approximately \$204.5 million, \$120.4 million, and \$43.6 million in 2022, 2021 and 2020, respectively. The principal use of cash for financing activities in 2022, 2021 and 2020 was to purchase our common stock, including shares withheld for taxes due upon vesting of restricted stock. Repurchases of our common stock for 2022, 2021 and 2020 totaled \$204.5 million, \$120.4 million, and \$43.6 million, respectively, including shares withheld for taxes of \$29.1 million, \$20.4 million, and \$18.6 million, respectively. In January 2023, our Board of Directors approved raising the Company's remaining share repurchase authority to an aggregate of \$75.0 million of our outstanding 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 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 2023, 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 in our business to extend our market leadership. We will 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 2023 for general corporate purposes.

Aggregate Contractual Obligations

Our principal commitments as of December 31, 2022 consist of multiple non-cancellable contracts for cloud infrastructure services and obligations under operating leases. As of December 31, 2022, our cloud infrastructure obligations are approximately \$116.6 million over the next 4 years. We also enter into non-cancellable subscriptions in the ordinary course of business for internal software to support our operations. Our obligations, as of December 31, 2022, are approximately \$24.2 million over the next 5 years. We expect to fulfill all of these commitments from our working capital.

Lease Commitments

We lease our facilities and some of our equipment under noncancelable operating lease arrangements that expire at various dates through 2029. Rent expense for these leases aggregated \$7.7 million, \$7.9 million, and \$7.9 million during 2022, 2021 and 2020, respectively.

In the following table, we present a summary of our contractual commitments as of December 31, 2022 (in thousands):

	Total	2023	2024	2025	2026	2027	Thereafter
Operating Lease Obligations	\$25,516	\$7,109	\$6,130	\$5,344	\$2,491	\$2,351	\$2,091

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 services and products infringe third party 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 services or products 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 services or products, (ii) replace or modify the services or products so that the customer's use does not infringe, or, if neither of those options is reasonably feasible, terminate that particular services or products and provide, as applicable, a refund of services fees paid for services not received or a refund of the unamortized portion of the license fees paid for the products (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, but they do not cover indirect or consequential damages, such as our customers' lost revenues or profits. We have not previously incurred costs to settle claims or pay awards under these indemnification obligations. We account for these indemnity obligations in accordance with the FASB guidance on accounting for contingencies and record a liability for these obligations when a loss is probable and reasonably estimable. We have not recorded any liabilities for these indemnification obligations as of December 31, 2022.

Warranties

In general, in our customer contracts for purchase of our cloud SaaS services or license of our on-premises software products, we warrant that our services or software will perform in accordance with our published services or product specifications. Additionally, we may include other warranties such as "no-malware" warranties and warranties that we will perform our SaaS services consistent with generally accepted industry standards or similar standards. In our SaaS services agreements, we also include service level agreements (SLAs) under which we agree to provide service credits to our customers if our services availability drops below certain defined levels. If necessary, we would reserve for the estimated cost of product and service warranties based on specific warranty claims and claims history. However, we have not incurred significant recurring expense under our services or product warranties. As a result, we believe the estimated fair value of our warranty obligations is nominal and we have no liabilities recorded for them as of December 31, 2022.

Application of Critical Accounting Policies and Estimates

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

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

Revenue Recognition

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

Nature of Products and Services

Cloud subscriptions includes software as a service and arrangements which provide customers with the right to use our software within a cloud environment that we provide and manage where the customer does not have the right to take possession of the software

without significant penalty. SaaS and hosting revenues are recognized over the contract period. For contracts that include a perpetual license and hosting services, we generally consider the arrangement as an overall service, recognized over the initial hosting term. The software license fee typically due at the outset of the arrangement is not payable again if the customer renews the hosting services, so that the customer's option to renew the hosting services is a material right, the revenue from which, if the option is exercised, we will recognize over the applicable renewal period.

Our perpetual software licenses provide the customer with a right to use the software as it exists at the time of purchase. We recognize revenue for distinct software licenses once the license period has begun and we have made the software available to the customer. Our perpetual software licenses are typically sold with maintenance under which we provide a comprehensive 24 hours per day, 365 days per year program that provides customers with software upgrades, when and if available, which include additional or improved functionality and technological advances incorporating emerging supply chain and industry initiatives. Revenue related to maintenance is generally paid in advance and recognized over the term of the agreement, typically twelve months.

Our services revenue consists of fees generated from implementation, training and application managed services, including reimbursements of out-of-pocket expenses in connection with our implementation services. Implementation services include system planning, design, configuration, testing, and other software implementation support, and are typically optional and distinct from our software. Following implementation, customers may purchase application managed services to support and maintain our software. Fees for our services are separately priced and are generally billed on an hourly basis, and revenue is recognized over time as the services are performed. In certain situations, we render professional services under agreements based upon a fixed fee for portions of or all of the engagement. Revenue related to fixed-fee-based services contracts is recognized over time based on the proportion performed.

Significant Judgements

Our customer contracts include the sale of multiple SaaS services or licensed products. Judgement is required to determine whether each service or product sold is a distinct performance obligation that should be accounted for separately. We allocate the transaction price to the distinct performance obligations based on relative standalone selling price ("SSP"). We estimate SSP based on the prices we charge our customers or by using other information such as market conditions and other observable inputs. However, the selling price of our software licenses is highly variable. Thus, we estimate SSP for software licenses using the residual approach, determined based on total transaction price less the SSP of other goods and services promised in the contract.

Contract Balances

Timing of invoicing to customers may differ from timing of revenue recognition. Payment terms for our software licenses vary. We have an established history of collecting under the terms of our software license contracts without providing refunds or concessions to our customers. Cloud subscriptions and maintenance are typically billed annually in advance. We typically bill our professional services monthly as performed. In instances where the timing of revenue recognition differs from the timing of invoicing, we have determined that our contracts generally do not include a significant financing component. The primary purpose of our invoicing terms is to provide customers with predictable ways to purchase our software and services, not to provide or receive financing. Additionally, we are applying the practical expedient to exclude from consideration any contracts with payment terms of one year or less as we rarely offer terms extending beyond one year.

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

Accounting for Income Taxes

We provide for the effect of income taxes on our financial position and results of operations in accordance with the Income Taxes Topic of the ASC. Under this accounting pronouncement, income tax expense is recognized for the amount of income taxes payable or refundable for the current year and for the change in net deferred tax assets or liabilities resulting from events that are recorded for financial reporting purposes in a different reporting period than recorded in the tax return. Management must make significant assumptions, judgments, and estimates to determine our current provision for income taxes and also our deferred tax assets and liabilities and any valuation allowance to be recorded against our net deferred tax asset.

Our judgments, assumptions, and estimates relative to the current provision for income tax take into account current tax laws, our interpretation of current tax laws, allowable deductions, projected tax credits, and possible outcomes of current and future audits conducted by foreign and domestic tax authorities. We do not recognize a tax benefit unless we conclude that it is more likely than not that the benefit will be sustained on audit by the taxing authority based solely on the technical merits of the associated tax position. If the recognition threshold is met, we recognize a tax benefit measured at the largest amount of the tax benefit that, in our judgment, is greater than 50 percent likely to be realized. Changes in tax law or our interpretation of tax laws and the resolution of current and

future tax audits could significantly impact the amounts provided for income taxes in our statement of financial position and our statements of income. Our assumptions, judgments, and estimates relative to the value of our net deferred tax asset take into account predictions of the amount and category of future taxable income. Actual operating results and the underlying amount and category of income in future years could render our current assumptions, judgments, and estimates of recoverable net deferred taxes inaccurate, thus materially impacting our financial position and results of operations.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign Business

Our international business is subject to risks typical of an international business, including, but not limited to differing economic conditions, changes in political climate, differing tax structures, other regulations and restrictions, and foreign exchange rate volatility. Our international operations currently include business activity out of offices in the Australia, Chile, China, France, Germany, India, Italy, Japan, the Netherlands, Singapore, Spain, and the United Kingdom. When the U.S. dollar strengthens against a foreign currency, the value of our sales and expenses in that currency converted to U.S. dollars decreases. When the U.S. dollar weakens, the value of our sales and expenses in that currency converted to U.S. dollars increases. We recognized foreign exchange gains of \$4.7 million in 2022, compared to foreign exchange losses of \$0.2 million, and \$0.4 million in 2021 and 2020, respectively. Foreign exchange rate transaction gains and losses are classified in “Other (loss) income, net” in our Consolidated Statements of Income. A fluctuation of 10% in the period end exchange rates at December 31, 2022 relative to the U.S. dollar would have resulted in a change of approximately \$4.6 million in the reported foreign currency loss. A fluctuation of 10% in the period end exchange rates at December 31, 2021 relative to the U.S. dollar would have resulted in a change of approximately \$4.4 million in the reported foreign currency loss.

Interest Rates

We currently invest our cash and cash equivalents in a variety of financial instruments, including taxable floating rate obligations in money market funds and certificate of deposits with original maturities of less than three months when purchased. These investments are mainly denominated in U.S. dollars. Cash balances in foreign currencies overseas, except for India, are derived from business operations. Our operations in India are funded by the U.S. operations. At December 31, 2022, our cash and cash equivalents balances totaled \$225.5 million, of which all is highly liquid.

Investments in both fixed rate and floating rate interest-earning instruments carry interest rate risks. Fixed rate securities may have their fair market value adversely impacted due to a rise in interest rates, while floating rate securities may produce less income than expected if interest rates fall. Due in part to these factors, our future investment income may fall short of expectations due to changes in interest rates, or we may suffer losses in principal if forced to sell securities that have seen a decline in market value due to changes in interest rates. The weighted-average interest rate of return on cash equivalents and short-term investments was immaterial for the years ended December 31, 2022 and 2021. The fair value of cash equivalents held at December 31, 2022 and 2021 was \$106.6 million and \$13.8 million, respectively. Based on the average cash equivalents and short-term investments outstanding during 2022 and 2021, increases or decreases in the rates of return of 25 basis points would result in increases or decreases to interest income of approximately \$0.6 million from the reported interest income for both 2022 and 2021.

Item 8. Financial Statements and Supplementary Data

Financial Statements

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MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

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

The Company's internal control over financial reporting includes policies and procedures that pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets; provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of management and the directors of the Company; and provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

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

As of the end of the Company's 2022 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, 2022 was effective.

Ernst & Young LLP, the independent registered public accounting firm that audited the Company's financial statements for the year ended December 31, 2022, has audited the Company's internal control over financial reporting as of December 31, 2022 and has issued a report regarding the Company's internal control over financial reporting appearing on page 38, which expresses an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2022.

/s/ Eddie Capel

Eddie Capel

President and Chief Executive Officer

February 6, 2023

/s/ Dennis B. Story

Dennis B. Story

Executive Vice President, Chief Financial Officer,
and Treasurer

February 6, 2023

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

To the Shareholders and the Board of Directors of Manhattan Associates, Inc. and Subsidiaries

Opinion on Internal Control over Financial Reporting

We have audited Manhattan Associates, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). In our opinion, Manhattan Associates, Inc. and subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and financial statement schedule listed in the Index at Item 15(a) and our report dated February 6, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ Ernst & Young LLP

Atlanta, Georgia
February 6, 2023

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

To the Shareholders and the Board of Directors of Manhattan Associates, Inc. and Subsidiaries

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Manhattan Associates, Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and financial statement schedule listed in the Index at Item 15(a) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, 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 6, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter on the account or disclosure to which it relates.

Description of the Matter

Revenue Recognition

As described in Note 1 to the consolidated financial statements, the Company recognizes revenue upon transfer of control of promised products and services to customers in an amount that reflects the consideration the Company expects to be entitled to in exchange for those products or services.

The Company enters into contracts with its customers that may include promises to transfer SaaS offerings, software licenses, software maintenance and professional services. Significant judgment may be required by the Company in determining the amount of revenue recognition for these customer contracts which include multiple performance obligations, including the determination of standalone selling prices for each distinct performance obligation, particularly for products and services that are not sold separately.

Given these factors, the related audit effort in evaluating management's judgments in determining revenue recognition for these customer agreements was extensive and required a high degree of auditor judgment.

How We Addressed the Matter

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process to identify the performance obligations in a customer arrangement, determine the standalone selling price and allocate the transaction price to those performance obligations.

Our audit procedures included, among others, reading executed contracts for a sample of sales transactions to assess management's evaluation of significant terms, including the determination of distinct performance obligations, and tested the amounts recognized as revenue or recorded in deferred revenue. To test management's determination of relative standalone selling price for performance obligations, we performed audit procedures that included, among others, assessing the appropriateness of the methodology applied, testing mathematical accuracy of the underlying data and calculations, and testing transactions to corroborate the data underlying the Company's calculations. We also assessed the appropriateness of the related disclosures in the consolidated financial statements.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2002.

Atlanta, Georgia
February 6, 2023

MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES
Consolidated Statements of Income
(in thousands, except per share amounts)

	Year Ended December 31,		
	2022	2021	2020
Revenue:			
Cloud subscriptions	\$ 176,458	\$ 122,195	\$ 79,830
Software license	24,848	37,070	38,284
Maintenance	142,198	145,841	147,748
Services	394,096	334,799	303,569
Hardware	29,484	23,738	16,941
Total revenue	767,084	663,643	586,372
Costs and expenses:			
Cost of software license	2,126	2,309	2,894
Cost of cloud subscriptions, maintenance and services	356,111	295,518	266,993
Research and development	111,877	97,628	84,276
Sales and marketing	64,537	57,855	47,758
General and administrative	73,070	68,086	61,444
Depreciation and amortization	6,663	7,914	8,946
Total costs and expenses	614,384	529,310	472,311
Operating income	152,700	134,333	114,061
Interest income	596	68	98
Other loss, net	4,825	(329)	(383)
Income before income taxes	158,121	134,072	113,776
Income tax provision	29,162	23,600	26,536
Net income	<u>\$ 128,959</u>	<u>\$ 110,472</u>	<u>\$ 87,240</u>
Basic earnings per share	<u>\$ 2.05</u>	<u>\$ 1.74</u>	<u>\$ 1.37</u>
Diluted earnings per share	<u>\$ 2.03</u>	<u>\$ 1.72</u>	<u>\$ 1.36</u>
Weighted average number of shares:			
Basic	62,768	63,445	63,538
Diluted	63,408	64,323	64,333

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

MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income
(in thousands)

	Year Ended December 31,		
	2022	2021	2020
Net income	\$ 128,959	\$ 110,472	\$ 87,240
Foreign currency translation adjustment	(7,704)	(1,566)	(415)
Comprehensive income	<u>\$ 121,255</u>	<u>\$ 108,906</u>	<u>\$ 86,825</u>

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

MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES
Consolidated Balance Sheets
(in thousands, except share and per share data)

	December 31,	
	2022	2021
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 225,463	\$ 263,706
Accounts receivable, net of allowance of \$6,009 and \$2,419, at December 31, 2022 and December 31, 2021, respectively	166,767	124,420
Income taxes receivable	647	2,597
Prepaid expenses	18,884	17,053
Other current assets	3,614	643
Total current assets	415,375	408,419
Property and equipment, net	12,803	13,889
Operating lease right-of-use assets	17,794	27,272
Goodwill, net	62,230	62,239
Deferred income taxes	37,206	7,650
Other assets	24,770	20,239
Total assets	\$ 570,178	\$ 539,708
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 25,701	\$ 19,625
Accrued compensation and benefits	54,469	53,104
Accrued and other liabilities	24,569	22,741
Deferred revenue	208,807	153,196
Income taxes payable	2,049	376
Total current liabilities	315,595	249,042
Operating lease liabilities, long-term	14,065	23,157
Other non-current liabilities	13,718	16,865
Commitments and contingencies (Note 5)		
Shareholders' equity:		
Preferred stock, no par value; 20,000,000 shares authorized, no shares issued or outstanding at December 31, 2022 and December 31, 2021	-	-
Common stock, \$.01 par value; 200,000,000 shares authorized; 62,191,570 and 63,154,494 shares issued and outstanding at December 31, 2022 and December 31, 2021, respectively	621	631
Retained earnings	253,711	269,841
Accumulated other comprehensive loss	(27,532)	(19,828)
Total shareholders' equity	226,800	250,644
Total liabilities and shareholders' equity	\$ 570,178	\$ 539,708

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

MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
	2022	2021	2020
Operating activities:			
Net income	\$ 128,959	\$ 110,472	\$ 87,240
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	6,663	7,914	8,946
Equity-based compensation	59,361	43,259	33,355
Loss (gain) on disposal of equipment	(89)	7	21
Deferred income taxes	(29,711)	(1,912)	1,036
Unrealized foreign currency (gain) loss	(1,515)	(493)	897
Changes in operating assets and liabilities:			
Accounts receivable, net	(44,056)	(16,650)	(6,592)
Other assets	(10,247)	(6,533)	(971)
Accounts payable, accrued and other liabilities	11,794	12,256	(3,097)
Income taxes	765	(3,667)	1,886
Deferred revenue	57,706	40,530	18,164
Net cash provided by operating activities	<u>179,630</u>	<u>185,183</u>	<u>140,885</u>
Investing activities:			
Purchases of property and equipment	(6,587)	(4,016)	(2,730)
Net cash used in investing activities	<u>(6,587)</u>	<u>(4,016)</u>	<u>(2,730)</u>
Financing activities:			
Purchase of common stock	(204,460)	(120,418)	(43,561)
Net cash used in financing activities	<u>(204,460)</u>	<u>(120,418)</u>	<u>(43,561)</u>
Foreign currency impact on cash	<u>(6,826)</u>	<u>(1,748)</u>	<u>(567)</u>
Net change in cash and cash equivalents	<u>(38,243)</u>	59,001	94,027
Cash and cash equivalents at beginning of period	263,706	204,705	110,678
Cash and cash equivalents at end of period	<u>\$ 225,463</u>	<u>\$ 263,706</u>	<u>\$ 204,705</u>
Supplemental disclosures of cash flow information:			
Cash paid for taxes	<u>\$ 58,022</u>	<u>\$ 29,162</u>	<u>\$ 23,766</u>

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

MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES
Consolidated Statements of Shareholders' Equity
(in thousands, except share data)

	Common Stock		Additional	Retained	Accumulated	Total
	Shares	Amount	Paid-In	Earnings	Other	Shareholders'
			Capital		Comprehensive	Equity
					Income (Loss)	
Balance, December 31, 2019	63,456,986	\$ 635	\$ -	\$ 159,490	\$ (17,847)	\$ 142,278
Repurchase of common stock	(562,299)	(6)	(33,349)	(10,206)	-	(43,561)
Restricted stock units issuance	632,499	6	(6)	-	-	-
Equity-based compensation	-	-	33,355	-	-	33,355
Foreign currency translation adjustment	-	-	-	-	(415)	(415)
Net income	-	-	-	87,240	-	87,240
Balance, December 31, 2020	63,527,186	635	-	236,524	(18,262)	218,897
Repurchase of common stock	(887,782)	(9)	(43,254)	(77,155)	-	(120,418)
Restricted stock units issuance	515,090	5	(5)	-	-	-
Equity-based compensation	-	-	43,259	-	-	43,259
Foreign currency translation adjustment	-	-	-	-	(1,566)	(1,566)
Net income	-	-	-	110,472	-	110,472
Balance, December 31, 2021	63,154,494	631	-	269,841	(19,828)	250,644
Repurchase of common stock	(1,569,531)	(16)	(59,355)	(145,089)	-	(204,460)
Restricted stock units issuance	606,607	6	(6)	-	-	-
Equity-based compensation	-	-	59,361	-	-	59,361
Foreign currency translation adjustment	-	-	-	-	(7,704)	(7,704)
Net income	-	-	-	128,959	-	128,959
Balance, December 31, 2022	62,191,570	621	-	253,711	(27,532)	226,800

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

MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2022, 2021 and 2020

1. Organization, Consolidation and Summary of Significant Accounting Policies

Organization and Business

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

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

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

We currently derive a substantial portion of our revenues from sales of cloud solutions and related services and hardware. The markets for supply chain commerce solutions are highly competitive, subject to rapid technological change, changing customer needs, frequent new product introductions, and evolving industry standards that may render existing products and services obsolete. As a result, our position in these markets could be eroded rapidly by unforeseen changes in customer requirements for application features, functions, and technologies.

Our international business is subject to risks typical of an international business, including, but not limited to, differing economic conditions, changes in political climate, differing tax structures, other regulations and restrictions, and foreign exchange rate volatility. We recognized foreign exchange gains of \$4.7 million in 2022, compared to foreign exchange losses of \$0.2 million and \$0.4 million in 2021 and 2020, respectively. Foreign exchange rate transaction gains and losses are classified in “Other (loss) income, net” on the Consolidated Statements of Income.

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

Principles of Consolidation and Foreign Currency Translation

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

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

Summary of Significant Accounting Policies

Cash and Cash Equivalents

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

Concentrations of Credit Risk

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

Our sales are primarily to companies located in the United States, Europe and Asia. We perform periodic credit evaluations of our customers' financial condition and do not require collateral. Accounts receivable are due principally from large U.S., European and Asia Pacific companies under stated contract terms. Accounts receivable, net as of December 31, 2022 for the Americas, EMEA, and APAC segments were \$133.6 million, \$28.1 million, and \$5.0 million, respectively. Accounts receivable, net as of December 31, 2021 for the Americas, EMEA, and APAC segments were \$100.4 million, \$19.5 million, and \$4.5 million, respectively. Our top five customers in aggregate accounted for 11%, 12%, and 12% of total revenue recognized for each of the years ended December 31, 2022 ("2022"), the year ended December 31, 2021 ("2021"), and the year ended December 31, 2020 ("2020"), respectively. No single customer accounted for more than 10% of revenue in 2022, 2021 and 2020, or more than 10% of accounts receivable as of December 31, 2022 and 2021.

Fair Value Measurement

We measure our investments based on a fair value hierarchy disclosure framework that prioritizes and ranks the level of market price observability used in measuring assets and liabilities at fair value. Market price observability is affected by a number of factors, including the type of asset or liability and their characteristics. This hierarchy prioritizes the inputs into three broad levels as follows:

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

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

At December 31, 2022, the Company's cash and cash equivalents were \$118.9 million and \$106.6 million, respectively. We currently have no long-term investments. Cash equivalents consist of highly liquid money market funds of \$100.4 million and certificates of deposit of \$6.2 million. For money market funds, we use quoted prices from active markets that are classified as Level 1, the highest level of observable input in the disclosure hierarchy framework. The Company had no investments at December 31, 2022.

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

Use of Estimates

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

Revenue Recognition

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

Nature of Products and Services

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

Our perpetual software licenses provide the customer with a right to use the software as it exists at the time of purchase. We recognize revenue for distinct software licenses once the license period has begun and we have made the software available to the customer. Our perpetual software licenses are typically sold with maintenance under which we provide a comprehensive 24 hours per day, 365 days per year program that provides customers with software upgrades, when and if available, which include additional or improved functionality and technological advances incorporating emerging supply chain and industry initiatives. Revenue related to maintenance is generally paid in advance and recognized over the term of the agreement, typically twelve months.

Our services revenue consists of fees generated from implementation, training and application managed services, including reimbursements of out-pocket expenses in connection with our implementation services. Implementation services include system planning, design, configuration, testing, and other software implementation support, and are typically optional and distinct from our software. Following implementation, customers may purchase application managed services to support and maintain our software. Fees for our services are separately priced and are generally billed on an hourly basis, and revenue is recognized over time as the services are performed. In certain situations, we render professional services under agreements based upon a fixed fee for portions of or all of the engagement. Revenue related to fixed-fee-based services contracts is recognized over time based on the proportion performed.

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

Significant Judgements

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

Contract Balances

Cloud subscriptions and maintenance are typically billed annually in advance. Timing of invoicing to customers may differ from timing of revenue recognition. Payment terms for our software licenses vary. We have an established history of collecting under the terms of our software license contracts without providing refunds or concessions to our customers. Cloud subscriptions and maintenance are typically billed annually in advance. Services are typically billed monthly as performed. In instances where the timing of revenue recognition differs from the timing of invoicing, we have determined that our contracts generally do not include a significant financing component. The primary purpose of our invoicing terms is to provide customers with predictable ways to purchase our software and services, not to provide or receive financing. Additionally, we are applying the practical expedient to exclude from consideration any contracts with payment terms of one year or less as we rarely offer terms extending beyond one year.

Deferred revenue mainly represents amounts collected prior to having completed performance of maintenance, cloud subscriptions and professional services. \$147.5 million of revenue that was included in the deferred revenue balance as of December 31, 2021 was recognized in 2022.

No revenue was recognized in 2022 from performance obligations that were satisfied in prior periods.

Remaining Performance Obligations

As of December 31, 2022, approximately \$1,051.5 million of revenue is expected to be recognized from remaining performance obligations. Over 97% of our reported performance obligations represent cloud native subscriptions with a non-cancelable term greater than one year (including cloud-deferred revenue as well as amounts we will invoice and recognize as revenue from our performance of cloud services in future periods). Maintenance contracts are typically one year in duration and are not included in the remaining performance obligations. We expect to recognize revenue on approximately 40% of these remaining performance obligations over the next 24 months with the balance recognized thereafter. We have elected not to provide disclosures regarding remaining performance obligations for contracts with a term of 1 year or less.

Returns and Allowances

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

We record an allowance for doubtful accounts based on historical experience of write-offs and a detailed assessment of accounts receivable. Additions to the allowance for credit losses generally represent a sales allowance on services revenue, which are recorded to operations as a reduction to services revenue. Total amount charged to operations in 2022, 2021 and 2020 was \$5.4 million, \$2.5 million and \$3.5 million, respectively.

Our analysis involved utilizing a model of internal historical losses data. In estimating the allowance for doubtful accounts, we consider the age of the accounts receivable, our historical write-offs, and the creditworthiness of the customer, among other factors. Should any of these factors change, the estimates made by us will also change accordingly, which could affect the level of our future allowances. We also analyzed future expected credit losses given ever present changes to future risks in projected economic conditions and future risks of customer collection.

Deferred Commissions

We consider sales commissions to be incremental costs of obtaining a contract with a customer. We defer and recognize an asset for sales commissions related to performance obligations with an expected period of benefit of more than one year. We apply the practical expedient to expense sales commissions when the amortization period would have been one year or less. Deferred commissions were \$29.9 million as of December 31, 2022, of which \$21.9 million is included in other assets and \$8.0 million is included in prepaid expenses. Deferred commissions were \$23.2 million as of December 31, 2021, of which \$16.9 million is included in other assets and \$6.3 million is included in prepaid expenses. Sales commission expense is included in Sales and Marketing expense in the accompanying consolidated statement of operations. Amortization of sales commissions in 2022, 2021 and 2020 was \$7.5 million, \$5.2 million and \$3.1 million respectively. No impairment losses were recognized during 2022, 2021 and 2020.

Property and Equipment

Property and equipment is recorded at cost and consists of furniture, computers, other office equipment, and leasehold improvements. We depreciate the cost of furniture, computers, and other office equipment on a straight-line basis over their estimated useful lives (five years for office equipment, seven years for furniture and fixtures). Leasehold improvements are depreciated over the lesser of their useful lives or the term of the lease. Depreciation and amortization expense for 2022, 2021 and 2020 was approximately \$6.7 million, \$7.9 million, and \$8.9 million, respectively, and was included in "Depreciation and amortization" in the Consolidated Statements of Income. Amortization expense on intangible assets in 2022, 2021 and 2020 was immaterial.

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

	December 31,	
	2022	2021
Office equipment	\$ 39,273	\$ 37,435
Furniture and fixtures	4,871	5,012
Leasehold improvement	23,518	24,142
Property and equipment, gross	67,662	66,589
Less accumulated depreciation	(54,859)	(52,700)
Property and equipment, net	<u>\$ 12,803</u>	<u>\$ 13,889</u>

Software Development Costs

Research and development expenses are charged to expense as incurred. For 2022, 2021 and 2020, we did not capitalize any internal research and development costs because the costs incurred between the attainment of technological feasibility for the related software product through the date when the product was available for general release to customers were insignificant.

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

Impairment of Long-Lived Assets

We review the values assigned to long-lived assets, including property and certain intangible assets, to determine whether events and circumstances have occurred which indicate that the remaining estimated useful lives may warrant revision or that the remaining balances may not be recoverable. In such reviews, undiscounted cash flows associated with these assets are compared with their carrying value to determine if a write-down to fair value is required. During 2022, 2021 and 2020, we did not recognize any impairment charges associated with our long-lived or intangible assets.

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

Goodwill and Impairment of Goodwill

Goodwill

Goodwill represents the excess of the consideration transferred over the fair value of net identified tangible and intangible assets and liabilities acquired. We do not amortize goodwill. Instead, we evaluate goodwill for impairment on at least an annual basis. Goodwill was \$62.2 million at the end of both years ended December 31, 2022 and 2021.

Impairment of Goodwill

We evaluate the carrying value of goodwill annually as of December 31 and between annual evaluations if events occur or circumstances change that would more likely than not reduce the fair value of the reporting unit below its carrying amount. Such circumstances could include, but are not limited to, (1) a significant adverse change in legal factors or in business climate, (2) unanticipated competition, or (3) an adverse action or assessment by a regulator.

We applied the simplified goodwill impairment test for 2022, that permits companies to perform a qualitative assessment based on economic, industry and company-specific factors as the initial step in the annual goodwill impairment test for all or selected reporting units. Based on the results of the qualitative assessment, companies are only required to perform Step 1 of the annual impairment test for a reporting unit if the company concludes that it is not more likely than not that the unit's fair value is less than its carrying amount. To the extent we conclude that it is more likely than not that a reporting unit's estimated fair value is less than its carrying amount, the two-step approach is applied. The first step would require a comparison of each reporting unit's fair value to the respective carrying amount. If the carrying amount exceeds the fair value, a second step is performed to measure the amount of impairment loss, if any. We did not identify any macroeconomic or industry conditions as of December 31, 2022, that would indicate that the fair value of the reporting units were more likely than not to be less than their respective carrying values. If circumstances

change or events occur to indicate that it is more likely than not that the fair value of any reporting units have fallen below their carrying amount, we would record an impairment charge based on that difference. We performed our periodic review of goodwill for impairment as of December 31, 2022 and 2021, and did not identify any impairment as a result of the review.

Guarantees and Indemnities

We account for guarantees in accordance with the guarantee accounting topic in the FASB Codification. Our customer contracts generally contain infringement indemnity provisions. Under those provisions, we generally agree, subject to certain exceptions, to indemnify, defend, and hold harmless the customer in connection with third party claims against the customer alleging that the customer's use of our software products in compliance with their license infringe the third party's patent, copyright, or other intellectual property rights. Conditions to our obligations generally include that we are provided the right to control the defense of the claims and, in general, to control settlement negotiations. Those provisions generally provide also that, if the customer is prevented from using our software because of a third party infringement claim, our sole obligation (in addition to the indemnification, defense, and hold harmless obligation referred to above) is to, at our expense, (i) procure for the customer the right to continue to use the software, (ii) to replace or modify the product so that its use by the customer does not infringe, or, if either of the foregoing are not reasonably feasible, to terminate the customer contract and provide a refund of the unamortized portion of the customer's license fee (based on a five year amortization period). Our customer contracts sometimes also require us to indemnify, defend, and hold harmless the customer in connection with death, personal injury, or property damage claims made by third parties with respect to actions of our personnel or contractors. The indemnity obligations contained in our customer contracts generally have no specified expiration date and no specified monetary limitation on liability. We have not previously incurred costs to settle claims or pay awards under these indemnification obligations. We account for these indemnity obligations in accordance with FASB guidance on accounting for contingencies, and record a liability for these obligations when a loss is probable and reasonably estimable. We have not recorded any liabilities for these contracts as of December 31, 2022, or 2021.

In general, in our customer software license contracts, we warrant to our customers that our software products will perform in all material respects in accordance with the standard published specifications in effect at the time of delivery of the licensed products to the customer for six months after first use of the licensed products, but no more than 24 months after execution of the license agreement. We also generally warrant in our Cloud subscription agreements that we will perform the Cloud services in all material respects as defined in the agreement during the service period. Additionally, we warrant to our customers that services will be performed consistent with generally accepted industry standards or specific service levels through completion of the agreed upon services. If necessary, we will provide for the estimated cost of product and service warranties based on specific warranty claims history. However, we have not incurred significant recurring expenses under product or service warranties. As a result, we believe the estimated fair value of these agreements is nominal. Accordingly, we have no liabilities recorded for these agreements as of December 31, 2022 and 2021.

Segment Information

We have three reportable segments as defined by the FASB Codification topic for segment reporting: Americas, EMEA, and APAC. See Note 8 for discussion of our reportable segments.

Basic and Diluted Net Income Per Share

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

Diluted net income per share is computed using net income divided by Weighted Shares and the treasury stock method effect of common equivalent shares ("CEs") outstanding for each period presented. In the following table, we present a reconciliation of

earnings per share and the shares used in the computation of earnings per share for the years ended December 31, 2022, 2021 and 2020 (in thousands, except per share data):

	Year Ended December 31,		
	2022	2021	2020
	(in thousands, except per share data)		
Net income	\$ 128,959	\$ 110,472	\$ 87,240
Earnings per share:			
Basic	\$ 2.05	\$ 1.74	\$ 1.37
Effect of CEs	(0.02)	(0.02)	(0.01)
Diluted	\$ 2.03	\$ 1.72	\$ 1.36
Weighted average number of shares:			
Basic	62,768	63,445	63,538
Effect of CEs	640	878	795
Diluted	63,408	64,323	64,333

The number of anti-dilutive CEs in 2022, 2021 and 2020 was immaterial. See Note 2 for further information on those securities.

Accumulated Other Comprehensive Income

Comprehensive income includes net income and foreign currency translation adjustments that are excluded from net income and reflected in shareholders' equity. The entire accumulated other comprehensive income balance as of December 31, 2022 and 2021 represents foreign currency translation adjustments.

Accounting for Income Taxes

We provide for the effect of income taxes on our financial position and results of operations in accordance with the Income Taxes Topic of the Codification. Under this accounting pronouncement, income tax expense is recognized for the amount of income taxes payable or refundable for the current year and for the change in net deferred tax assets or liabilities resulting from events that are recorded for financial reporting purposes in a different reporting period than recorded in the tax return. Management must make significant assumptions, judgments, and estimates to determine our current provision for income taxes and also, our deferred tax assets and liabilities, and any valuation allowance to be recorded against our net deferred tax asset.

Our judgments, assumptions, and estimates relative to the current provision for income tax take into account current tax laws, our interpretation of current tax laws, allowable deductions, projected tax credits, and possible outcomes of current and future audits conducted by foreign and domestic tax authorities. We do not recognize a tax benefit unless we conclude that it is more likely than not that the benefit will be sustained on audit by the taxing authority based solely on the technical merits of the associated tax position. If the recognition threshold is met, we recognize a tax benefit measured at the largest amount of the tax benefit that, in our judgment, is greater than 50 percent likely to be realized. Changes in tax law or our interpretation of tax laws and the resolution of current and future tax audits could significantly impact the amounts provided for income taxes in our financial position and results of operations. Our assumptions, judgments, and estimates relative to the value of our net deferred tax asset take into account predictions of the amount and category of future taxable income. Actual operating results and the underlying amount and category of income in future years could render our current assumptions, judgments, and estimates of recoverable net deferred taxes inaccurate, thus materially impacting our financial position and results of operations.

Equity-Based Compensation

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

Advertising Costs

We expense advertising costs as incurred. Advertising expense was \$1.2 million in 2022, \$2.3 million in 2021, and \$1.6 million in 2020.

Retirement of Repurchased Shares

We immediately retire shares repurchased pursuant to any share repurchase program. We allocate the share purchase price in excess of par value between additional paid-in capital and retained earnings.

2. Equity-Based Compensation

Equity Based Compensation Plans

In May 2020, the Manhattan Associates, Inc. 2020 Equity Incentive Plan (the “2020 Plan”) was approved by our shareholders. The 2020 Plan provides for the grant of stock options, restricted stock, restricted stock units, and stock appreciation rights. Vesting conditions can be service-based or performance-based, or a combination of both. The number of shares subject to outstanding awards under the 2007 Stock Incentive Plan (the “2007 Plan”) that are forfeited or canceled or expire after the Effective Date, in accordance with the terms of the 2007 Plan, are counted as one share toward the 2020 Plan.

A maximum of 4,500,000 shares are available for grant under the amended 2020 Plan. Each stock option, stock appreciation right, restricted stock, or restricted stock unit granted is counted against the maximum share limitation as one share. Options and stock appreciation rights cannot have a term exceeding seven years. As of December 31, 2022, there were 3,439,854 shares available for issuance under the 2020 Plan. The 2020 Plan is administered by the Compensation Committee of the Board of Directors. The committee has the authority to interpret the provisions thereof.

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

Restricted Stock Awards

We present below a summary of changes in unvested units of restricted stock during 2022:

	Number of Units	Grant Date Fair Value
Outstanding at January 1, 2022	1,388,467	\$85.05
Granted	683,271	123.75
Vested	(606,607)	76.33
Forfeited	(37,300)	114.56
Outstanding at December 31, 2022	1,427,831	\$106.50

The Company recorded equity-based compensation expense related to restricted stock and RSUs (collectively “restricted stock awards”) of \$59.4 million, \$43.3 million, and \$33.4 million in 2022, 2021 and 2020, respectively. The total fair value of restricted stock awards vested in 2022, 2021 and 2020, based on market value at the vesting dates was \$81.4 million, \$59.8 million, and \$52.2 million, respectively. The weighted average grant-date fair value of RSUs granted during fiscal year 2022, 2021 and 2020 was \$123.75, \$128.62 and \$77.20, respectively. As of December 31, 2022, unrecognized compensation cost related to unvested RSU totaled \$93.7 million and is expected to be recognized over a weighted average period of approximately 2.7 years. We recognize forfeitures of equity-based payments as they occur.

Included in RSU grants for the year ended December 31, 2022 are 273,158 units that have performance-based vesting criteria granted at target level for 2022 and performance adjustments above target level for 2021. The performance criteria are tied to our financial performance. As of December 31, 2022, the associated equity-based compensation expense has been recognized for the portion of the award attributable to the 2022 performance criteria.

3. Income Taxes

We are subject to future federal, state, and foreign income taxes and have recorded net deferred tax assets on the Consolidated Balance Sheets at December 31, 2022 and 2021. Deferred tax assets and liabilities are determined based on the difference between the financial accounting and tax bases of assets and liabilities. We present below significant components of our deferred tax assets and liabilities as of December 31, 2022 and 2021 are as follows (in thousands):

	December 31,	
	2022	2021
Deferred tax assets:		
Accounts receivable	\$ 1,321	\$ 570
Accrued liabilities	9,208	9,273
Equity-based compensation	9,832	7,763
Capitalized costs	27,516	515
Accrued sales taxes	190	196
Operating lease liabilities	2,974	4,593
State tax credits	2,700	4,521
Tax credit - foreign	3,108	1,238
Valuation allowance	(2,735)	(4,403)
Other	279	531
	<u>54,393</u>	<u>24,797</u>
Deferred tax liabilities:		
Intangible Assets	7,428	7,380
Depreciation	580	666
Deferred commissions	6,408	4,763
Operating lease right-of-use assets	2,771	4,338
	<u>17,187</u>	<u>17,147</u>
Net deferred tax assets	<u>\$ 37,206</u>	<u>\$ 7,650</u>

We present below income from domestic and foreign operations before income tax expense for the years ended December 31, 2022, 2021 and 2020 are as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Domestic	\$ 139,217	\$ 120,565	\$ 101,681
Foreign	18,904	13,507	12,095
Total	<u>\$ 158,121</u>	<u>\$ 134,072</u>	<u>\$ 113,776</u>

The components of our income tax provision for the years ended December 31, 2022, 2021 and 2020 are as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Current:			
Federal	\$ 42,198	\$ 14,042	\$ 13,860
State	11,183	5,188	4,793
Foreign	5,492	6,309	6,847
	<u>\$ 58,873</u>	<u>\$ 25,539</u>	<u>\$ 25,500</u>
Deferred:			
Federal	(22,383)	(427)	(393)
State	(5,200)	(531)	1,113
Foreign	(2,128)	(981)	316
	<u>(29,711)</u>	<u>(1,939)</u>	<u>1,036</u>
Total	<u>\$ 29,162</u>	<u>\$ 23,600</u>	<u>\$ 26,536</u>

We currently have a tax holiday in India under the Special Economic Zone Act through March 2029. As a result of this holiday, we had pre-tax income of approximately \$12.2 million, for the year ended December 31, 2022, that was not subject to tax. Separately, we are subject to India's Minimum Alternate Tax ("MAT") and accordingly incurred income tax expense of approximately \$2.0 million in 2022. The impact on diluted earnings per share if the income had been fully taxable would have been a decrease of \$0.03 per share in 2022.

We have tax credit carry-forwards of approximately \$3.4 million available to offset future state tax. These tax credit carry-forwards expire in 2026 to 2033. These credits represent a deferred tax asset of \$2.7 million after consideration of the federal benefit of state tax deductions. A valuation allowance of \$1.4 million has been established for these credits because the ability to use them is not more likely than not. We also have a tax credit carry-forward of approximately \$3.1 million available to offset future foreign tax. This tax credit carryforward begins expiring in 2036.

At December 31, 2022 we had approximately \$72.0 million of undistributed earnings and profits. The undistributed earnings and profits are considered previously taxed income and would not be subject to U.S. income taxes upon repatriation of those earnings, in the form of dividends. The undistributed earnings and profits are considered to be permanently reinvested, accordingly no provision for local withholdings taxes have been provided, however, upon repatriation of those earnings, in the form of dividends, we could be subject to additional local withholding taxes.

We present below a summary of the items that cause recorded income taxes to differ from taxes computed using the statutory federal income tax rate for the years ended December 31, 2022, 2021 and 2020:

	Year Ended December 31,		
	2022	2021	2020
Statutory federal income tax rate	21.0%	21.0%	21.0%
Effect of:			
State income tax, net of federal benefit	3.6	3.6	3.9
State credit carryforwards	1.2	(0.8)	0.5
U.S. federal R&D tax credit	(1.8)	(1.8)	(1.9)
Excess benefit of equity compensation	(4.8)	(4.9)	(3.4)
Employee compensation limitation	3.7	3.4	2.7
Global Intangible Low Taxed Income (GILTI)	0.1	0.2	0.1
Foreign-derived intangible income (FDII) deduction	(3.3)	(3.1)	(2.7)
Foreign operations	1.0	(0.7)	1.0
Tax contingencies	(1.3)	(0.3)	1.9
Other permanent differences	0.3	0.3	(0.2)
Change in valuation allowance	(1.3)	0.7	0.4
Income taxes	18.4%	17.6%	23.3%

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows for the years ended December 31, 2022, 2021 and 2020 (in thousands):

	December 31,		
	2022	2021	2020
Unrecognized tax benefits at January 1,	\$ (13,186)	\$ (12,804)	\$ (11,239)
Gross amount of increases in unrecognized tax benefits as a result of tax positions taken during a prior period	(199)	(408)	(118)
Gross amount of decreases in unrecognized tax benefits as a result of tax positions taken during a prior period	2,583	147	1,598
Gross amount of increases in unrecognized tax benefits as a result of tax positions taken during the current period	(1,787)	(3,117)	(3,256)
Reductions to unrecognized tax benefits relating to settlements with taxing authorities	-	148	-
Reductions to unrecognized tax benefits as a result of a lapse of the applicable statute of limitations	2,057	2,848	211
Unrecognized tax benefits at December 31,	\$ (10,532)	\$ (13,186)	\$ (12,804)

Our unrecognized tax benefits totaled \$10.5 million and \$13.2 million as of December 31, 2022 and 2021, respectively. Included in these amounts are unrecognized tax benefits totaling \$9.9 million and \$11.8 million as of December 31, 2022 and 2021, respectively, which, if recognized, would affect the effective tax rate.

We recognize potential accrued interest and penalties related to unrecognized tax benefits within our global operations in income tax expense. For the years ended December 31, 2022, 2021 and 2020, the Company recognized the following income tax expense: \$0.7 million, \$0.4 million, and \$0.4 million, respectively, for the potential payment of interest and penalties. Accrued interest and penalties were \$1.2 million and \$1.3 million for the years ended December 31, 2022 and 2021. We conduct business globally and, as a result, file income tax returns in the United State federal jurisdiction and in many state and foreign jurisdictions. We are generally no longer subject to U.S. federal, state, and local, or non-US income tax examinations for the years before 2010. Due to the expiration of statutes of limitations in multiple jurisdictions globally during 2023, the Company anticipates it is reasonably possible that unrecognized tax benefits may decrease by \$3.3 million.

4. Shareholders' Equity

During 2022, 2021 and 2020, we purchased 1,352,954, 709,200, and 337,007 shares of the Company's common stock for \$175.4 million, \$100.0 million, and \$25.0 million, respectively, through open market transactions as part of a publicly-announced share repurchase program. In January 2023, our Board of Directors authorized the Company to repurchase up to an aggregate of \$75 million of our common stock. Beginning in 2023, we will be subject to a 1% excise tax on stock repurchases as enacted by the United States Inflation Reduction Act which we will include in the cost of stock repurchases as a reduction of shareholders' equity.

5. Contingencies

From time to time, we may be involved in litigation relating to claims arising in the ordinary course of business, and occasionally legal proceeding not in the ordinary course. Many of our installations involve products that are critical to the operations of our clients' businesses. Any failure in our company's products could result in a claim for substantial damages against us, regardless of our responsibility for such failure. Although we attempt to contractually limit our liability for damages arising from product failures or negligent acts or omissions, there can be no assurance that the limitations of liability set forth in its contracts will be enforceable in all instances. We are not currently a party to any legal proceeding in the ordinary course of business or other legal proceedings the result of which we believe is likely to have a material adverse impact upon our business, financial position, results of operations, or cash flows. We expense legal costs associated with loss contingencies as such legal costs are incurred.

6. Employee Benefit Plan

We sponsor the Manhattan Associates 401(k) Plan and Trust (the "401(k) Plan"), a qualified profit sharing plan with a 401(k) feature covering substantially all our employees. Under the 401(k) Plan's deferred compensation arrangement, eligible employees who elect to participate in the 401(k) Plan may contribute up to 60% of eligible compensation up to \$20,500, as defined, to the 401(k) Plan. The Internal Revenue Service sets the eligible compensation limit at \$305,000 for 2022. Since 2012, we have provided a 50% matching contribution up to 6% of eligible compensation being contributed after the participant's first year of employment. During the years ended December 31, 2022, 2021 and 2020, the Company made matching contributions to the 401(k) Plan of \$6.1 million, \$5.2 million, and \$1.7 million, respectively.

7. Leases

We lease our facilities and some of our equipment under noncancelable operating lease arrangements that expire at various dates through 2029. The total operating lease liabilities for these leases at December 31, 2022 was approximately \$20.0 million. For a few of our facility leases, we have certain options to extend the lease term for up to 10 years, at our sole discretion. We have no finance leases.

We present below the operating lease right-of-use assets and lease liabilities as of December 31, 2022 (in thousands):

	December 31, 2022
ASSETS	
Operating lease right-of-use assets	\$17,794
LIABILITIES	
Operating lease liabilities, current (included in accrued and other liabilities)	\$5,962
Operating lease liabilities, long-term	14,065
Total operating lease liabilities	<u>\$20,027</u>

Aggregate future minimum lease payments under noncancelable operating leases as of December 31, 2022 are as follows (in thousands):

Year Ending December 31,	
2023	\$ 7,109
2024	6,130
2025	5,344
2026	2,491
2027	2,351
Thereafter	2,091
Total minimum payments required	25,516
Less short-term leases	(91)
Less imputed interest	(5,398)
Total operating lease liabilities	<u>\$ 20,027</u>

We are applying the practical expedient to not separate lease and non-lease components, which allows us to account for lease and non-lease components as a single lease component. The total lease cost in 2022 was \$7.7 million, consisting of \$7.3 million of operating lease costs, and \$0.4 million of short-term lease costs. The total lease cost in 2021 was \$7.9 million, consisting of \$7.5 million of operating lease costs, and \$0.4 million of short-term lease costs. Total lease costs in 2020 were \$7.9 million, consisting of \$7.5 million of operating lease costs, and \$0.4 million of short-term lease costs. Our variable lease cost during 2022, 2021 and 2020 were immaterial.

Weighted average remaining lease term	4.2 years
Weighted average discount rate	4%
Supplemental cash flow information - operating cash flows (in thousands):	
Cash paid for amounts included in the measurement of lease liabilities	
Operating cash flows for operating leases	\$ 7,159

8. Segment Reporting

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

The Americas segment charges royalty fees to the other segments based on cloud subscriptions and software licenses sold by those reportable segments. The royalties, which totaled \$8.9 million, \$6.1 million, and \$3.8 million in 2022, 2021 and 2020, respectively, are included in costs of revenue for each segment with a corresponding reduction in the America's cost of revenue. The revenues represented below are from external customers only. The geography-based costs consist of costs for professional services personnel, direct sales and marketing expenses, infrastructure costs to support the employee and customer base, billing and financial systems, management and general and administrative support. There are certain corporate expenses included in the Americas segment that we do not charge to the other segments. Such expenses include research and development, certain marketing and general and administrative costs that support the global organization, and the amortization of acquired developed technology. Costs in the Americas' segment include all research and development costs including the costs associated with our operations in India.

In accordance with the segment reporting topic of the FASB Codification, we present below financial information by reportable segment for 2022, 2021 and 2020 (in thousands):

	Year Ended December 31,							
	2022				2021			
	Americas	EMEA	APAC	Consolidated	Americas	EMEA	APAC	Consolidated
Revenue:								
Cloud subscriptions	\$ 148,943	\$ 22,988	\$ 4,527	\$ 176,458	\$ 103,863	\$ 15,380	\$ 2,952	\$ 122,195
Software license	16,364	6,380	2,104	24,848	29,300	5,729	2,041	37,070
Maintenance	113,258	19,784	9,156	142,198	113,169	23,091	9,581	145,841
Services	295,998	79,628	18,470	394,096	256,392	66,131	12,276	334,799
Hardware	29,321	158	5	29,484	23,491	243	4	23,738
Total revenue	603,884	128,938	34,262	767,084	526,215	110,574	26,854	663,643
Costs and Expenses:								
Cost of revenue	271,222	71,108	15,907	358,237	225,799	58,593	13,435	297,827
Operating expenses	227,409	17,187	4,888	249,484	202,217	16,496	4,856	223,569
Depreciation and amortization	5,964	613	86	6,663	7,020	738	156	7,914
Total costs and expenses	504,595	88,908	20,881	614,384	435,036	75,827	18,447	529,310
Operating income	\$ 99,289	\$ 40,030	\$ 13,381	\$ 152,700	\$ 91,179	\$ 34,747	\$ 8,407	\$ 134,333

	Year Ended December 31, 2020			
	Americas	EMEA	APAC	Consolidated
Revenue:				
Cloud subscriptions	\$ 69,469	\$ 8,465	\$ 1,896	\$ 79,830
Software license	30,509	4,308	3,467	38,284
Maintenance	116,309	22,208	9,231	147,748
Services	232,954	58,360	12,255	303,569
Hardware	16,698	241	2	16,941
Total revenue	465,939	93,582	26,851	586,372
Costs and Expenses:				
Cost of revenue	202,421	53,661	13,805	269,887
Operating expenses	174,477	14,461	4,540	193,478
Depreciation and amortization	7,932	823	191	8,946
Total costs and expenses	384,830	68,945	18,536	472,311
Operating income	\$ 81,109	\$ 24,637	\$ 8,315	\$ 114,061

In the following table, we present goodwill, long-lived assets, and total assets by reportable segment as of December 31, 2022 and 2021 (in thousands):

	As of December 31, 2022				As of December 31, 2021			
	Americas	EMEA	APAC	Consolidated	Americas	EMEA	APAC	Consolidated
Goodwill, net	\$ 54,766	\$ 5,501	\$ 1,963	\$ 62,230	\$ 54,766	\$ 5,510	\$ 1,963	\$ 62,239
Long lived assets	47,591	6,640	1,136	55,367	51,246	8,214	1,940	61,400
Total assets	488,064	65,491	16,623	570,178	468,600	54,021	17,087	539,708

For the years ended December 31, 2022, 2021 and 2020, we derived revenue from sales to customers outside the United States of approximately \$238.4 million, \$196.4 million, and \$178.1 million, respectively. Our remaining revenue was derived from domestic sales.

Cloud subscriptions revenue primarily relates to our Manhattan Active omnichannel, warehouse management solutions, and transportation management solutions for the year ended December 31, 2022. The majority of our software license revenue (over 85%) relates to our warehouse management product group for the same period.

9. Subsequent Events

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

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

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

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

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

Management's Report on Internal Control over Financial Reporting

Management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2022, and the report of Ernst & Young LLP on the effectiveness of our internal control over financial reporting are contained on pages 37 and 38 of this report.

Change in Internal Control over Financial Reporting

During the fourth quarter of 2022, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting, including any corrective actions with regard to material weaknesses.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. *Directors, Executive Officers and Corporate Governance*

The information required by this item is incorporated by reference from the information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1, 2023, under the captions “Election of Directors,” “Executive Officers,” “Section 16(a) Beneficial Ownership Reporting Compliance,” “Code of Ethics,” and “Board Committees.”

Item 11. *Executive Compensation*

The information required by this item is incorporated by reference from the relevant information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1, 2023, under the captions “Director Compensation,” “Executive Compensation,” “Compensation Committee Interlocks and Insider Participation,” and “Compensation Committee Report.”

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

The information required by this item is incorporated by reference from the relevant information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1, 2023, under the caption “Security Ownership of Certain Beneficial Owners and Management.” The information required by this item with respect to the Company’s securities authorized for issuance under equity compensation plans is included in Part II, Item 5 of this Form 10-K and is incorporated by reference herein.

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

The information required by this item is incorporated by reference from the relevant information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1, 2023, under the captions “Related Party Transactions” and “Election of Directors.”

Item 14. *Principal Accountant Fees and Services*

The information required by this item is incorporated by reference from the relevant information contained in our Proxy Statement for the Annual Meeting of Shareholders expected to be filed with the SEC on or prior to April 1, 2023, under the caption “Ratification of Appointment of Independent Registered Public Accounting Firm.”

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) 1. *Financial Statements.*

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

2. *Financial Statement Schedule.*

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

SCHEDULE II MANHATTAN ASSOCIATES, INC. AND SUBSIDIARIES VALUATION AND QUALIFYING ACCOUNTS (in thousands)

Classification:	Balance at Beginning of Period	Additions Charged to Operations	Net Deductions	Balance at End of Period
Allowance for Doubtful Accounts				
For the year ended:				
December 31, 2020	\$ 2,826	\$ 3,451	\$ 2,780 (a)	\$ 3,497
December 31, 2021	\$ 3,497	\$ 2,471	\$ 3,549 (a)	\$ 2,419
December 31, 2022	\$ 2,419	\$ 5,416	\$ 1,826 (a)	\$ 6,009
Deferred Tax Asset Valuation Allowance				
For the year ended:				
December 31, 2020	\$ 2,886	\$ 489	\$ - (b)	\$ 3,375
December 31, 2021	\$ 3,375	\$ 1,028	\$ - (b)	\$ 4,403
December 31, 2022	\$ 4,403	\$ -	\$ 1,668 (b)	\$ 2,735

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

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

(c) Represents current year cash payments.

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

3. *Exhibits.*

See (b) below.

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

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

Item 16. Form 10-K Summary

None.

EXHIBIT INDEX

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

Exhibit Number	Description
3.1	Articles of Incorporation of the Registrant dated February 24, 1998 (Incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2014 (File No. 00023999), filed on July 29, 2014).
3.2	Amended Bylaws of the Registrant (As Amended Effective July 18, 2019) (Incorporated by reference to Exhibit 3.2 to the Company's Form 8-K (File No. 000-23999), filed on March 9, 2022).
4.1	Description of Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934 (Incorporated by reference to Exhibit 4.1 to the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2020 (File No. 000-23999), filed on May 1, 2020).
10.1(a)	Lease Agreement by and between Wildwood Associates, a Georgia general partnership, and the Registrant, dated June 25, 2001 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report for the period ended June 30, 2001 (File No. 000-23999), filed August 14, 2001).
10.1(b)	First Amendment to Lease Agreement between Wildwood Associates, and the Registrant, dated June 10, 2002 (Incorporated by reference to Exhibit 10.6 to the Company's Annual Report for the period ended December 31, 2006 (File No. 000-23999), filed on March 14, 2007).
10.1(c)	Second Amendment to Lease Agreement between 2300 Windy Ridge Parkway Investors LLC, and the Registrant, dated February 27, 2007 (Incorporated by reference to Exhibit 10.7 to the Company's Annual Report for the period ended December 31, 2006 (File No. 000-23999), filed on March 14, 2007).
10.1(d)	Third Amendment to Lease Agreement between 2300 Windy Ridge Parkway Investors LLC, and the Registrant, dated June 14, 2007 (Incorporated by reference to Exhibit 10.2(d) to the Company's Annual Report for the period ended December 31, 2014 (File No. 000-23999), filed on February 5, 2015).
10.1(e)	Fourth Amendment to Lease Agreement between SP4 2300 Windy Ridge LP, and the Registrant, dated August 14, 2012 (Incorporated by reference to Exhibit 10.2(e) to the Company's Annual Report for the period ended December 31, 2014 (File No. 000-23999), filed on February 5, 2015).
10.1(f)	Fifth Amendment to Lease Agreement between 2300 Windy Ridge LLC, and the Registrant, dated May 19, 2014 (Incorporated by reference to Exhibit 10.2(f) to the Company's Annual Report for the period ended December 31, 2014 (File No. 000-23999), filed on February 5, 2015).
10.1(g)	Sixth Amendment to Lease Agreement between 2300 Windy Ridge LLC, and the Registrant, dated August 13, 2014 (Incorporated by reference to Exhibit 10.2(g) to the Company's Annual Report for the period ended December 31, 2014 (File No. 000-23999), filed on February 5, 2015).
10.1(h)	Seventh Amendment to Lease Agreement between 2300 Windy Ridge LLC and the Registrant, dated April 29, 2015 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2015 (File No. 000-23999), filed on July 28, 2015).
10.2(a)	Lease Deed by and between Brookefields Real Estate and Projects Private Limited and Manhattan Associates India Development Centre Private Ltd dated March 18, 2019 – Unit 1 (Incorporated by reference to Exhibit 10.34 to the Company's Form 10-Q for the period ended March 31, 2019 (File No. 000-23999), filed on April 25, 2019).
10.2(b)	Lease Deed by and between Brookefields Real Estate and Projects Private Limited and Manhattan Associates India Development Centre Private Ltd dated March 18, 2019 – Unit 2 (Incorporated by reference to Exhibit 10.35 to the Company's Form 10-Q for the period ended March 31, 2019 (File No. 000-23999), filed on April 25, 2019).
10.2(c)	Lease Deed by and between Brookefields Real Estate and Projects Private Limited and Manhattan Associates India Development Centre Private Ltd dated May 1, 2019 – 5,318 sq. ft. (Incorporated by reference to Exhibit 10.36 to the Company's Form 10-Q for the period ended June 30, 2019 (File No. 000-23999), filed on July 25, 2019).

Exhibit Number	Description
10.2(d)	Lease Deed by and between Brookfields Real Estate and Projects Private Limited and Manhattan Associates India Development Centre Private Ltd dated May 1, 2019 – 10,001 sq. ft. (Incorporated by reference to Exhibit 10.37 to the Company's Form 10-Q for the period ended June 30, 2019 (File No. 000-23999), filed on July 25, 2019).
10.20(a)*	2007 Stock Incentive Plan, as amended by the First Amendment thereto (Incorporated by reference to Annex A to the Company's Definitive Proxy Statement related to its 2009 Annual Meeting of Shareholders (File No. 000-23999) filed on April 20, 2009).
10.20(b)*	Second amendment to 2007 Stock Incentive Plan (Incorporated by reference to Annex A to the Company's Definitive Proxy Statement related to its 2011 Annual Meeting of Shareholders (File No. 000-23999) filed on April 15, 2011).
10.20(c)*	Third amendment to 2007 Stock Incentive Plan (Incorporated by reference to Annex A to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2017 (File No. 000-23999) filed on October 30, 2017).
10.21*	Form of Manhattan Associates, Inc. Restricted Stock Award Agreement for Non-Employee Directors (Incorporated by reference to Exhibit 10.49 to the Company's Annual Report for the period ended December 31, 2009 (File No. 000-23999), filed on February 19, 2010).
10.22*	Form of Manhattan Associates, Inc. Restricted Stock Unit Award Agreement for Employees
10.23*	Form of Manhattan Associates, Inc. Restricted Stock Unit Award Agreement for Non-Employee Directors
10.24*	Manhattan Associates, Inc. 2020 Equity Incentive Plan (incorporated by reference to Annex A to the Company's Definitive Proxy Statement related to its 2020 Annual Meeting of Shareholders filed with the Securities and Exchange Commission on March 30, 2020 (Commission File No. 000-23999))
10.30*	2016 Annual Cash Bonus Plan (Incorporated by reference from Annex B to the Company's Definitive Proxy Statement for its 2016 Annual Meeting of Shareholders filed with the SEC on April 8, 2016 (SEC File No. 000-23999)).
10.40*	Form of Executive Employment Agreement (Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q for the period ended September 30, 2018 (File No. 000-23999), filed on October 25, 2018).
10.41*	Schedule to Form of Executive Employment Agreement of Initial Salaries and Target Bonus Opportunities for Named Executive Officers.
10.42	Form of Director and Officer Indemnification Agreement with all Directors and Executive Officers (Incorporated by reference to Exhibit 10.2 to the Company's Form 8-K (File No. 000-23999) filed on April 4, 2013).
10.43*	Executive Employment Letter Agreement, dated July 27, 2016, by and between the Registrant and Dennis Story (Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K (File No. 000-23999), filed on August 1, 2016).
21.1	List of Subsidiaries.
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32**	Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document

Exhibit Number	Description
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	The cover page from the Company's Quarterly Report on Form 10-K for the year ended December 31, 2022, has been formatted in Inline XBRL.

* Management contract or compensatory plan or agreement.

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

SIGNATURES

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

MANHATTAN ASSOCIATES, INC.

By: /s/ Eddie Capel
Eddie Capel
*President, Chief Executive Officer, and
Director*

Date: February 6, 2023

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ John J. Huntz, Jr.</u> John J. Huntz, Jr.	Chairman of the Board	February 6, 2023
<u>/s/ Eddie Capel</u> Eddie Capel	President, Chief Executive Officer, and Director (Principal Executive Officer)	February 6, 2023
<u>/s/ Dennis B. Story</u> Dennis B. Story	Executive Vice President, Chief Financial Officer, and Treasurer (Principal Financial Officer)	February 6, 2023
<u>/s/ Linda C. Pinne</u> Linda C. Pinne	Senior Vice President, Global Corporate Controller, and Chief Accounting Officer (Principal Accounting Officer)	February 6, 2023
<u>/s/ Edmond I. Eger III</u> Edmond I. Eger III	Director	February 6, 2023
<u>/s/ Linda T. Hollembaek</u> Linda T. Hollembaek	Director	February 6, 2023
<u>/s/ Kimberly A. Kuryea</u> Kimberly A. Kuryea	Director	February 6, 2023
<u>/s/ Charles E. Moran</u> Charles E. Moran	Director	February 6, 2023
<u>/s/ Thomas E. Noonan</u> Thomas E. Noonan	Director	February 6, 2023
<u>/s/ Deepak Raghavan</u> Deepak Raghavan	Director	February 6, 2023

MANHATTAN ASSOCIATES, INC. SUBSIDIARIES

<u>Subsidiaries</u>	<u>Place of Incorporation</u>
Manhattan Associates Limited	United Kingdom
Manhattan Associates Europe B.V.	Netherland
Manhattan Associates France SARL	France
Manhattan Associates GmbH	Germany
Manhattan Associates KK	Japan
Manhattan Associates Software (Shanghai), Co. Ltd.	China
Manhattan Associates Pty Ltd.	Australia
Manhattan Associates Software Pte Ltd.	Singapore
Manhattan Associates (India) Development Centre Private Limited	India
Manhattan Associates, S. de R.L. de CV	Mexico
Manhattan Associates Services, S. de R.L. de CV	Mexico
Manhattan Associates Supply Chain Software, LLC	Georgia, USA
Manhattan Associates Chile SpA	Chile

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

1. Form S-8 No. 333-143611 pertaining to the Manhattan Associates, Inc. 2007 Stock Incentive Plan,
2. Form S-8 No. 333-159852 pertaining to the Manhattan Associates, Inc. 2007 Stock Incentive Plan,
3. Form S-8 No. 333-174499 pertaining to the Manhattan Associates, Inc. 2007 Stock Incentive Plan, and
4. Form S-8 No. 333-238503 pertaining to the Manhattan Associates, Inc. 2020 Equity Incentive Plan;

of our reports dated February 6, 2023, with respect to the consolidated financial statements and schedule of Manhattan Associates, Inc. and subsidiaries and the effectiveness of internal control over financial reporting of Manhattan Associates, Inc. and subsidiaries included in this Annual Report (Form 10-K) of Manhattan Associates, Inc. and subsidiaries for the year ended December 31, 2022.

/s/ Ernst & Young LLP

Atlanta, Georgia
February 6, 2023

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a)/15d-14(a), AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Eddie Capel, certify that:

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

Dated this 6th day of February, 2023

/s/ Eddie Capel

Eddie Capel, President and Chief Executive Officer

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a)/15d-14(d), AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Dennis B. Story, certify that:

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

Dated this 6th day of February, 2023

/s/ Dennis B. Story

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

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

This Certificate is being delivered pursuant to the requirements of Section 1350 of Chapter 63 (Mail Fraud) of Title 18 (Crimes and Criminal Procedures) of the United States Code and shall not be relied on by any person for any other purpose.

The undersigned, who are the Chief Executive Officer and Chief Financial Officer, respectively, of Manhattan Associates, Inc. (the “Company”), hereby each certify that, to the undersigned’s knowledge:

1. the Annual Report on Form 10-K of the Company for the twelve month period ended December 31, 2022 (the “Report”), which accompanies this Certification, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. all information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated this 6th day of February, 2023

/s/ Eddie Capel

Eddie Capel, President and Chief Executive Officer

/s/ Dennis B. Story

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

In accordance with SEC Release No. 34-47986, this Exhibit is furnished to the SEC as an accompanying document and is not deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that Section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933. A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to the registrant and will be retained by the registrant and furnished to the Securities and Exchange Commission or its staff upon request.

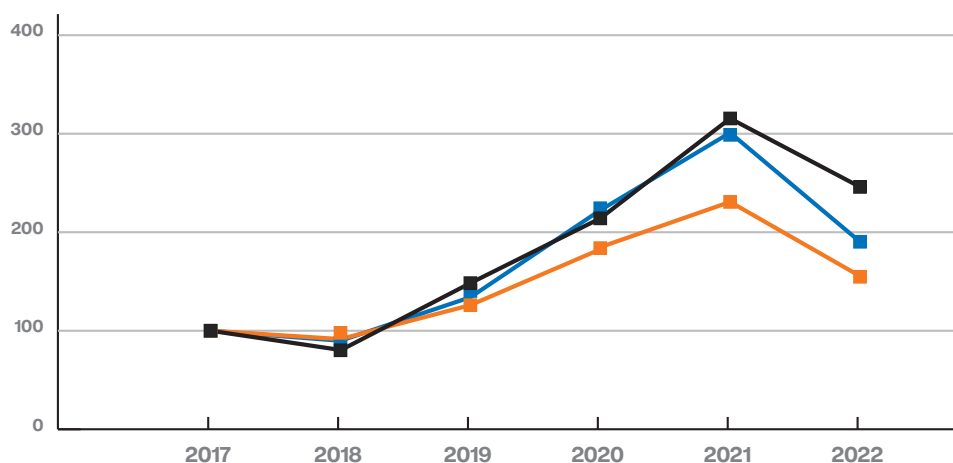
Stock Performance

The following graph compares Manhattan Associates, Inc.'s ("Manhattan") annual percentage change in cumulative total return on common shares over the past five years with the cumulative total return of companies comprising the NASDAQ Composite Index and the NASDAQ Computer Index. This presentation assumes that \$100 was invested in shares of the relevant issuers on December 31, 2017, and that dividends received were **immediately invested in additional shares**. **No cash dividends have been declared on shares of Manhattan common stock.** The graph plots the value of the initial \$100 investment at one-year intervals for the fiscal years shown. The data for the graph was provided to us by Zack Investment Research, Inc.

COMPARISON OF 5-YEAR CUMULATIVE TOTAL RETURN

Assumes Initial Investment of \$100

December 31, 2022



Stock performance Graph Data Points for fiscal year ended December 31:

	2017	2018	2019	2020	2021	2022
■ Manhattan Associates, Inc.	100	86	161	212	314	245
■ NASDAQ Composite	100	97	133	192	235	159
■ NASDAQ Computer Index	100	96	145	217	299	192

NASDAQ Symbol

The Company's common stock is traded on the Nasdaq Global Select Market under the symbol MANH. Additional copies of this 2022 10-K, filed with the Securities and Exchange Commission, may be obtained by shareholders online at www.manh.com or without charge by writing to Manhattan Associates Investor Relations at the Company's headquarters.

Registrar and Transfer

Computershare Trust Company, NA
Inquiries regarding stock transfers, lost certificates or address changes should be directed to Computershare.

First Class/Registered/
Certified Mail:
P.O. Box 505000
Louisville, KY 40233

Courier Services:
Meidinger Tower
462 South Fourth Street, 16th Floor
Louisville, KY 40202

Auditors

Ernst & Young LLP
Atlanta, Georgia

Legal Counsel

Kilpatrick Townsend & Stockton LLP
Atlanta, Georgia



manh.com

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 **Manhattan**
Associates®