

Manhattan Solutions for

PHARMACEUTICALS



Executive Summary

CHALLENGES

Pharmaceutical distributors and manufacturers are moving to a resilient and agile supply chain that ensures high performance in the face of ever-present supply chain pressures including:

- › Optimizing inventory to profitably handle supply chain disruptions.
- › Managing temperature control demands across the supply chain.
- › Maintaining service levels with the new labor normal.
- › Complying with traceability regulations.
- › Enabling new on-demand distribution models.
- › Managing increasing sustainability demands.

SOLUTIONS

Manhattan Associates enables pharmaceutical industry leaders to solve any pressure and activate their resilient and agile supply chain with:

- › **Warehouse Management** that accelerates the flow of goods and information and enables flawless execution across inventory, labor, advanced automation, robotics, and physical space.
- › **Labor Management** that delivers an integrated and mobile experience using data-driven gamification and real-time digital communication to self-motivate workers and incentivize employee performance.
- › **Slotting Optimization** that intelligently optimizes slotting moves and picking as part of overall distribution center management.
- › **Transportation Management** that provides faster, more capabilities for optimized planning, improving visibility, accelerating planning, and lowering costs.
- › **Inventory Optimization** that ensures critical items are available, providing complete inventory visibility supported by advanced demand forecasting.

OUTCOMES

Pharmaceutical distributors and manufacturers have realized significant business outcomes with Manhattan solutions:

- › Walgreen Boots Alliance experienced quicker and more accurate demand forecasts, which positively impacted the replenishment process and significantly reduced stock-outs.
- › Within one year, Harvard Drug's institutional division saw 6% growth from higher fill rates, and fill rates have improved by 430 base points year over year.
- › Shanghai Pharmaceuticals is prepared to effectively and comfortably handle its order volume peaks of 200% to 300%.



From the warehouse to the point of care, the pharmaceutical supply chain must be ready to withstand any disruption, support any regulation, and fulfill any demand. Manhattan Active® Supply Chain and Manhattan Active Inventory promote a resilient and agile pharmaceutical supply chain ready to overcome supply chain pressures and quickly enact change to meet new demands. Move your products more swiftly, safely, and efficiently with Manhattan.

Why Manhattan?

- › Our deep understanding of the pharma supply chain improves your business outcomes
- › Our feature-rich solutions support your most sophisticated pharmaceutical requirements
- › Our cloud-native technology is proven to enable a truly resilient and agile supply chain

Eight of the top 10 pharmaceutical wholesalers and many top manufacturers use Manhattan solutions to optimize their supply chain.





Focus on helping you overcome supply chain pressures

Industry leaders like you are investing in improving the resiliency and agility of their supply chain infrastructure. Forward-thinking companies are making supply chain investments to be more responsive to change and demands, improve efficiencies, streamline business processes, and enhance human performance. For example, an Accenture survey of pharmaceutical executives showed that 94% of surveyed companies are investing in improving visibility across the supply chain.¹ Manhattan is ready to help you succeed in today's and tomorrow's challenging supply chain environment with solutions that address and overcome critical supply chain pressures like the following:



OPTIMIZING INVENTORY TO PROFITABLY HANDLE SUPPLY CHAIN DISRUPTIONS

Seventy percent of pharmaceutical industry leaders believe their supply chain is vulnerable to ongoing disruptions, which deteriorates on-time, in-full delivery. Further, 63% of leaders have lost faith in their demand forecasts.² We worked with Walgreens Boots Alliance to strengthen their demand forecasts to ensure the right stock availability for customers using the intelligence and automation of [Manhattan Demand Forecasting and Replenishment](#).



MANAGING TEMPERATURE CONTROL DEMANDS ACROSS THE SUPPLY CHAIN

The industry is experiencing COVID-19 vaccine losses due to temperature excursions costing around \$34.1 billion annually,³ including lost product costs, replacement costs, and wasted logistics investment. We can help you strengthen logistics planning and execution to minimize excursions with our leading [Transportation Management System](#).



MAINTAINING SERVICE LEVELS WITH THE NEW LABOR NORMAL

Even as automation advances, robust supply chains rely on people. Labor shortages in the industry can have a significant impact where too few employees can cause delivery delays or inaccuracies, harming patient care. We help companies like yours streamline warehouse processes to increase productivity and optimize labor performance with our [Labor Management](#) capability.



COMPLYING WITH TRACEABILITY REGULATIONS

Government regulations are driving the strengthening of supply chain security and patient safety. Complying with traceability requirements, like those of the U.S. Drug Supply Chain Security Act, is complex and costly.⁴ We strive to make compliance easier, helping companies like [Raia](#) [Drogasil](#) achieve total traceability, supporting country regulations, and assuring quality for customers.



ENABLING ON-DEMAND DISTRIBUTION MODELS

Eighty percent of health care/pharmaceutical leaders believe changes in consumer attitudes, such as increasing demand for direct-to-patient delivery, will significantly impact their supply chain.⁵ As new distribution models proliferate, your supply chain must be ready to perform. Call on our expertise in activating omnichannel distribution flows in your operations, similar to how we helped [Medi-Market Group](#).



EXPANDING SUSTAINABILITY INITIATIVES

Environmental, social, and governance concerns are growing in importance for the industry. We can accelerate your sustainability goals by enabling more efficient operations and solving climate and other environmental issues. We can help you strengthen [inventory management](#) and [transportation management](#) to reduce waste created by spoilage and to reduce shipments and, thus, carbon emissions.



Built to help you improve supply chain performance

Realizing a resilient and agile supply means improving performance across your supply chain. We have designed and built our supply chain solutions to spur improvement in demand planning, warehouse operations, fulfillment, transportation execution, and on-line customer engagement. Here are some of the many supply chain key performance indicators (KPIs) we keenly focus on to help our pharmaceuticals customers improve and succeed:



DEMAND FORECAST ACCURACY

Helps you measure the accuracy of forecasted demand against actual demand at an individual item level, which is essential in understanding how well you manage inventory. **Demand Forecast Accuracy = difference between actual and forecast demand at an individual item level.**

Applying Manhattan Demand Forecasting, Walgreens Boots Alliance improved their inventory positions across the company's entire European wholesale operation, and Harvard Drug **reduced obsolete inventory by 35%.**



SALES ORDER FILL RATE/PROMISING

Enables you to understand if you can immediately meet your customers' orders with the current inventory. The order fill rate tracks the percentage of orders that are fillable, based on current stock. **Sales Order Fill Rate = (inventory / order quantity) x 100.**

Through improved inventory visibility and more accurate demand forecasting, Manhattan customer Harvard Drug saw **6% growth from higher fill rates; moreover, fill rates have improved by 430 base points**, year over year.



WAREHOUSE PRODUCTIVITY

Indicates productivity rate by which labor performs essential warehouse tasks (receiving, put-away, and picking/packing) that are critical to delivering on production/customer commitments while keeping costs in check. For example, **Receiving Productivity: (total time for stock validation + total time to add stock to records + total time to prep stock for storage) / hour.**

Using Manhattan Warehouse Management, Raia Drogasil significantly improved receiving and put-way productivity, resulting in a **30% reduction in total time between starting to unload a truck and placing items in their final position.**



KPIs where Manhattan has a significant impact.

Labor/Equipment Utilization

Measures the rate at which the workforce and equipment are utilized in the warehouse to fulfill orders. Manhattan solutions that can improve this KPI: Warehouse Management, Labor Management, Transportation Management

Gross Margin Return on Investment

Shows how much a pharma company made compared to how much it invested in stock purchases. Manhattan solutions that can improve this KPI: Warehouse Management, Labor Management, Transportation Management, Inventory Optimization

Customer Satisfaction Score

Measures the level of customer satisfaction with a pharma company's experience, such as fulfillment. Manhattan solutions that can improve this KPI: Inventory Optimization (Demand Forecasting and Replenishment), Warehouse Management, Transportation Management

Inventory Carrying Costs

Indicates the total of all expenses related to storing unsold goods, including depreciation, opportunity cost, and warehousing. Manhattan solutions that can improve this KPI: Inventory Optimization (Demand Forecasting), Warehouse Management

Inventory Turnover/Days to Sell

Shows the rate at which a pharma company replaces inventory in a period, due to sales. Manhattan solutions that can improve this KPI: Inventory Optimization (Demand Forecasting)

Obsolete Stock/Spoilage

Measures the amount of obsolete stock or spoiled inventory that cannot be sold (a critical indicator of supply chain viability). Manhattan solutions that can improve this KPI: Inventory Optimization (Demand Forecasting), Warehouse Management

Number/Duration of Temperature Excursions

Assesses operational efficiency and quality risk to products that must be kept within a temperature range. Manhattan solutions that can improve this KPI: Warehouse Management, Transportation Management

On-Time In-Full (OTIF)

Measures the number of cases delivered in full and on time as a percentage of all ordered cases – a key service level. Manhattan solutions that can improve this KPI: Warehouse Management

Order Cycle Times

Assesses distribution efficiency in the elapsed time from the release of an order to a warehouse and when it is shipped. Manhattan solutions that can improve this KPI: Warehouse Management, Labor Management, Slotting Optimization

Truckload Capacity Utilization Rate (Cube)

Measures truckload utilization and can indicate loading optimization problems that result in overspending. Manhattan solutions that can improve this KPI: Transportation Management

Fuel Economy (Miles Driven)

Assesses total miles driven and fuel utilized over a period of time. Route optimization can reduce miles, fuel, and carbon output. Manhattan solutions that can improve this KPI: Transportation Management

Tender Acceptance Rate

Shows shipping tenders rejected versus accepted. A lower acceptance rate can lead to higher costs. Manhattan solutions that can improve this KPI: Transportation Management

Distribution Costs

Measures all expenses involved in processing orders for distribution. Manhattan solutions that can improve this KPI: Warehouse Management, Labor Management, Slotting Optimization, Transportation Management

How we help you succeed

Manhattan Active® Supply Chain and Manhattan Active Inventory

Medicines and vaccines must be available when and where they are needed. From your warehouse to the point of care, your supply chain must be resilient to withstand any disruption and agile to adapt to any new regulation and demand. The resilient and agile pharmaceutical supply chain is essential today – a supply chain that consistently enables the right patient care and does so profitably.

The modern resilient and agile pharmaceutical supply chain is durably unified from inventory to delivery, giving you crystal-clear visibility and unprecedented control from one end of your supply chain to the other. Architected for the cloud for responsiveness, optimized through data sciences for greater efficiencies, and aligned through behavioral sciences for joint human and machine effectiveness, Manhattan Active Supply Chain and Manhattan Active Inventory deliver the modern pharmaceuticals supply chain that enables you to be always resilient and highly agile. Optimizing their supply chain is why 8 of the top 10 pharmaceutical wholesalers and many top manufacturers rely on our solutions and services.

How does Manhattan help you optimize and succeed? Our Inventory solutions help you ensure critical items are available, providing complete inventory visibility supported by advanced demand forecasting.

Our Warehouse Management solutions enable you to accurately and efficiently execute receiving to fulfillment seamlessly, expertly navigating regulations, storage requirements, tracking requirements, labor challenges, and service-level agreements. Our Transportation Management solutions route items to their desired location, with precise planning and execution supported by optimized carrier engagement to ensure timely delivery at the best cost while protecting temperature-sensitive shipments.

We understand the criticality of your supply chain to your company's mission. This criticality drives us to provide you with the best experts, services, and support to make our leading solutions work for your unique business and processes. Born from experience working with pharmaceutical industry leaders across the world, Manhattan Associates provides the

- › Leading supply chain solutions
- › Experience and expertise
- › Services and support

that enable pharmaceutical manufacturers and distributors to commerce confidently in the face of any supply chain pressure.





Why Manhattan for your supply chain

Manhattan Active Supply Chain and Manhattan Active Inventory

Our deep understanding of the pharma supply chain improves your business outcomes.

We have built valuable expertise working with industry leaders worldwide, including 8 of the top 10 pharmaceutical distributors. Our solutions are a result of this experience, and our expertise creates real measurable business outcomes and value for our customers. Consider this perspective from Shanghai Pharma:

“We are extremely satisfied with the services and solutions delivered by the Manhattan team, especially the quick and smooth nature of the whole deployment process. With its expertise and solid experience in carrying out similar projects around the globe, the team was able to turn challenges into opportunities. The success of this deployment has again proved that Manhattan is a trusted and reliable partner to assist us with our ongoing business expansion.”

Our feature-rich solutions support your most sophisticated pharmaceutical requirements.

We have delivered solutions to optimize the efficiency, agility, and safety of many of the world's largest pharmaceutical distribution networks. Our know-how and technology innovation combine to form long-lasting solutions to your supply chain problems and improvement opportunities. Consider this perspective from Cardinal Health:

“At Cardinal Health, we rely on the Manhattan Enterprise Mobility team for mobile device best practice expertise in support of our supply chain operations. We can always trust their knowledgeable recommendations and enthusiasm to assist in troubleshooting critical issues — even when the issue does not fall within their obligations.”

Our cloud-native, micro-services technology drives your resilient and agile supply chain.

Manhattan offers a truly unified supply chain solution from inventory to delivery and planning to execution, providing crystal-clear visibility and unprecedented control. Our cloud-native and micro-services architecture is flexibly composable and configurable to quickly and cost-effectively enable new processes, experiences, and outcomes. Optimized through data sciences and aligned through behavioral sciences, our solutions create work environments that foster the best of humans and automation to drive greater efficiency and productivity. Consider this perspective from Gartner:

A Leader in the 2022 Gartner® Magic Quadrant™ for Warehouse Management Systems (WMS), for the fourteenth consecutive time, Manhattan is once again positioned highest in Ability to Execute and furthest on Completeness of Vision. Manhattan is also a 2022 Gartner Magic Quadrant Leader for Transportation Management, for the fourth consecutive year, offering the only cloud-native, 100% micro-services Transportation Management System.

Find the capabilities to help you improve

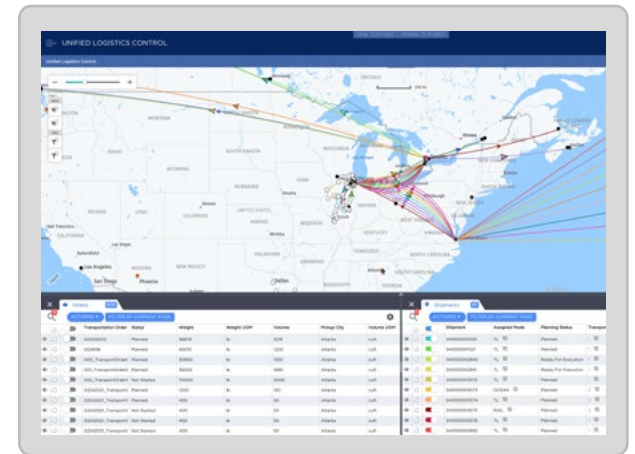
Manhattan Supply Chain Commerce

With Manhattan, flexibility is at the core of our solutions, allowing you to leverage the capabilities you need to solve your most pressing challenges and improve your supply chain performance. Maybe you want to naturally converge every element of distribution and transportation to achieve peak productivity and efficiency of automation and workforce resources. Possibly, your focus is optimizing your demand forecasting and inventory. Or maybe you seek to improve your warehouse operations. Regardless of the best option for your business, you'll get the advantages of the Manhattan Active platform: our cloud-native architecture that automatically scales when needed, never requires upgrading, and is fully extensible at the UI, data, and network levels with more than 10,000 APIs available. Here is a quick synopsis of our recommended solutions for the pharmaceutical supply chain, with links to learn more:



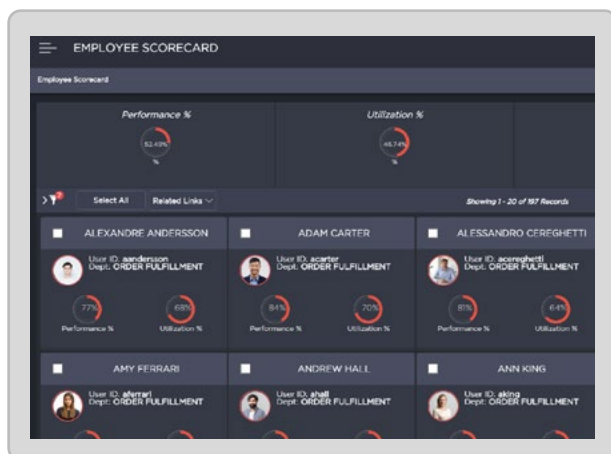
MANHATTAN ACTIVE WAREHOUSE MANAGEMENT

Engineered to enable a resilient supply chain, and agile enough for whatever comes next, Manhattan Active Warehouse Management unlocks the untapped potential of every warehouse/distribution center. Advance your warehouse operations beyond basic picking, packing, and shipping, including seamlessly orchestrating all work across man and machine, to create and flawlessly execute a hyper-flow of inbound and outbound goods and information. [Learn More >](#)



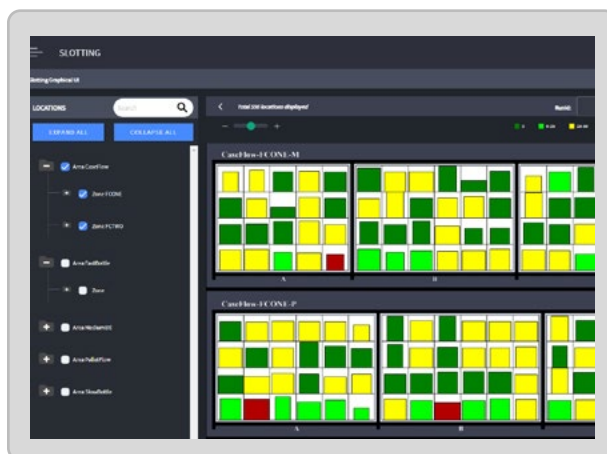
MANHATTAN ACTIVE TRANSPORTATION MANAGEMENT

Manhattan Active Transportation Management is the fastest, smartest, and easiest way for you to manage transportation planning and execution. Capabilities such as multi-modal optimization, unified logistics control, and pre-integrated rate and capacity management enable you to optimize routes, improve visibility, accelerate planning, and lower the cost of shipping while reducing carbon emissions. [Learn More >](#)



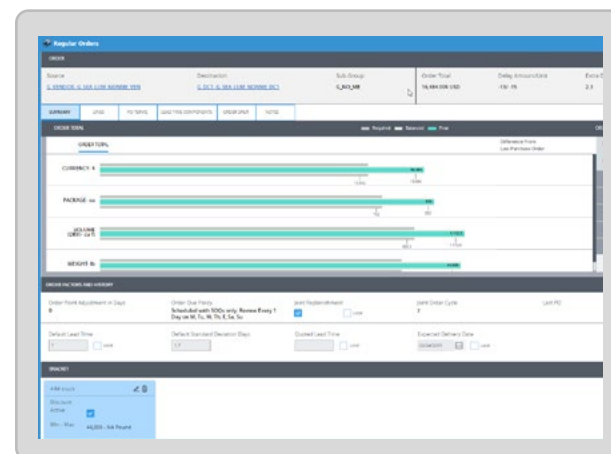
MANHATTAN ACTIVE LABOR MANAGEMENT

Once we understand what drives human desire, aspiration, and behavior, we can develop techniques and intuitive tools to create a more individual and rewarding work experience. Manhattan Active Labor Management uses data-driven gamification, real-time digital communication, automatic recognition, rewards programs, and more to move beyond labor management to true employee engagement and performance. [Learn More >](#)



MANHATTAN ACTIVE SLOTTING OPTIMIZATION

Manhattan Active Slotting Optimization provides unique, seamless integration of slotting moves and picking, engineered as part of overall distribution center management. It continuously optimizes slotting by analyzing seasonality, sales trends, and product variations, using applied intelligence while maintaining preferred-item sequencing and family groupings. [Learn More >](#)



MANHATTAN ACTIVE INVENTORY

Manhattan Active Inventory uses machine learning to continuously monitor and automatically fine-tune inventory, enabling precisely positioned inventory across your supply chain to reduce the risk of stockouts or oversupply. Demand Forecasting applies valuable visibility and insights into a wealth of structured and unstructured inventory data, unlocking new levels of predictive forecasting accuracy. [Learn more >](#)

See how we help
leaders like you
succeed





WALGREENS BOOTS ALLIANCE ACHIEVES INVENTORY SAVINGS AND IMPROVED SERVICE LEVELS

Manhattan solution: [Inventory Optimization – Demand Forecasting](#)

Walgreens Boots Alliance offers a range of products and services to customers in 20 countries throughout Europe. The company's wholesale and distribution network serves 135,000 pharmacies, hospitals, and health centers via 370 depots. The company decided to redesign its European logistics function and replace its various proprietary replenishment systems with one proven, reliable, and upgradeable forecasting and replenishment system. It desired to better identify and exploit buying opportunities, reduce inventory levels, improve service levels, and gain a clearer understanding of stock value.

Manhattan Demand Forecasting was deployed to enable the company's planners throughout Europe to make more informed buying decisions and improve the service provided to pharmacies and hospitals. Walgreens Boots Alliance first implemented the solution in the UK and then moved to the rest of Europe. The solution enabled the company's planning team to make highly accurate forecasts for the company's hundreds of thousands of SKUs across tens of thousands of product lines.

With the new solution, decisions about replenishing stocks are made from forecasts based on sales history, demand estimates, and promotions' potential effect. The solution has reduced the amount of inventory held while maintaining customer service at a consistently high level. Quicker and more accurate forecasts have positively impacted the replenishment process, significantly reducing stock-outs.

"We have no doubt that Manhattan Associates will help Walgreens Boots Alliance strongly improve our replenishment processes and inventory positions across our entire European wholesale operation."

Derek Terrell, Wholesale Project Manager, Walgreens Boots Alliance

[LEARN MORE](#)



Supports 135,000 pharmacies,
hospitals, and health centers



SHANGHAI PHARMACEUTICALS IMPLEMENTS AGILE AND HIGHLY INTELLIGENT SUPPLY CHAIN

Manhattan solution: [Warehouse Management](#)

Shanghai Pharmaceuticals Holding Co., Ltd. (aka, Shanghai Pharma), the largest pharmaceutical company in China, realized the importance of streamlining its warehouse operations to manage its growth and improve the overall efficiency and cost-effectiveness of its extensive distribution network of more than 40 subsidiaries and 30 logistics centers and warehouses. As a long-time supply chain partner, Shanghai Pharma turned to Manhattan Associates Warehouse Management to support its new 170,000-square-foot warehouse handling 110,000 stock-keeping units.

Since deploying the Manhattan solution, Shanghai Pharma has integrated material-handling equipment from its different warehouses. This integration has, in turn, reduced daily operational and logistics costs. The scalable nature of Manhattan's Warehouse Management solution means Shanghai Pharma can effectively and comfortably handle its order volume peaks each week when throughput volumes can surge by 200% to 300%. Today, Shanghai Pharma processes a daily fulfillment volume of up to 35,000 cases per day from the new warehouse.

"We benefited hugely from the original implementation of Manhattan's supply chain technology. For the new warehouse, we wanted to establish an even more advanced supply chain systems capability that would not just manage the warehouse and logistics facilities but would also serve as an independent, open, and intelligent supply chain IT platform that could help further reduce human errors, drive down costs throughout our distribution network, and successfully integrate a number of our warehouses."

Shanghai Pharma's Logistics Department

[LEARN MORE](#)



Fulfills 35,000 cases per day



RAIA DROGASIL OPTIMIZES WAREHOUSE MANAGEMENT

Manhattan solution: [Warehouse Management](#), [Labor Management](#), [Slotting Optimization](#)

Raia Drogasil is the largest drugstore company in Latin America, by revenue and market capitalization. It operates 11 distribution centers (DCs) and more than 2,300 stores spread across 23 states in Brazil. To align its mission of “taking close care of people’s health and well-being at all times in their lives” to its supply chain operations, Raia Drogasil needed a solution to transform its fulfillment capabilities and speed up its e-commerce without pausing operations.


The company implemented Manhattan Warehouse Management, Labor Management, and Slotting Optimization in its DCs. Raia Drogasil now has unified control of all DC operations, reducing time for receiving products, increasing stock accuracy, and realizing total resource traceability.

A significant reduction in receiving time resulted in a 30% reduction in total time between starting to unload a truck and placing items in their final position. Better inventory accuracy is now in place at Raia Drogasil DCs, ensuring products are tracked from when they touch the floor of the DC to when they enter the truck. Total traceability lets the company know where each product is and with whom, complying with government regulations and assuring quality for customers.

“To give an example, our smallest DC invoices 100,000 units a day over the course of seven hours. Manhattan Warehouse Management was able to satisfactorily cover this complexity.”

Erivelton Oliveira, Chief Supply Chain Officer, Raia Drogasil

[LEARN MORE](#)

A woman with short, dark, wavy hair, wearing a white lab coat over a dark top, is holding a tablet computer. She is looking at the tablet with a slight smile. The background is a bright, modern interior, possibly a laboratory or pharmacy, with white walls and some equipment visible.

30% time reduction from
receiving to put-away



INVENTORY OPTIMIZATION BRINGS HEALTHY OUTLOOK TO HARVARD DRUG

Manhattan solution: [Inventory Optimization – Demand Forecasting](#)

U.S.-based Harvard Drug distributes a deep catalog of brand and generic pharmaceuticals, over-the-counter medications, and supplements to wholesale and retail customers. Despite the growth in catalog products, Harvard's buyers were still using Excel spreadsheets to manage inventory across the company's four warehouses. "The turn on inventory is everything," said Kerry Porter, vice president of inventory management at Harvard Drug.

The company selected Inventory Optimization from Manhattan Associates to bring continuity across all business channels from a buying perspective. Inventory Optimization allows Harvard's buyers to forecast and replenish more strategically. Out-of-stocks can be costly, and with Manhattan's Demand Forecasting, Harvard's buyers can plan the allergy season and make smarter purchasing decisions based on factors such as previous years' trends.

Within one year, Harvard's institutional division saw 6% growth from higher fill rates; moreover, fill rates have improved by 430 base points, year over year. Obsolete inventory has been reduced by 35% as overall inventory has become more productive. Cash flow is strong, enabling the company to reduce debt and reinvest in the business.

"Inventory management, by definition, is a very tactical view of the world. Trying to turn that and make that strategic really is a game-changer for us. We're doing a lot more with a lot less."

Kerry Porter, Vice President of Inventory Management, Harvard Drug

[LEARN MORE](#)



6% growth from higher fill rates

NOTES/SOURCES

- 1 https://www.accenture.com/_acnmedia/PDF-166/Accenture-Pharmaceutical-Supply-Chain.pdf
- 2 <https://www.tracelink.com/knowledge-base/idc-whitepaper-supply-chain-agility-in-the-pharmaceutical-industry>
- 3 <https://www.supplychaindive.com/news/coronavirus-vaccine-cold-chain-tracking-iot-sensor-technology/583168/>
- 4 <https://www.fda.gov/drugs/drug-supply-chain-security-act-dscsa/fda-announces-proposed-rule-national-standards-licensure-wholesale-drug-distributors-and-third-party>
- 5 <https://www2.deloitte.com/us/en/pages/life-sciences-and-health-care/articles/future-of-health.html>

To learn more, visit manh.com

manh.com

© 2022 Manhattan Associates, Inc.

