MANHATTAN ACTIVE™
SUPPLY CHAIN
The Manhattan Active™ Supply Chain suite of solutions allows enterprises to optimize large and complex operations, adapt to market and demand changes, and iterate and innovate at speed. With our solutions, you have technology that is always current, seamlessly interconnected, and easily adaptable.

**ALWAYS FLEXIBLE, ALWAYS CURRENT**
Staying active requires a flexible approach in which enterprises can take advantage of the newest technology, quickly. To achieve a faster pace and support constant innovation, Manhattan Active Supply Chain solutions are designed to adapt. Available across a variety of deployment options—public cloud, private cloud, managed/hosted, multi-tenant, or on-premises—these solutions serve a broad range of needs, capabilities, and budgets. With options to receive annual upgrades, you can implement the next version of an application each year to take advantage of new features and functions. Our Manhattan Active WM service provides annual upgrades, both on premises and in the cloud, including the option to automatically migrate custom extensions.

**INTERCONNECT SEAMLESSLY FOR ALL-AROUND OPTIMIZATION**
Manhattan Active Supply Chain allows you to innovate and optimize complex distribution and transportation operations with actionable visibility across the network. Purpose-built features are tailored for a range of industries, including food distribution and grocery, retail, life sciences, apparel and footwear, high-tech electronics, third-party logistics, and others.

A new report from Forrester projects that U.S. shoppers will spend nearly $460 billion online in 2017. Online sales are making gains and are projected to account for 17.0% of all retail sales within the next five years up from a projected 12.9% in 2017, according to its August 2017 report.

FORRESTER DATA: ONLINE RETAIL FORECAST, 2017 TO 2022 (US)
# MANHATTAN ACTIVE™ SUPPLY CHAIN

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DISTRIBUTION
AGILE SOLUTIONS FOR A NEW DISTRIBUTION LANDSCAPE
Warehouses and distribution centers have always been a blur of activity. Change is constant, requiring well-choreographed operations to keep everything running smoothly, with associates and equipment working at optimal efficiency.

**E-COMMERCE DRIVES GROWTH IN FACILITIES, EMPLOYEES, AND AUTOMATION**

With e-commerce, distribution networks stretch from suppliers’ receiving docks to customers’ front doors. Many distribution centers that only handle store replenishment or wholesale distribution are retooling to support e-commerce. They need flexibility to address order profiles that range from multiple pallets to a single item.

And with customer expectations around speed of delivery, more distribution hubs are being built in closer proximity to customers to handle the growing number of e-commerce orders. The Wall Street Journal reports, “Retailers and logistics companies have been opening warehouses at a record pace.”

To add to the complexity, 30 percent of all online purchases are returned, which means that rapid inventory disposition, faster inventory recovery, and more rapid customer credits are essential capabilities for active enterprises.

To support these unique e-commerce order profiles, the number of employees needed on a per-warehouse basis is rising, outpacing overall job growth. Making these new employees productive faster and equipping supervisors with mobile technology to keep a growing workforce engaged are imperatives for the modern warehouse.
SOLUTION COMPONENTS

Manhattan’s Distribution solutions include Warehouse Management, Labor Management, Slotting Optimization, Billing Management, and DM Mobile, along with industry-specific capabilities designed to increase product velocity, customer service, and efficiency across your operations.
WAREHOUSE MANAGEMENT

Manhattan’s Warehouse Management sets the standard for leading-edge, highly-mobile warehouse management system (WMS) technology and innovation—in both cloud and on-premise solutions.

Using advanced, proprietary algorithms to mathematically organize and optimize operations, Warehouse Management speeds the flow of goods and information to enable flawless execution across inventory, labor, and space and places companies on a firm footing for compliance with regulations and standards.

Our modern mobile applications help customers efficiently manage omnichannel fulfillment by converging capabilities commonly found in disparate labor management and slotting optimization systems.

With our industry-leading Warehouse Management solution, your team has the power to:

– Enhance inventory management by increasing accuracy, improving order fulfillment, and reducing order cycle time
– Streamline receiving and shipping to facilitate cross-docking and expedite back-ordered products
– Engage with floor personnel while seeing real-time performance visibility
– Increase inventory turns and speed order processing to boost customer satisfaction and improve financial performance

WAREHOUSE MANAGEMENT

CORE CAPABILITIES

Designed to help you exceed customer expectations in the omnichannel marketplace, our Warehouse Management solution maximizes efficiency and optimizes the potential of every fulfillment center. The solution advances your warehouse operations from beyond basic picking, packing, and shipping, speeding up the flow of goods and information through your warehouse and enabling flawless execution of all warehouse operations.

Features + Functions

– Streamline inventory receiving processes with cross-docking, quality audit, and vendor performance
– Eliminate costly physical counts with auditor-approved, cycle-counting functionality
– Support sophisticated warehousing needs, including value-added services, lot management, serial number tracking, and product recalls
– Accommodate omnichannel and/or multi-tenant fulfillment
– Leverage advanced order fulfillment strategies with wave and/or waveless approaches
– Automate information capture via modern handheld mobile devices, voice recognition, and/or seamless material handling equipment (MHE) integration
– Utilize native transportation execution capabilities or leverage the External Parcel Integration (EPI) framework to connect with external multi-carrier solutions
– Increase visibility, security, and throughput with native Appointment Scheduling, Guard Check-in and Check-out, Dock Door Management, and Yard Management functionality
– Improve product placement and employee performance with the Slotting Optimization and Labor Management modules
DM MOBILE
A recent survey of IT and operations professionals in the logistics, manufacturing, retail, transportation, and wholesale markets revealed the three most critical picking and fulfillment issues: labor productivity, order turnaround time, and order accuracy. In the world of omnichannel commerce, improving in these areas starts with quick, real-time access to information, not only for monitoring work and inventory but also for driving engagement and productivity among warehouse associates. To meet the needs of today, data must be delivered to associates and managers alike in a mobile format across warehouse management, inventory, and slotting processes.

THE POWER OF MODERN MOBILITY
DM Mobile overcomes labor productivity, order turnaround time, and order accuracy challenges by providing managers and associates applications—accessible via tablets and handheld devices—that provide information and capabilities essential for taking immediate action. Distribution managers can finally break away from the desk since DM Mobile gives them all the information they need to interact and affect change among employees and tasks in real time on the warehouse floor.

By combining data and functionality from Warehouse Management, Labor Management, and Slotting Optimization solutions, DM Mobile offers a wide array of powerful capabilities. Labor management information, such as employee performance, observation management, team assignment, and employee interactions, is readily accessible. In addition, work monitoring options like task monitoring, throughput, order prioritization, and customer views allow warehouse supervisors to keep customer service and operational efficiency top-of-mind.

A SINGLE, SEAMLESS MOBILE APPLICATION
DM Mobile allows warehouse managers to move throughout their facility and engage with floor personnel while having real-time information visibility. This industry-leading solution offers robust functionality and tight interconnectivity with Manhattan Distribution solutions, enabling distribution managers to oversee labor, inventory, and work in real time—even in the most complex facilities. Because it’s anchored by our industry-leading Warehouse Management solutions, DM Mobile helps increase product velocity, customer service, and efficiency across your distribution operations.

DM Mobile offers a comprehensive set of capabilities that are seamlessly interconnected with the Manhattan Distribution suite:

**Labor Management**. DM Mobile equips supervisors with vital performance information necessary for real-time interaction with employees on the warehouse floor. The solution helps improve employee engagement by providing a system for identifying and rewarding strong performers, while coaching employees who are not meeting their goals.

**Work Monitoring**. Through an easy-to-use, consumer-oriented user interface, DM Mobile offers a work monitoring framework, with multiple hierarchies for task management in all warehouse environments.

**Inventory Management**. DM Mobile has a powerful capability to manage or interact with inventory directly from the warehouse floor. Warehouse managers can view or manage inventory using intuitive inventory searches by location, item, or LPN. Inventory management provides warehouse managers real-time inventory data while they’re moving throughout the facility and encountering current or potential inventory issues. Managers can make immediate inventory updates and even view slot score and re-slot locations.

**Order Streaming**. DM Mobile supports order streaming, which dynamically adjusts picking priorities on the fly and helps keep labor resources and sortation equipment moving at a more regular pace, while reducing the amount of downtime for labor and sortation processes.

**Features + Functions**
- Facilitate more supervisor time spent on the floor with real-time data on employee productivity and performance
- Record active interactions systematically with employees, including observations and performance measurements
- Review work in the warehouse by wave, job function, and task or activity
- Put a task on hold, reprioritize a task, assign a task to an employee, or release a set of tasks to be completed
- Monitor, plan, and forecast work in real time
- Track the status for a customer, including order lookups and wave progress
WAREHOUSE MANAGEMENT CAPABILITIES BY INDUSTRY

Industry-specific capabilities are purpose-built to help you increase product velocity, customer service, and efficiency across your distribution operations.

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While nearly nine percent of sales are through e-commerce today, McKinsey predicts that number will rise to 15 percent by 2025, when one out of every six sales will be via online and mobile channels.

U.S. DEPT. OF COMMERCE

LIFE SCIENCE

Traceability
– Lot management
– Inventory recall
– Event tracking
– Date rotation
– Product aging, including FEFO, FIFO, and LIFO

Life Science Picking and Loading Functionality
– Multi-Order case or pallet and work assignment creation
– Picking using label, RF, and/or voice
– Load Sequence by stop and route

Multi-Temperature Distribution
– Locating, allocating, and picking rules by zone (cage, fridge, dry, etc.)
– Task prioritization by zone

Inventory Control
– Real-time visibility to product status, product aging, and lots
– Advanced cycle counting

HIGH-TECH ELECTRONICS

End-to-end Serial Number Tracking
– Multi-level/nested serial numbers
– Serial number range capture
– Level of tracking controlled at SKU level

Advanced Lot Management
SKU Attribute Management
– Revision number
– Country of origin

Work Orders/Kitting and Value-Added Services
Advanced Cartonization
Configurable MHE/Voice Integration
Advanced Outbound Allocation/Picking/Replenishment Strategies
Inventory Ownership/Segregation (Vendor-Owned Inventory)
Parcel Shipping

THIRD-PARTY LOGISTICS (3PL)

Architectural Support
– Multiple warehouses on single application and database instance
– Multiple customers in a single facility

Operational Flexibility
– Configure business flows at the customer level
– Support multiple flows within single warehouse
– Configure storage to be customer-specific or allow mixing of inventory across companies within single location, zone, etc. to optimize space

Optimize Labor Across Customers
– Handle multiple customers with different operating rules within single facility without adversely affecting labor

Billing Management for Customer Charge and Invoicing Requirements
Visibility Across Warehouses and Customers for Orders and Inventory

Manhattan Associates maintains its position as a Gartner Magic Quadrant for Warehouse Management Systems Leader for the ninth consecutive time. This year we are positioned highest in Ability to Execute and furthest in Completeness of Vision.*

* Gartner, Magic Quadrant for Warehouse Management Systems, 13 February 2017; Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner’s research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally, and is used herein with permission. All rights reserved. The Gartner document is available upon request from Manhattan Associates.
WAVELESS ORDER STREAMING: A NEW APPROACH TO MAXIMIZING THROUGHPUT

At Manhattan, we are committed to helping our customers maximize overall facility throughput and more easily and cost-effectively flex their workforces during peak periods. At a high level, the key to maximizing throughput is moving from an exclusive reliance on traditional wave-based processes to one which blends waves and waveless strategies. That’s why we offer non-wave-based math and science models that easily integrate with market-leading material handling equipment (MHE), such as sortation equipment, put walls, and automated storage and retrieval systems (ASRS) for waveless order fulfillment.

This waveless order streaming approach is crucial for fully utilizing material handling equipment and meeting service-level agreements on direct-to-consumer (DTC) orders. Order Streaming provides a more dynamic order fulfillment model that orchestrates orders immediately to improve labor and equipment planning and proactive location assignment and replenishment. At the same time, Order Streaming delays final task construction and assignment, including travel/pick paths, until the work is ready to be assigned to a work queue.

The benefits are better utilization of unit sorters, more efficient manual sortation, higher labor utilization, more flexibility in order grouping and prioritization, and, ultimately, a more scalable warehouse at a lower capital expense.

MORE PRODUCTIVE ASSOCIATES

For warehouse associates, our mobile app provides a touch-enabled, modern approach to common warehouse tasks that focuses on maximizing the productivity of personnel in an intuitive, consumer-oriented user interface. A diverse assortment of device operating systems and device form factors are supported such as voice-driven, triggered barcode scanners, wearable input devices, vehicle-mounted screens, and handheld touchscreens. A graphical, purpose-built user interface with product images and easy-to-follow prompts allows for rapid training, high productivity, and high accuracy.

AGILITY TO ITERATE AND INNOVATE

As warehouses become increasingly more automated, Warehouse Management’s ability to integrate with warehouse control systems (WCS) will add even greater value and efficiency. By leveraging the data explosion created by the internet of things (IoT), Warehouse Management advances fulfillment capabilities for both manufacturers and wholesalers. We are committed to omnichannel retail and distribution center innovation. Our solutions will take full advantage of fulfillment automation and machine learning in order to drive more efficient and optimal outcomes for our customers.

E-COMMERCE ORDER FULFILLMENT: PACK STATION, RETURNS PROCESSING AND PARCEL INTEGRATION

Designed to address the unique challenges that retailers face in the world of omnichannel commerce, our pack station, returns processing, and parcel integration capabilities increase efficiency and improve service.

Our pack station interface provides fully configurable screens that lead packing personnel through tasks using large, easy-to-use touchscreens with product images and robust exception handling. Pack station capabilities increase efficiency and accuracy of the packing process, while decreasing ramp-up time for new and temporary employees during peak periods.

While processing returns can be a time-consuming task that needs to be made as efficient as possible, a top-line opportunity also exists in returning this merchandise to sellable condition as quickly as possible. That’s why our modern, purpose-built returns processing interface supports multiple initiation workflows and rapid inventory disposition with the goals of faster inventory recovery and more rapid customer credits.

With parcel integration—our optional, robust integration framework for third-party parcel connectivity—your team can rate, ship, and track parcel packages with absolutely no rate and carrier label maintenance. Parcel integration provides flexible integration with leading parcel carriers such as UPS, FedEx, USPS, and regional carriers, as well as most international carriers.

A COMPLETE SOLUTION FOR ACTIVE DISTRIBUTION

Leading companies have recognized Manhattan’s Warehouse Management solution for delivering best-in-class performance for decades. And while we do provide the leading WMS with industry-specific domain expertise, effective distribution management is about more than just warehousing. Optimization tools like Slotting and Labor Management drive workforce efficiency—through facility layout, planning, and management tools.
LABOR MANAGEMENT

ENGAGE YOUR WORKFORCE

High customer service expectations, volatile demand, SKU proliferation, and smaller order sizes driven by omnichannel commerce require greater employee productivity and efficiency than ever before. Yet, according to Gallup Research, 70 percent of U.S. workers are not engaged and are working to their full potential. In today’s fast-paced economy, an engaged workforce is vital to success. It can lead to increased innovation, productivity, and bottom-line performance while reducing labor costs.

Manhattan’s Labor Management solution helps close the employee engagement gap by providing a system for identifying and rewarding strong performers, while providing essential training and coaching for employees not meeting their goals. The result? Improved workforce efficiency, reduced turnover, and increased productivity in the warehouse.

Labor Management also enables managers and supervisors to forecast workforce requirements, track productivity, and calculate incentive pay. And with this intuitive mobile solution, supervisors can spend more time on the warehouse floor, where they can interact with their teams, take real-time action to eliminate bottlenecks, work with low performers, and ensure operations are running smoothly.

Features + Functions

– Measure how staff is performing against engineered labor standards
– Leverage prescriptive workflows for coaching and interacting with employees
– Provide systematic feedback to employees in a consumer grade scorecard that includes performance feedback and gamification capabilities
– Optimize overtime, regular, and temporary labor based on demand forecasts
– Use mobile capabilities to facilitate more supervisor time spent on the floor, with real-time data on employee productivity and performance
– Calculate incentive pay and feed into payroll systems
– Use “what-if” analysis to determine optimal staffing requirements
– Forecast and plan labor by day, shift, job, and zone

BOOST PERFORMANCE AT WORK

While Labor and Warehouse Management functionality have traditionally been approached separately, Manhattan’s Performance at Work initiative brings them together. This tightly integrated offering uses a shared data platform that allows goals to be measured in real time based on actual performance. And with increased access to critical performance data, the Performance at Work initiative improves employee engagement and increases supervisor effectiveness.
SLOTTING OPTIMIZATION

IT’S ABOUT LOCATION, LOCATION, LOCATION
In warehouses, like real estate, location makes all the difference. Product location directly affects productivity, worker safety, and order accuracy. You want fast-moving items in the most accessible locations, heavy items placed to minimize damage, and total storage capacity optimized.

The challenges of smaller orders, SKU proliferation, volatile demand, and shorter order cycle times require nonstop optimization of warehouse space. As distribution operations adapt to requirements driven by omnichannel retail, optimizing slotting becomes more critical to controlling costs and meeting customer expectations.

AN OPTIMAL APPROACH TO OPTIMIZATION
Because Slotting Optimization determines the best locations to slot your inventory, it increases workforce efficiency, shortens order fulfillment cycles, and maximizes throughput. It also improves customer service by strategically grouping items together for fulfillment and updating placement recommendations based on trends and new product demand.

As a 100 percent, web-enabled application with an advanced math model that calculates optimal slotting, Slotting Optimization considers seasonality, sales trends, and product variations, while maintaining preferred item sequencing and family groupings. Better yet, it is designed with capabilities to handle even the most complex warehouses.

Features + Functions
- Set and re-set warehouse pick locations based on new product demand, changing consumer expectations, and operational constraints
- Group items for rapid fulfillment, and update placement based on sales trends and product variations
- Use product characteristics and velocity to calculate a relative value for each potential placement
- Aggregate values for all products, and compare millions of move combinations against user-configured strategies
- Simulate different rule sets to find optimal configurations with scenario management capabilities

RIGHT INVENTORY AT THE BEST PLACE AT THE OPTIMAL TIME
Manhattan Slotting Optimization can increase picking efficiency, reduce replenishment requirements, and maximize throughput by determining the best slot locations for all products in the DC. It’s a powerful solution, with a proven track record even in the largest and most complex facilities.
BILLING MANAGEMENT

A flexible, activity-based solution for 3PLs that uses time-based rules to streamline cost calculations and the invoicing process—dynamically managing the billing process across all facilities.

Features + Functions

– Implement activity-based billing to optimize profits
– Assign charges for warehouse processes including inventory storage
– Generate invoice reports for tenants or business units
TRANSPORTATION
THE RIGHT SOLUTION FOR COMPLEX LOGISTICS NETWORKS
ACTIVE, OPTIMIZED TRANSPORTATION MANAGEMENT

Logistics complexities and service-level expectations have increased dramatically in today’s world. Supply chains must be more nimble and more frugal than ever before. With port closures, increased supplier and product demands, natural disasters, and other challenges, supply chain failures are everyday news that can wreak havoc on both brand image and the bottom line.

As risk and volatility escalate, and global transportation options continue to evolve, a sophisticated transportation management solution is no longer an option—it’s a necessity. With advancements in technology, capability, and deployment methods, companies of all sizes that span all industries and geographies can quickly benefit from the value of active, optimized transportation management.

Manhattan’s Transportation solutions offer end-to-end business process support for all transportation functions—across all modes and the entire logistics network—for private fleet as well as common carrier management. From strategic analysis, procurement, and operational planning to execution, visibility, and freight payment and claims, our comprehensive solution helps reduce transportation costs, improve service levels, automate processes, streamline execution, and lower operational risk.

Recognized as a leader in usability and user experience, our solution simplifies even the most complex logistics operations, giving users the visibility to manage by exception.

With our Transportation suite, you can:

– Reduce transportation and logistics costs
– Improve service levels and visibility
– Automate and standardize processes across logistics functions
– Lower administrative costs
– Enable adaptability to changing business processes and requirements
TRANSPORTATION MODELING

SIMULATE. THEN GO.

Today’s global supply chains are in constant flux. So an optimally configured transportation solution today isn’t necessarily the optimal transportation solution for tomorrow.

To stay ahead, transportation professionals need a solution that can “think” strategically as well as execute optimally, ensuring the transportation network is always operating at the lowest cost and highest service levels. With Transportation Modeling, you can:

– Find innovative savings opportunities proactively
– Make the best transportation policy decisions
– Measure the service and cost impact of various options
– Reduce costs
– Improve service levels
– Optimize the network continuously

Transportation Modeling empowers you to challenge assumptions and test new ideas on transportation policies, while simultaneously seeing the impact on operations. Logistics professionals can run what-if scenarios, propose network configuration changes, test different routing options, and see the effect that different constraints and paths will have on operations.

Transportation Modeling offers proprietary algorithms and scenario-planning tools that remove complexity while providing great flexibility. With sophisticated simulations that use historic and forecasted data, the solution validates and optimizes what-if scenarios.

Responding to volatility and implementing change becomes a task as common as tendering freight, with easily justified decisions and minimal impact to the business. Transportation Modeling enables transportation planners to step out of the day-to-day mayhem of troubleshooting problems and into the realm of strategic and tactical planning. The result is optimal execution today and tomorrow.

“We use Manhattan’s modeling tool every day to help with our evolving network. Empowering our internal resources to do this type of analysis has resulted in a 25 percent reduction in our consulting spend. We’ve also sped up the time it takes to project the impact, from a cost and operational efficiency standpoint, to our store network based upon its operational needs.”

Papa John’s
Companies experience a 5–10 percent reduction in miles and 2–5 percent better trailer utilization with Transportation Modeling.
TRANSPORTATION PROCUREMENT

BE PREPARED: CHANGES AHEAD

Selecting the right carriers for your business has a direct impact on profitability and customer satisfaction. But with the dynamic nature of supply chains, the best combination of carriers for today may be different tomorrow. Manhattan’s Transportation Procurement allows you to determine the ideal combination of carriers, and balance price against other factors, such as capacity, service, and quality.

Dynamic supply chains require a powerful and reliable solution that will streamline the sourcing process, and that can respond to changes, such as:

– New vendors, DCs, stores, and customers
– Customer demands and service requirements
– Varying shipment volumes
– Carrier mergers and acquisitions
– New regulations
– Contract expiration
– Fuel prices

Transportation costs are the largest element of total logistics costs, so transportation professionals must have clear visibility of transportation spend. The ability to evaluate cost, service, and other factors when selecting carriers is vital, especially since the best carrier isn’t always the least expensive one. And shippers simply can’t afford to run operations with stale rates. Transportation Procurement provides the power to respond quickly to change while minimizing costs.

SOLUTION COMPONENTS

Manhattan’s Transportation suite provides a single, comprehensive logistics solution set designed to support the entirety of an organization’s shipping needs, regardless of mode, geography, or channel and includes Modeling; Procurement; Transportation Planning and Execution; Fleet Management; Freight Audit, Payment and Claims; TMS Mobile; and Carrier Management.
BETTER VISIBILITY, OPTIMAL RESULTS
Widely recognized as one of the most powerful logistics procurement systems available for managing transportation bids and contract sourcing, our Transportation Procurement solution automates best practices and standardizes the entire bid process, from RFP to final contract. With Transportation Procurement, your team can:

- Standardize and simplify the bid collection and optimization process
- Improve carrier communication and collaboration
- Leverage historic and forecast data to better prepare carriers for bidding
- Benchmark and track rates and service over time
- Determine multiple awarding scenarios based on cost, service, and other rules
- Understand the true cost impact of sourcing decisions
- Improve spend visibility
- Increase accountability
- Create a repeatable and automated bid and award process

By optimizing the strategic sourcing process across modes, Transportation Procurement lets you match your lanes and demand with carrier offerings to ensure you contract the best rates and capacity available.

Features + Functions
- Automate contract management, and reduce transportation costs for all modes of transportation
- Allow alternative pricing using ad hoc or prescribed bundles
- Evaluate bid responses using benchmark data
- Optimize contract award combinations with what-if scenario management
- Execute incremental (mini) bids quickly to secure capacity outside existing contracts due to dynamic network changes
- Generate and activate awards seamlessly within the solution
TRANSPORTATION PLANNING AND EXECUTION

Optimize and execute inbound, outbound, and intercompany shipments in real time, whether domestic or international, using Transportation Planning and Execution. No matter how complex your network, you can secure capacity for shipments across all modes and locations, whether freight forwarders, parcel providers, common carriers, or dedicated and private fleets.

Features + Functions
- Consolidate orders to build efficient shipments
- Optimize all modes of transportation, including ocean, rail, intermodal, truck, air, and parcel-based on rates, asset availability, and other business constraints
- Execute dynamic or static routing requirements
- Manage continuous moves, backhauls, and cross-docks
- Support carrier and supplier compliance programs and guidelines
- Enhance trading partner collaboration and communication
- Accommodate visibility, alerting, tracking, and tracing needs
- Manage internal and external appointment scheduling
- Share visibility of proof of delivery
- Provide granular visibility and task-based control of yard operations

FLEET MANAGEMENT

Manage dedicated and private fleet resources by automatically recommending routes, drivers, and assets with Fleet Management. You can minimize miles while optimizing hours of service, availability, compliance, seniority, and service needs.

Features + Functions
- Optimize all assets, including drivers, tractors, and trailers
- Balance loads across shifts and resources
- Provide driver support with dispatch and kiosk support
- Support long-haul and store delivery routing needs
- Ensure compliance with federal regulations
- Provide proof-of-delivery visibility
FREIGHT AUDIT, PAYMENT, AND CLAIMS

Modernize and streamline antiquated freight settlement processes by managing invoices by exception, reducing excessive and incorrect charges, and filing claims quickly and efficiently.

Features + Functions
– Institute match or auto-payment processes with carriers
– Support audit on accessorial and linehaul charges via defined tolerances
– Enable payment to financial systems
– Manage invoicing and reconciliation through a carrier portal or electronic communication
– Support claims management and settlement
– Allocate freight costs to the SKU level

CARRIER MANAGEMENT

Used by more than half of the top 100 North American motor carriers to manage their fleet operations, Manhattan’s Carrier Management offers dispatch optimization and automation, fuel optimization and profitability analysis, as well as bid analysis and response tools.

Features + Functions
– Target the most profitable freight to keep network in balance and maximize yield
– Improve miles per truck per day and revenue per truck per day
– Reduce driver turnover and increase home-time and miles
– Boost on-time pickup and delivery, customer service, and profitability
– Comply with federal regulations including Hours of Service

Our Transportation solutions also allow you to extend your supply chain by enabling collaboration and connectivity with all trading partners including suppliers, carriers, 3PLs, customers, and stores. With Manhattan Extended Enterprise, upstream and downstream partners benefit from enhanced order management, visibility and event management capabilities. These solutions are featured on pages 26 – 31.

TMS MOBILE

Manhattan Transportation offers collaboration, connectivity, and real-time visibility with service providers, all via an intuitive mobile app.

TMS Mobile enables an array of business processes, including carrier registration, tender/accept, driver assignment, photo and signature capture, and real-time in-transit visibility. Using the app, shippers can interface directly and more effectively with service providers, and access additional capacity when needed.

Tapping into the ubiquity of smartphones, TMS Mobile gives small and medium-sized contract carriers advanced visibility and communication. It levels the playing field for small carriers and owner operators, allowing them to meet compliance requirements with no additional cost. And it provides drivers the ability to communicate directly with TMS from the cab of a truck.

The result? Improved service, increased carrier compliance, and better reporting.
EXTENDED ENTERPRISE

BRIDGE FUNCTIONAL GAPS ACROSS YOUR SUPPLY CHAIN
BRIDGE THE GAP

Servicing your end customers in whatever way they choose has become the “new normal” in brand protection. To that end, the importance of bridging functional gaps between warehousing, transportation, and the extended enterprise continues to be a critical link in the supply chain. Clearly the convergence of processes among internal teams and external trading partners allows for more responsive operations, real-time visibility, and lays a foundation for increased profitability.

Your external suppliers and logistics providers obviously play a vital role in your ability to service your customers. Failure to perform at consistently high levels often results in negative consequences for your customers and therefore, your business. Historically, the external supply chain has been viewed as largely outside the control of the enterprise and performance was often managed under compliance initiatives or threat of penalties. Manhattan’s Extended Enterprise solutions offer visibility, control, and collaboration in those vital areas of your supply chain that lie outside the four walls.

Tighter collaboration delivers higher profits

Manhattan’s Extended Enterprise has been architected to foster closer collaboration—across departmental boundaries and with suppliers, carriers, 3PLs, and other trading partners—so your supply chain can help drive top-line growth without sacrificing bottom-line performance.

From a secure, online, web-enabled portal that facilitates real-time collaboration between you and your suppliers to better visibility of receipts, shipments, yard activity, and in-transit inventory, all Extended Enterprise capabilities work together to improve supply chain agility. With Extended Enterprise, you can gain direct control of product flow with logistics partners, including last-minute inventory re-direction to respond to changes in product demand.

With the proliferation of fulfillment methods and selling channels, companies are increasingly reliant on their trading partners to support the scale of operations they need to compete. Manhattan Extended Enterprise enables closer collaboration amongst all partners in the supply chain ecosystem.
SOLUTION COMPONENTS

From inbound receipt handling, outbound fulfillment, and jockeying of trailers in your yard to better visibility and closer collaboration with suppliers, carriers, 3PLs, and other trading partners, Extended Enterprise ensures you can look ahead while minimizing logistics disruptions. With the Manhattan Active™ Integration Platform, the Extended Enterprise augments our Distribution and Transportation suites to enable smoother operations and logistics workflows.

Manhattan Extended Enterprise includes:

- **Hub Management** for physical execution of shipping and receiving at hubs, pool points, transload facilities or other LSPs
- **Yard Management** for granular visibility and task-based control of yard operations
- **Appointment Scheduling** so carriers and suppliers can self-schedule warehouse delivery and pickups
- **Supply Chain Event Management** for automated monitoring of supply chain events with real-time notifications when disruptions occur
- **Supply Chain Visibility** which provides role-based access to current information regarding your inventory, orders and shipments across the globe
SUPPLIER ENABLEMENT

Your suppliers are scattered all over the world, speak different languages, work different hours, trade in different currencies, and have varying technical capabilities, yet you share a common goal with them to get product to your customers quickly and profitably. Supplier Enablement offers a secure, online, web-enabled portal that facilitates real-time collaboration between you, your suppliers, and other trading partners, despite the diverse geographies, languages, and technical capabilities of your supply chain. All suppliers need to tap into the power of Supplier Enablement is an internet connection and a printer!

With this online collaboration you can quickly improve communications and business process execution for your distribution center operations and across your upstream supply chain.

Features + Functions

Communication & Collaboration
- Post group messages to trading partners to alert them to vital information that may impact their ability to serve you
- Share critical documents with key trading partners electronically
- Acknowledge and track receipt of critical documents
- Receive and store electronic documents forwarded by your trading partners
- Audit all critical communications in a centralized, common vendor portal

Supply Chain Execution
- Enable centralized purchase order acknowledgement and negotiation across all trading partners
- Enable creation of single SKU, mixed SKU, and pre-pack LPNs by suppliers
- Generate and print EAN/UCC128-compliant shipping labels at supplier locations
- Scan load LPNs and pallets onto outbound trailers
- Standardize and print required shipping documentation such as BOLs
- Automate creation of LPN-level ASNs which increase downstream receiving efficiency and lower your DC labor costs
- Automate time-consuming manual purchase orders
- Request and capture third-party inspections for quality audits online
- Identify product defects earlier in the fulfillment cycle, well before good arrive at your distribution centers
- Leverage modernized reporting and data visualization to monitor the effectiveness of the external supply chain
- Initiate chargebacks when poor performance or quality issues arise to encourage greater on-time delivery and compliance
- Automate claims for non-compliance events such as late shipments
- Generate cost of goods invoices (COGI) to unite supply chain execution and supply chain finance
- Facilitate 3-way matching against the PO, ASN, and COGI

HUB MANAGEMENT

Supply chain agility is essential to compete in today’s business environment. For some, this means better visibility and control over the flow of goods through 3PL sites that’s en route to distribution centers. For retailers, this may mean tighter control of their product that’s being routed to stores by third-party delivery agents. That’s why companies use Hub Management to gain visibility and control over the flow of goods well before inventory reaches its next destination. By digitally connecting all facilities responsible for the efficient flow of goods, Manhattan’s Hub Management ensures all nodes of the supply chain are more than just pass-through locations, but are capable of complex distribution processes.

Better Visibility, More Efficient Execution

Our Hub Management solution provides high-performing, mobile technology that easily and inexpensively enables warehouse-like execution in all nodes of your supply chain, no matter how small or complex the facility. With Hub Management, third-party logistic providers can even consolidate shipments directly to stores or end customers, bypassing warehouses altogether.

Whether the facility is a distribution hub, cross dock, pool point, transload facility, or consolidation/de-consolidation point, Hub Management provides world-class supply chain execution and visibility across the network.

Features + Functions

- Provide mobile, scan-based receiving by LPN, pallet, or load
- Enables seamless receive-to-shipment capabilities to streamline cross-dock and flow-through operations
- Track and report against OS&Ds
- Enable zone-based inventory storage assignment
- Enable zone-to-zone inventory relocation
- Complete inventory audit processes to ensure inventory integrity
- Lock and hold inventory
- Scan load LPNs and pallets onto outbound trailers
- Constrain shipment volumes based on downstream receipt
- Standardize shipping labels and documentation through the entire supply chain for more accurate scan-based receiving at all locations
- Enable direct-to-store and direct-to-customer shipments that reduce transportation, labor, and storage costs while shortening order fulfillment times
- Provide mobile support for “temporarily disconnected” realities of many 3PL and hub sites
APPOINTMENT SCHEDULING

Closer collaboration with suppliers, carriers, and 3PLs is crucial to increasing supply chain efficiencies. With Appointment Scheduling, you can give carriers and suppliers the ability to self-schedule warehouse delivery and pickups, eliminating delays and errors from time-consuming manual processes. Better yet, by closely coordinating inbound and outbound appointments with warehouse packing personnel, shipping departments, and fleet operators, your team has an increased ability to tightly control the three largest sources of distribution cost—labor, freight, and inventory.

IMPROVE PRODUCTIVITY AND COMPLIANCE

Poor carrier appointment scheduling can create inadequate labor allocation, inefficient loading and unloading, as well as unnecessary dwell times. Our Appointment Scheduling solution is a proven tool that allows carriers and suppliers to quickly and easily self-schedule their warehouse deliveries. This helps you increase productivity and balance workloads, stay on schedule, and stay in compliance with U.S. Hours of Service and other government regulations.

Features + Functions

- Turn more loads in less time to avoid delays and charge-backs
- Recommend appointment times based on resources, service needs, and shipment content
- Support system-recommended times to drive appointment setting and dock resources allocation at any DC
- Enable carriers to better comply with U.S. Hours of Service, the European Working Time Directive, and other government regulations
- Self-schedule shipments via electronic data interchange (EDI) or a web-based interface
- Track time at guard stations, measure detention times and load/unload times
- Automatically calculate load times based on required delivery dates, order content, dock capacity, warehouse capacity, and labor requirements
- Allow load balancing across shifts to calibrate resource requirements
YARD MANAGEMENT

With the rapid response required in today's supply chains, operational efficiency is more essential than ever. Our Yard Management capabilities help ensure that efficiency by providing detailed visibility and task-based control of yard operations. And by maximizing the flow of all inbound and outbound goods, your team can reduce costs while meeting customer demands.

INCREASE VISIBILITY AND CONTROL

Yard Management maximizes yard and warehouse efficiency by managing the flow of all inbound and outbound goods. Our proven yard management solution enables you to plan, execute, track, and audit loads based on critical characteristics like shipment type, load configuration, labor requirements, and dock and warehouse capacity.

Features + Functions

- Gain visibility to shipments on the yard and to the associated inventory including yard security
- Increase control over equipment operating on the yard for maximum efficiency
- Organize load arrivals that ensure trailers unload at the right dock door and correct time
- Reduce transportation costs and increase warehouse efficiency
- Identify and expedite critical shipments or out-of-stock goods
- Communicate with yard jockeys using mobile devices
- Leverage Guard Check-in and Check-out for appointment and yard security management while critical loads are identified and expedited directly to dock doors
EVENT MANAGEMENT

Enterprises are constantly being challenged to adapt to market and demand changes, and to iterate and innovate at lightning speed. However, this agility is practically impossible without proactive monitoring of supply chain operations, both within your four walls and across your extended enterprise. It’s fundamentally important to help team members from the warehouse, transportation, stores, and procurement, as well as suppliers and carriers, stay abreast of supply chain performance in real time.

PROACTIVELY MONITOR FOR BETTER PERFORMANCE

With Event Management, your team can monitor millions of supply chain events as they occur, on a day-to-day basis. From buyers to warehouse supervisors to traffic managers to store associates, all parties can receive real-time notifications that enable proactive, corrective actions to improve inventory control and turns, cycle time variability, and warehouse productivity.

Features + Functions

– Manage a configurable list of events tracked across the lifecycle of inventory
– Ensure fulfillment activities are executed according to expectations and that inventory arrives on time
– Track pickups and deliveries to make sure inventory moves on time as promised
– Ensure orders are accepted on time and raise critical awareness if suppliers are unable to fulfill the complete inventory needs
– Make informed decisions about whether to expedite inventory by knowing when supply chain disruptions delay shipments in real time
– Adjust schedules and reduce labor costs based on late shipment and delivery notifications
– Reroute goods as they see transportation issues in real time
– Receive more consistent, dependable shipments based on delay mitigation capabilities, dynamic in-transit allocation, and visibility to inbound goods

Endnotes:
1 The Wall Street Journal, May 21, 2015
2 The Wall Street Journal, April 9, 2017
3 Invesp, E-Commerce Product Return Rate
4 The Houston Chronicle, April 17, 2017
VISIBILITY

Today, it’s a real challenge for enterprises to optimize and adapt large and complex supply chain operations. Enterprise-wide visibility of the global supply chain is required to make the right operational and cost decisions. Manhattan provides a single, global view of real-time order, inventory, and shipment information—both domestic and international—across the global supply chain network.

POWERFUL ANALYTICS FOR REAL-TIME ORDERS, INVENTORY, AND SHIPMENTS

Using sophisticated data access and role-based privileges, you and your trading partners and customers, can securely see what is happening across your entire supply chain with a lightweight and responsive interface.

Whether you need to know inventory positions in distant warehouses or the status of shipments in transit, supply chain analysis tools show you real-time order, inventory, and shipment information so your team can reduce logistics costs and more effectively manage carriers and 3PLs.

Features + Functions

– Monitor perishables systematically, and reduce inventory loss from expired goods
– Reduce costs associated with expedited delivery
– Lower inventory levels and safety stocks
– Enable and optimize direct-shipping channels
– Improve customer service
– Achieve faster time-to-market for new products
– Outsource logistics effectively
– Reduce cost of goods sold through drop shipping
– Automate compliance with customs’ 10+2 regulations

COLLABORATE AND ADAPT

Constantly expanding fulfillment methods and selling channels mean that enterprises are more dependent than ever on their global trading partners to support the scale of operations needed to compete. Manhattan Extended Enterprise enables closer collaboration with trading partners to ensure an adaptive, agile supply chain.