



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 omni-channel 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

“A compelling reason we opted to strengthen our partnership with Manhattan Associates: it’s WMS is the most functional and commercially available system on the market. As we acquire new companies, there’s a high probability that Manhattan’s Warehouse Management is already in place. That allows for easier integration into our business processes.”

– VF Corporation

Warehouse Management Core Capabilities

Designed to help you exceed customer expectations in the omni-channel 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, to 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 omni-channel and/or multi-tenant fulfillment
- Leverage advanced fulfillment logic for wave management, constraint-based selection, real-time replenishment and advanced order cartonization
- Automate information capture via radio frequency (RF), voice and material handling equipment (MHE) technologies
- Utilize integrated transportation execution, including freight bill reconciliation, zone skipping/less than truckload (LTL) pooling and rate shopping



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.

Food Distribution and Grocery Retail

- **Traceability**
 - Lot management
 - Inventory recall
 - Event tracking
 - Date rotation
 - Fast flow for perishables
 - Product aging, including First Expire First Out (FEFO), First In First Out (FIFO) and Last In First Out (LIFO)
 - Food Safety Modernization Act (FSMA) compliance
- **Food Picking and Loading Functionality**
 - Multi-order pallet and work assignment creation
 - Picking using label, RF and voice
 - Load sequence by stop/route
- **Multi-Temperature Distribution**
 - Locating, allocation and picking rules by zone (dry, fridge and freezer)
 - Task prioritization by zone
- **Inventory Control**
 - Real-time visibility into product status, product aging and lots
 - Advanced cycle counting
- **Appointment Scheduling and Yard Management**
- **Slotting, Labor Management and Real-Time Alerting and Reporting**

Retail

- **Cross Docking**
- **Flow Through**
- **Transloading**
- **Value-Added Services**
- **Vendor Compliance**
- **Put-to Zone and Put-to-Store**
- **Pre-Pack**
- **Kitting**
- **Dye-Lot Management**
- **Floor-Ready Processing**
- **Garment on Hanger (GOH) Support**
- **SKU Substitution**
- **Pack and Hold**
- **Load Building**
- **Directed Loading by Stop**

Warehouse Management Capabilities by Industry

Direct to Consumer

- **High-Volume Piece Pick**
- **Singles Processing**
- **Multiple Pick Methods (Cluster Picking and Zone Pick)**
- **Personalization (Gift Cards, Gift Wrap, etc.)**
- **3D Cartonization**
- **Collate (Invoice) Document Generation**
- **Configurable Material Handling Integration**
- **Dynamic Replenishment**
- **Returns Disposition Processing**
- **Product Assortments (Gift Packs)**
- **Advanced Slotting Optimization**
- **CubiScan Cubing, Weighing and Dimensioning System Integration**

Apparel and Footwear

- **Apparel SKU Characteristics**
 - Style, color, size and width tracking
 - Quality and version support
 - Release date support
- **High SKU-Count Support**
 - Scalability
 - Item placement/slotting
- **Flexible Dimension and Weight Support**
 - Advanced cartonization algorithms
 - CubiScan cubing, weighing and dimensioning system integration
- **Pre-Packs/Musical Runs**
- **Value-Added Services**
- **Native Parcel and Shipping System (included in WMS)**
- **Configurable MHE Integration**
- **Advanced Outbound Allocation, Picking and Replenishment Strategies**
- **Pack-and-Hold Storage**

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 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
- **Appointment Scheduling and Yard Management**
- **Slotting Optimization, Labor Management and Real-time Alerting and Reporting**

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**
- **Native Parcel and Shipping System (included in WMS)**
- **Advanced Cartonization**
- **Configurable MHE/Voice Integration**
- **Advanced Outbound Allocation/Picking/ Replenishment Strategies**
- **Inventory ownership/ segregation (vendor-owned inventory)**

Third-Party Logistics (3PL)

- **Architectural Support**
 - Multiple warehouses on single application and database instance
 - Multiple customers in a single facility
- **Operational Flexibility**
 - Business flows configured at the company level
 - Support multiple flows within single warehouse
 - Configure storage to be company-specific or allow mixing of inventory across companies within single location, zone, etc. to optimize space
- **Optimize Labor Across Companies**
 - Ability to handle multiple companies with different operating rules within single facility without adversely affecting labor
- **Billing Management for Customer Charge and Invoicing Requirements**
- **Visibility Across Warehouses and Companies for Orders and Inventory**

The Gartner logo is displayed in white text on a black background. To the left of the logo, there is a decorative graphic consisting of a network of grey lines connecting several grey circular nodes, resembling a web or a data structure. The background of the entire bottom section is a dark blue gradient with a glowing blue light effect at the bottom.

Manhattan Associates Maintains Position as a Gartner WMS Magic Quadrant Leader for Ninth Consecutive Time, positioned highest in Ability to Execute and furthest in Completeness of Vision.

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 to move 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 the majority of the 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 utilized labor, more flexibility in order grouping and prioritization, and ultimately, a more scalable warehouse at a lower capital expense.

More Productive Picking

For warehouse associates, our mobile picking app provides a touch-enabled, modern approach to order fulfillment picking that focuses on maximizing the productivity of outbound fulfillment personnel in a consumer-oriented user interface. For tasks such as active pick, case pick, reserve pick, put to sorter, put to wall, put to cart/tote, etc., a diverse assortment of device form factors such as voice-driven, triggered scanners, wearable input devices, vehicle-mounted screens, and handheld touchscreens is supported. A visual user interface with product images and easy-to-follow prompts allows for rapid training and high pick 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 omni-channel retail and distribution center innovation. Our solutions will take full advantage of fulfillment automation and machine learning, as well as agile for addressing an evolving, growing workforce.

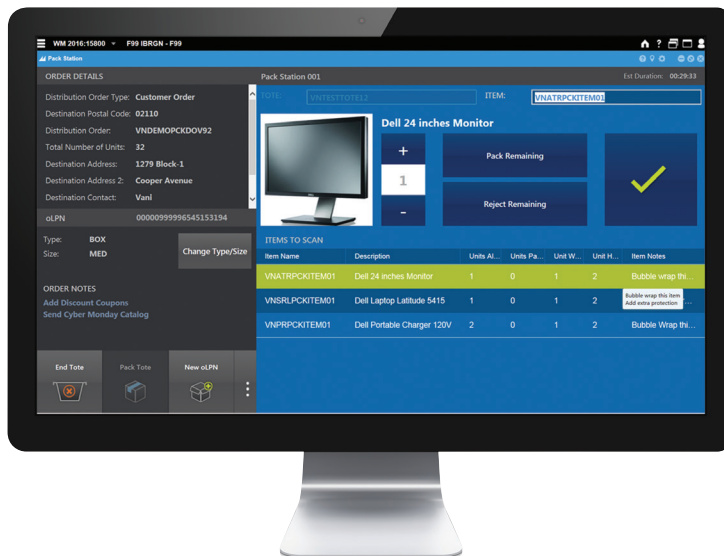
E-Commerce Order Fulfillment: Pack Station, Returns Processing and Parcel Integration

Designed to address the unique challenges that retailers face in the world of omni-channel 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. With the pack station capabilities, efficiency and accuracy of the packing process increases, 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 out-of-the-box integration with leading parcel carriers such as UPS, FedEx, USPS and regional carriers, as well as most international carriers.



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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.

