

MANHATTAN ACTIVE®  
**WAREHOUSE  
MANAGEMENT**



MANHATTAN ACTIVE® WAREHOUSE MANAGEMENT

# The last WMS you will ever buy.

It is versionless, with continuous access to new capabilities. It was born in the cloud, so when your business needs more, it automatically scales to match that need. It has been infused with intelligence to learn and adapt. It is engineered to be extended, to quickly and easily combine the power of your innovation with ours. Wherever you work, it works.

And it never needs upgrading.

## A NEW ERA

Why now? For decades, analysts and experts have recognised Manhattan warehouse management systems as the industry leader. But we understand that just being better is no longer good enough. The rippling effects of the connected consumer and the impacts of a fast-and-free fulfilment economy have significantly changed the supply chain landscape in the past decade.

Today's supply chain leaders need actionable insight across their entire operation from a single, intuitive application. They need augmented intelligence from AI and machine learning to navigate skyrocketing volumes and decreasing commitment windows. And they need to creatively engage their labour force and interconnect their automation to ensure maximum efficiency of man and machine.

So, we started over. We broke down the supply chain to its very essence, the building blocks of distribution, labour, automation and transportation. We spent over three years identifying hundreds of capabilities and needs that had been crippled over time by legacy supply chain software, and we redesigned and rebuilt them.

Manhattan Active Supply Chain brings Transportation Management into the mix, combining the twin pillars of warehousing and transportation to provide end-to-end supply chain optimisation, visibility and execution like never before.

The incorporation of gamified associate experiences and the re-engineered flexibility of slotting, pick, pack and sort have unshackled Order Streaming, unlocking its full potential for real-time orchestration of simultaneous wholesale, retail and direct fulfilment, significantly increasing its potential for picking efficiency and overall throughput.

Manhattan Active Warehouse Management is the most technologically and operationally advanced supply chain execution system ever created. And we built it for you — for what you are and what you will become — because your supply chain is what makes you unique, what differentiates you from your competition, and what makes you special to your customers.

It's your supply chain, unified.



**PUSH POSSIBLE<sup>®</sup>**







A person wearing a blue uniform is shown from the chest down, holding a tablet computer. Their right hand is pointing at the screen. The background is a blurred industrial warehouse environment with metal beams and lighting. The overall color palette is dominated by blues and greys.

# SOLUTION COMPONENTS

Designed to increase product velocity, customer service and efficiency across your operations with integrated labour management and slotting optimisation. Built with the flexibility to quickly personalise and extend data, interfaces and workflow to revolutionise warehouse efficiency.

# WAREHOUSE MANAGEMENT

Manhattan Active Warehouse Management (WM) is versionless so it never needs upgrading, letting you focus on experiences, not on systems. It is a single, cloud-native application built entirely from microservices, which means you can “set it and forget it” when it comes to performance, resiliency and extensibility concerns. When your business has higher demand and your systems need more capacity, Manhattan Active WM automatically allocates more. And when you need less, it adjusts without any intervention.

With Manhattan Active WM, you have continuous access to innovation, with new features and updates released quarterly throughout the year. And all that innovation is extensible, too. We understand that your business is unique, which means you must be able to extend the data model, access APIs and exit points and configure the interface without any impact to receiving newly released features and updates.

Manhattan Active WM makes execution of workflows easier to configure than ever before with step-by-step wizards. Distribution leaders have more visibility than ever before with highly actionable, real-time operational data visualisations across every facility in the enterprise and integrated direct communication with the workforce.

Manhattan Active WM is infused with artificial intelligence to refine its optimisation. This technology accelerates the flow of goods and information; enables flawless execution across inventory, labour, advanced automation, robotics and physical space; and simultaneously balances competing task requirements across retail, wholesale and direct channels to achieve the optimal fulfilment plan.

With a built-in warehouse execution system (WES), Manhattan Active WM is the only distribution system capable of the seamless orchestration of all work across man and machine. Moreover, with the Manhattan Automation Network, automation and robotics deployment is a plug-in process.

Native support for modern devices and touch experiences help users simultaneously manage all fulfilment. Capabilities usually found in separate labour, warehouse and slotting solutions are unified into a single, integrated user experience. Intuitive workflows deliver responsive experiences that help new and temporary workers get up to speed and operating efficiently in a matter of minutes. In addition, performance, coaching and recognition have been gamified throughout the user experience, driving higher associate engagement and a more productive workforce.

## WAREHOUSE MANAGEMENT CORE CAPABILITIES

Engineered specifically for the demands of the omnichannel marketplace, and agile enough for whatever comes next, Manhattan Active WM unlocks the untapped potential of every fulfilment centre. Advance your warehouse operations beyond basic picking, packing and shipping to create and flawlessly execute a hyper-flow of goods and information through the distribution centre.

### Features + Functions

- Streamline inventory receiving processes with cross-docking, quality audits and vendor performance monitoring
- Eliminate costly physical counts with auditor-approved, cycle counting
- Accommodate omnichannel and/or multi-tenant fulfilment
- Simultaneously apply intelligent order-fulfilment strategies with machine learning to support both waveless and wave-like planning and optimisation
- Synchronise task creation and scheduling to minimise travel and ensure important work is completed on time
- Automate information exchange via modern, handheld mobile devices and voice recognition
- Support any material handling equipment via the only WES built directly within a WMS
- Utilise native transportation support, leverage external parcel integration services to easily connect with external multi-carrier solutions or light up Manhattan Active Transportation Management to get the full, optimised Manhattan Active Supply Chain experience
- Increase visibility, security and throughput with appointment scheduling, guard check-in and check-out, dock door management, and yard management functionality
- Improve item location placement and employee performance with slotting optimisation and labour management capabilities, all within the same app

"I can't remember the last time I was so excited following a new product launch briefing. The new cloud architecture, new user interface, and significant advancements in optimisation and employee engagement are wonderful. Any one of these improvements would have been impressive. Incorporating all of these enhancements in the new release is astonishing for a product of this scope."

STEVE BANKER  
VICE PRESIDENT OF SUPPLY CHAIN MANAGEMENT  
ARC ADVISORY GROUP





## UNIFIED PLANNING WITH ORDER STREAMING

Order Streaming technology makes Manhattan Active WM the only solution to continuously plan, learn and re-plan every task and resource simultaneously across retail, wholesale and direct fulfilment workflows. As soon as orders arrive, they are streamed individually or sorted into wave-like collections depending on the urgency, type of fulfilment and customer needs. Rather than flood the floor with work all at once, Order Streaming technology ensures the right resource with sufficient capacity is quickly identified, so orders get to the dock ahead of the carrier cut-off times and promised service commitments. To maximise trailer utilisation, Order Streaming continuously adds applicable new orders to open shipments right up until transport departure.

Order Streaming technology leverages machine learning developed by Manhattan's data sciences team to greatly enhance the order orchestration logic. To complete a piece of work in a given timeframe, Order Streaming considers real-time insight into the capacity of both man and machine, as well as inventory availability and location. Although rush orders are dropped first, Order Streaming learns over time, creating better awareness of system capacity available to fulfil orders that might not need to be shipped for a few days. Consequently, both equipment and people can be more fully utilised.

Work Release — the part of Order Streaming technology that plans the fulfilment process — leverages optimisation and machine learning to drive the highest asset utilisation possible. As it monitors utilisation, it determines when to release the next bit of work to keep those assets highly utilised, avoiding the need to manage peaks and valleys in labour productivity. Work Release helps Order Streaming constantly listen for changing resource capacity so it can determine the next set of picks or replenishments. Using techniques adopted from transportation management for route optimisation, Work Release intelligently considers the layout of the distribution centre to build tasks that minimise travel.

Order Streaming creates an entirely dynamic order-fulfilment model, beyond the confines of wave or wave-less. It reconsiders the impact of demand and the capability to supply continuously, improving every aspect of labour, equipment planning, proactive location assignment and replenishment. Benefits include better utilisation of automation, more efficient manual sortation, higher labour utilisation, more flexibility in order grouping and prioritisation, and, ultimately, a more scalable warehouse at a lower capital expense. Order Streaming takes every opportunity to consolidate picks, intelligently increase picking density and minimise travel time between picks.





Order Streaming can even delay final task construction and assignment, including travel/pick paths, until the work is ready to be assigned. It can now also take advantage of advanced task optimisation and scheduling and unified picking, which includes the ability to build hybrid picking carts for significant improvements in picking efficiency. This technology is finally unleashed to fulfil its true potential, driving up utilisation, reducing order cycle times and ensuring on-time deliveries without costly shipment upgrades. Coupled with Manhattan Active Transportation, Order Streaming taps into continuous transportation optimisation to ensure trailers also ship as highly utilised as possible.

Manhattan Active WM plans and assigns tasks to users in a completely new way, using insight from machine learning within Labour Management to predict how long each task will take. By evaluating historic data, Manhattan Active WM learns to make smarter decisions by applying current conditions to the historic data, so more accurate predictions are made. Manhattan Active WM evaluates each associate's performance and aligns that associate to available tasks based on eligibility, roles, priority and other factors. A holistic schedule is created and consistently evaluated to adjust assignments and minimise "deadhead" travel distance across every task in the entire warehouse. Tasks are now interleaved to drive even more efficiency. Picks, replenishments, cycle counts and slotting moves are executed seamlessly together within the boundaries of worker and equipment eligibility and configurable constraints. Intelligent task construction and optimised task assignments mean a significant reduction in wasted travel in the distribution centre.

Cubing — the process for packing outbound shipping containers — has been infused with intelligence beyond the simple cubing algorithms utilised in most legacy warehouse management systems. Cubing is now natively optimised to minimise either the total number of containers or the total volume in order to decrease shipping costs.

Manhattan Active WM also seamlessly manages cross docking and flow through distribution opportunities, either at time of receipt or ahead of receipt. By matching inbound inventory with existing orders, it streamlines the movement of goods from the inbound trailer to the outbound trailer, minimising touches and processing time.

A new era of warehouse management gives your team the power to:

- Orchestrate work across both man and machine, maximising utilisation and increasing capacity
- Execute the most efficient picking paths possible
- Drastically reduce unnecessary travel across all tasks
- Continuously optimise and prioritise workflow, reducing cycle times and shipping upgrades
- Combine picks regardless of pick type or order type, significantly increasing efficiency
- Enhance inventory management, increasing fulfilment accuracy
- Streamline receiving and shipping for cross-docking and expediting back-ordered products
- Engage floor personnel digitally and directly, leveraging real-time performance visibility
- Increase inventory turn volume and velocity, boosting customer and financial performance
- Adjust behaviour of execution workflows, using data-driven rules and workflow overrides

## UNIFIED EXECUTION

Manhattan Active WM has been re-engineered from the ground up to eliminate the execution barriers of legacy distribution systems. From moving trailers in the yard to receiving goods and shipping, the system orchestrates work seamlessly and simultaneously across both man and machine. Labour management and warehouse management capabilities are now unified in a single app to engage the workforce and ensure they are operating in the most efficient manner possible. This unification means more visibility and control for supervisors, as well as real-time communication and performance feedback embedded directly into the operations tools used by the associate.

Extended device training for new and temporary users is a thing of the past, as all transactions in Manhattan Active WM have a common, intuitive user interface that employs design and execution patterns supported by the phones and apps that users are already familiar with. Transactions are executed on configurable, highly intuitive and interactive workflows with instinctive step-by-step flows, easy-to-understand prompts, and the ability to display configurable training messages, item pictures and actions to take. Users do not have to remember or memorise task steps, and all transactions are configurable to provide significant flexibility for personalisation. Transactions can now define data-driven workflow overrides such as determining whether higher value inventory should undergo a greater degree of validation compared to lower value goods, allowing a greater level of personalisation than ever before.

It all starts in the yard. Trailers, arriving blind or based on pre-scheduled appointments may be checked in at the guard shack. Flows have been simplified to streamline the check-in process and guide drivers to a yard slot or dock door for pickup or unloading. Yard-jockey tasks gain more control over movement of trailers within the yard as the system intelligently and adroitly moves the right trailers to the inbound docks for unloading and receipt and empty trailers to the outbound docks for loading.

The inbound processes of receiving, putaway, sorting, licence-plate-number (LPN) disposition and general inventory management can be tailored for environments that desire to move in eases, full cases, pallets or any combination thereof. Whether tracking lots, country of origin, date of manufacture, expiration date or other key attributes, Manhattan Active WM has you covered. Traditional receipt to stock, lower touch flow-through distribution, or even cross-docking for maximum efficiency — it's all supported. You can also choose how much or how little of each to use. Everything is built with an eye for flexibility and personalisation.





The outbound process has also been completely reimagined to unlock unprecedented efficiency on the floor. Picking is no longer limited by pick type, order type or the processes that follow downstream. Picks are organised around priority and precisely sequenced to minimise travel. Retail orders, ecommerce orders and store replenishments can be picked together, if desired, and placed within a new picking cart that now accepts full LPNs, picks to an outbound LPN and picks to tote, simultaneously. Picks can now be chained together to minimise the distance and travel time between locations. Outbound sortation automatically (or manually) directs inventory to the optimal area for packing, using the intuitive graphical pack station options. Based on configurable rules, outbound putaway intelligently directs completed LPNs to the correct pickup or drop location, or directly to a consolidation area on the outbound dock where items can then be loaded onto the right truck.

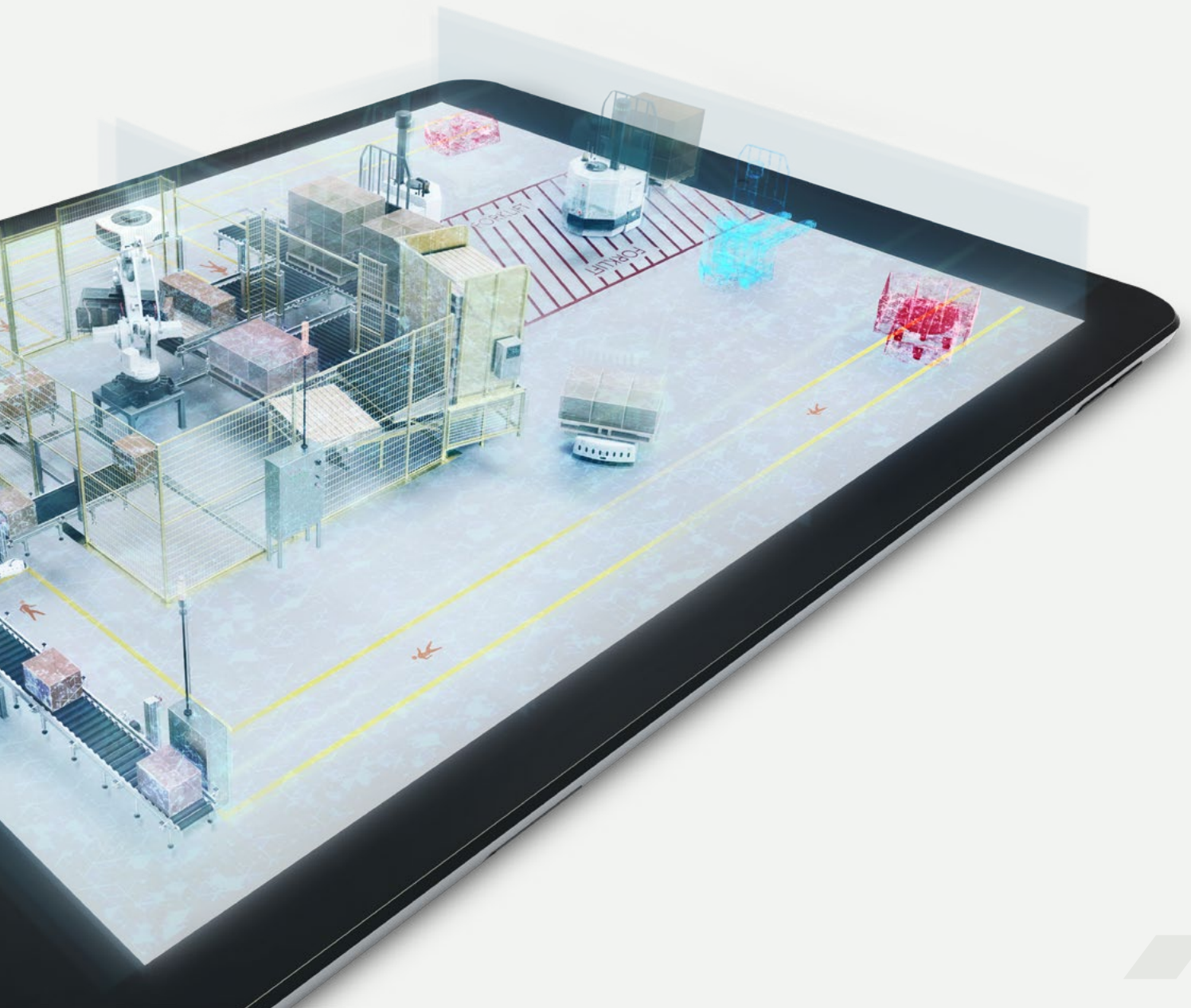
Designed to address the unique challenges that retailers face in the world of digital commerce, Manhattan Active WM pack station, returns processing and parcel integration capabilities increase efficiency and improve service.

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

While processing returns can be a time-consuming task, a topline opportunity also exists in returning merchandise to sellable condition as quickly as possible. That is why Manhattan's modern returns processing interface supports multiple initiation workflows and rapid inventory disposition to drive faster inventory recovery and more rapid customer credits.

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

Shipment planning capabilities range from native routing and single origin/destination plans all the way to industry-leading optimisation across all nodes when coupled with Manhattan Active Transportation Management.



## UNIFIED CONTROL

To be most effective, supervisors need access to detailed real-time data visualisations with the ability to take action on that information in a single tool in the office or on the floor. Unified Distribution Control delivers a visually pleasing experience that starts with a network-wide summary of performance across all distribution nodes and hubs in the organisational supply chain. Key metrics are displayed for the entire supply chain or for selected facilities. Manhattan Active Supply Chain intertwines visibility across the supply chain like never before with key elements from both the transportation network and within each facility.

The next level down is a facility-level console that displays overall inbound status based on advanced ship notice (ASN) data and outbound status based on orders. Users can identify progress and also potential risks with integrated, real-time ETA information highlighting receiving delays as well as warehouse execution and shipping concerns. The console also displays all users logged into every department and the status of their current performance compared to goals. Performance for each department is available, allowing users to drill down into key equipment metrics

such as utilisation, performance and dwell time. When appropriate, notifications alert users to exception areas such as outbound orders that may be at risk because a carrier cutoff time is drawing near.

To investigate further, a supervisor can get a closer look on a key department showing lower than expected performance. A simple tap on the console reveals a departmental view with details on what the issue may be, all the way down to the underlying tasks. With another quick tap, holding or releasing a task or reassigning a task to a different user is easy to accomplish. Similar capabilities are provided for inventory and orders. Additionally, a supervisor may need to view employee timelines or log an observation or interaction with a team member, which is easily done within Unified Distribution Control. Should a supervisor need to find a particular employee, a digital twin of the warehouse in map form provides not only visibility into where all resources are, but also the ability to interact directly via the map with elements such as people, equipment and tasks. Unified Distribution Control is complete command and control of the distribution network from the highest levels down to the smallest data elements.





## UNIFIED AUTOMATION

Historically, the warehouse control system — managed by a warehouse execution system (WES) — was solely focused on overseeing advanced automation, while a warehouse management system (WMS) handled the rest of distribution centre activities, including inventory and human labour allocations. As expected, this separation led to operational inefficiencies. But what if it did not have to? What if there was a WMS with an embedded, vendor-agnostic WES that coordinated both your automation and your workforce to get the best from both? It could completely revolutionise the way orders are managed and work is released to the floor. Manhattan turned “what if” into reality.

Manhattan Active WM easily integrates with any advanced material handling equipment, such as sortation equipment, put walls and automated storage and retrieval systems. It also communicates with the latest robotic solutions on the market today. The Manhattan Automation Network makes key automation vendor technology even easier to bring onboard by facilitating collaboration between Manhattan Associates and our key automation partners. By building a base integration and collaboratively testing it, customers can rest assured that technology that includes the “certified” designation within the Manhattan Automation Network carries the weight of support from both parties and allows quick adoption.



# WAREHOUSE MANAGEMENT CAPABILITIES BY INDUSTRY

Industry-specific capabilities are designed to increase product velocity, customer service and efficiency across unique distribution operations.

## FOOD DISTRIBUTION AND GROCERY RETAIL

### TRACEABILITY

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- Lot management
- Catch Weight
- Inventory recall
- Event tracking
- Date rotation
- Fast flow for perishables
- Product ageing, including "first expire, first out" (FEFO), "first in, first out" (FIFO), and "last in, first out" (LIFO) food picking and loading functionality
- Flexible question and answer framework
- Multi-order pallet and/or work assignment creation
- Picking using label, radio frequency (RF) and voice
- Load sequence by stop/route

### MULTI-TEMPERATURE DISTRIBUTION

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- Locating, allocation and picking rules by zone (dry, fridge and freezer)
- Task prioritisation by zone

### WORK ORDER PROCESSING

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### INVENTORY CONTROL

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- Real-time visibility into product status, product ageing and product batches
- Advanced cycle counting

## RETAIL

### CROSS-DOCKING

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### FLOW THROUGH

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### TRANSLOADING

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### VENDOR COMPLIANCE

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### UNIFIED INBOUND AUDIT

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### PUT-TO-STORE

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### DYE-LOT MANAGEMENT

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### FLOOR-READY PROCESSING

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### GARMENT-ON-HANGER SUPPORT

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### LOAD BUILDING

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### DIRECTED LOADING BY STOP

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## DIRECT TO CONSUMER

### HIGH-VOLUME ORDER PROCESSING

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### SINGLES AND SMALL-ORDER PROCESSING

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### MULTIPLE PICK METHODS (CLUSTER PICKING AND ZONE PICK)

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### HIGH SKU-COUNT SUPPORT

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- Scalability
- Item placement/slotting

### COLLATE (INVOICE) DOCUMENT GENERATION

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### CONFIGURABLE MATERIAL HANDLING

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### MATERIAL HANDLING EQUIPMENT (MHE) INTEGRATION

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### DYNAMIC LOCATION ASSIGNMENT AND LOCATION REPLENISHMENT

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### RETURNS DISPOSITION PROCESSING

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### PRODUCT ASSORTMENTS (GIFT PACKS)

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### CUBISCAN CUBING, WEIGHING AND DIMENSIONING SYSTEM INTEGRATION

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### PARCEL SHIPPING

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## APPAREL AND FOOTWEAR

### APPAREL SKU CHARACTERISTICS

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- Style, colour, size and width tracking
- Quality and version support
- Release date support

### HIGH SKU-COUNT SUPPORT

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- Scalability
- Item placement/slotting

### FLEXIBLE DIMENSION AND WEIGHT SUPPORT

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- Advanced cartonisation algorithms
- CubiScan cubing, weighing and dimensioning system integration

### CONFIGURABLE MHE INTEGRATION

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### ADVANCED OUTBOUND ALLOCATION, PICKING AND REPLENISHMENT STRATEGIES

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### PARCEL SHIPPING

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## LIFE SCIENCE

### TRACEABILITY

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- Lot management
- Serial Number tracking
- Flexible 2D barcode support
- Event tracking
- Date rotation
- Product ageing, including FEFO, FIFO and LIFO

### LIFE SCIENCE PICKING AND LOADING FUNCTIONALITY

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- 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

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- Locating, allocating and picking rules by zone (cage, fridge, dry, etc.)
- Task prioritisation by zone

### INVENTORY CONTROL

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- Real-time visibility to product status, product ageing and lots
- Advanced cycle counting

## HIGH-TECH ELECTRONICS

### ADVANCED LOT MANAGEMENT

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### SKU ATTRIBUTE MANAGEMENT

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- Revision number
- Country of origin

### ADVANCED CARTONISATION

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### WORK ORDER PROCESSING

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### CONFIGURABLE MHE/VOICE INTEGRATION

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### ADVANCED OUTBOUND ALLOCATION/PICKING/REPLENISHMENT STRATEGIES

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### INVENTORY OWNERSHIP/SEGREGATION (VENDOR-OWNED INVENTORY)

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### PARCEL SHIPPING

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## THIRD-PARTY LOGISTICS (3PL)

### ARCHITECTURAL SUPPORT

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- Multiple warehouses on single application and database instance
- Multiple customers in a single facility

### OPERATIONAL FLEXIBILITY

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- 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 optimise space

### OPTIMISE LABOUR ACROSS CUSTOMERS

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- Handle multiple customers with different operating rules within single facility without adversely affecting labour

### BILLING MANAGEMENT FOR CUSTOMER

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### CHARGE AND INVOICING REQUIREMENTS

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### VISIBILITY ACROSS WAREHOUSES AND CUSTOMERS FOR ORDERS AND INVENTORY

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# LABOUR MANAGEMENT

Labour shortages, the rise of the digital native and the gig economy, and the dramatic impact of a global pandemic highlight the critical need for labour management approaches to evolve in alignment with the new generation of workers. Measuring success has to expand beyond common standards for evaluating productivity to understand how we can motivate and engage employees on a human level. At Manhattan Associates, we believe once we understand what drives human desire, aspiration and behaviour, we can develop techniques and intuitive tools to create a more individual and rewarding work experience. We are using data-driven gamification, real-time digital communication, automatic recognition and rewards programs, and more to move beyond labour management to true employee engagement. Empowering workers results in a win-win scenario for employers and employees.

## EMPLOYEE ENGAGEMENT

The Self-Determination Theory postulates that humans are driven by three fundamental needs: autonomy, mastery and connectedness. All of us want the freedom to own our destiny and determine the path of our success. We want to be good at something and enjoy the satisfaction of a job well done. And we want to do it together, with others who can share in our victories and defeats. We need purpose in our work lives.

Employee-engagement technologies within Manhattan Active® Labour Management prioritise and optimise metrics like recognition, feedback, happiness, personal growth, satisfaction, wellness, ambassadorship, relationships with managers, relationships with co-workers and alignment with the company. Cultivating these attributes requires more than simply reviewing raw performance data and finding the low performers. It requires unlearning what we think we know and activating a new approach to an old problem.

A fully engaged workforce is more motivated, productive and satisfied. So, we have gone beyond the traditional coaching and training of employees to unify associates' daily work tasks with dynamic performance recognition, challenges, feedback and rewards in a single app that drives higher levels of motivation and satisfaction than ever before.

## UNIFIED EXPERIENCES

All labour management capabilities are now integrated within modern, mobile-touch experiences that seamlessly unify the daily task workflow for activities — like picking, packing and slotting — with embedded gamification techniques to help associates achieve new personal records for performance. Challenges for performance, throughput, tardiness and utilisation can be combined with badges for milestone achievements and rewards points that can be redeemed in a digital marketplace for prizes or local recognition. The resulting unified experience is the first-ever commercially available distribution workforce engagement application.

Manhattan Active Labour Management helps distribution team leaders provide valuable feedback to employees in a more timely and automated manner. Similar to the real-time performance data we experience using fitness apps, this new employee engagement technology fills an important void in the need for immediate and constant feedback for employees in a large and complex operation environment. Our capabilities are the first step to driving real improvements in motivation, satisfaction, retention and productivity.

## COMPELLING & REWARDING WORK

Manhattan Active Labour Management helps create a sense of accomplishment and empowerment, so associates are self-driven to increase their performance. Not only does it save supervisors from spending time coaching low performers, it promotes better warehouse culture and a stronger warehouse labour force. As performance increases, so does worker satisfaction and retention.

Manhattan Active Labour Management still measures performance, but now does so with intuitive, consumer-oriented, mobile experiences. It's designed to encourage, guide and motivate employees using behavioural theory and gamification techniques that significantly increase individual and team productivity, efficiency and satisfaction.

In addition, Manhattan Active Labour Management and Manhattan Active Warehouse Management are now capabilities within a single, unified, supply chain application. Using machine learning to augment labour standards expertise with intelligent task-time scheduling and estimation ensures the system is continuously re-optimising the changing priorities and order variety within the distribution centre. Once a "nice-to-have" application used to drive performance, Manhattan Active Labour Management is now a mission-critical component of every modern distribution centre.

You can also turn on Manhattan Active Transportation Management to gain visibility into shipment arrivals and departures with available ETA data to make better assignments of people to where the work is going to be.



## Features + Functions

- Associate performance measured against engineered labour standards
- Gamified challenges, achievements, points and rewards
- Digital twin representation of real-time maps of employee tasking and location
- Mobile, enterprise command and control put the supervisor on the floor of the distribution centre
- Calculated incentive payments integrated into payroll system
- Real-time labour performance data by department and job function with impact alerts

“The bottom line in established economies is that labour has become a constrained asset, and companies are struggling to find, onboard, reward and retain employees. Consequently, more emphasis is now placed on looking at what vendors are doing to address employee engagement.”

Gartner, Magic Quadrant for Warehouse Management Systems, May 2020

# SLOTING OPTIMISATION

In warehouses, just like in real estate, location makes all the difference. It directly affects productivity, worker safety and order accuracy. You want fast-moving items situated in the most accessible locations, heavy items placed to minimise damage and total storage capacity optimised.

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

## OPTIMAL APPROACH TO OPTIMISATION

Manhattan Active® Slotting Optimisation automatically determines the best locations to locate inventory to increase workforce efficiency, shorten order fulfilment cycles and maximise throughput. It also improves customer service by strategically grouping items together for fulfilment and updating placement recommendations based on trends and new product demand.

Manhattan's slotting optimisation solution makes leveraging built-in learning intelligence — which continuously calculates optimal slotting — both intuitive and easy. Our technology considers seasonality, sales trends and product variations, while maintaining preferred-item sequencing and family groupings. And it is designed with capabilities to handle even the most complex warehouse environments.

Manhattan Active Slotting Optimisation is the first and only seamless integration of slotting moves and picking engineered as part of the overall management of the distribution centre. As a single application — natively unified with warehouse management and labour management — our new slotting optimisation requires no integration or modifications to ensure decisions are executed in the timeliest and most cost-effective manner. That means pre-seeded slotting-run strategies that streamline configuration and provide unprecedented flexibility, whether manually executed on demand or easily scheduled ahead of time and run with no intervention by a user.

Because it is part of the same application as Manhattan Active Warehouse Management, the new solution uses the identical intuitive, mobile-user experience integrated across the enterprise.

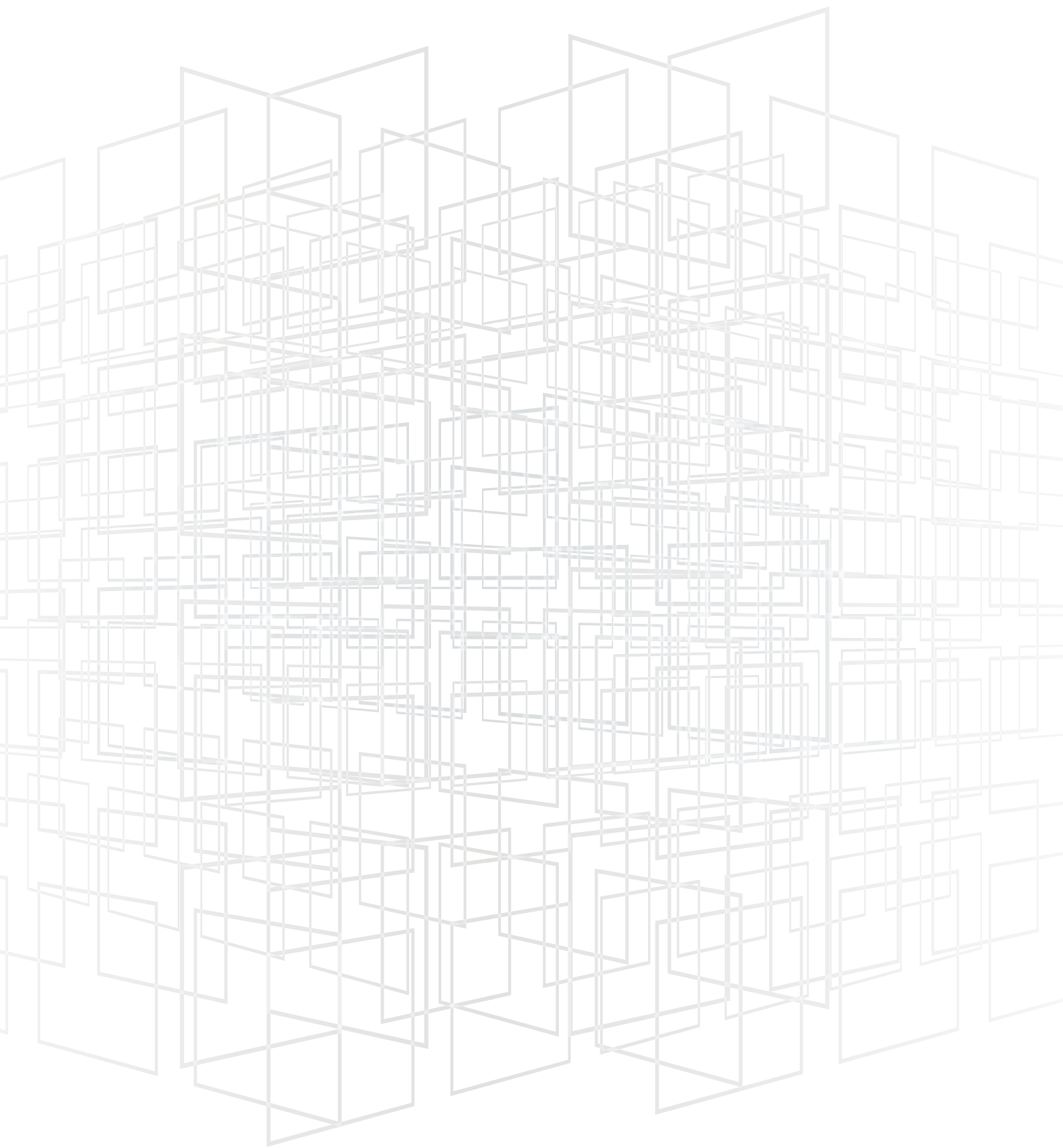
## Features + Functions

- Set and re-set pick locations based on product demand, changing consumer expectations and operational constraints
- Group items for rapid fulfilment 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 across products and compare millions of move combinations against user-configured strategies
- Configure multiple run strategies to ensure optimal configurations based on real-time picking patterns in the warehouse

## RIGHT INVENTORY, RIGHT PLACE, RIGHT TIME

Manhattan Active Slotting Optimisation raises slotting workflow to a new level of efficiency, even in the largest and most complex facilities. The results are replenishment reductions and increased throughput volume, thanks to dynamic optimising and executing slot location movement for all products in the distribution centre.







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