COMMERCE TRENDS

KEEPING LIFE AND COMMERCE MOVING FORWARD

Össur ready for future growth

Pet Supplies Plus finds a new best friend

Giant Eagle: growth without adding brick and mortar

Manhattan Associates.

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COMMERCE
TRENDS

A Manhattan Associates Magazine 2020/2021

30 YEARS OF INNOVATION
Founded in June 1990 in Manhattan Beach (California), earlier this year saw the 30th anniversary of Manhattan Associates. In 1994 we signed our 50th customer, by 1998 we had listed on the Nasdaq stock exchange and over the last decade we have invested over $580 million in Research & Development, ensuring that we continue to lead the industry.

30 YEARS

"MANY OF THE WORLD'S TOP BRANDS RELY ON MANHATTAN ASSOCIATES TO HELP THEM SOLVE THE WORLD'S MOST COMPLEX BUSINESS PROBLEMS IN SUPPLY CHAIN, INVENTORY AND OMNICHANNEL COMMERCE. HERE'S TO ANOTHER 30 YEARS!"

Eddie Capel, *President and CEO*

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Henri Seroux,
*Senior Vice President EMEA
Manhattan Associates*

Keeping life and commerce moving forward

The disruption that has affected all of us this year has thrown up a myriad of challenges to the world of commerce and supply chains. While we are slowly finding a new balance between supply and demand, sales and safety, and agility and reliability the danger is yet to pass entirely.

At this point, I would first like to console and empathise with the many families around the world that have been touched by the pandemic. Secondly, we must also recognise that the global economy is also reeling from the shock-waves of the virus.

In many cases companies have had to close down branches, significantly reduce workforces and sometimes even file for bankruptcy. Despite the best efforts of governments and organisations all over the globe, the lives of millions of people have been completely turned upside down.

But like every crisis, heroes & heroines have emerged. In the medical sector, of course, the doctors and nurses deserve a special mention, but also in other areas such as transport and logistics countless other professionals have kept our supply chains and communities running, while the majority of us were in lockdown – we are grateful to them all.

At the same time, in the midst of the crisis, we introduced a groundbreaking innovation to the market: Manhattan Active® Warehouse Management, the first complete cloud-native warehouse management system. A WMS that never needs to be upgraded. In short, the last WMS you will ever have to buy.

In this jubilee (5th) edition of Commerce Trends we would like to show you how these types of cloud native, microservices architected solutions can help you to be prepared and respond to the next challenge; regardless of whether that is another pandemic, natural disaster, geo-political trade war, or simply shifting consumer behaviour.

THE BRILLIANCE OF AN AGILE SUPPLY CHAIN

COVID-19 has accelerated existing trends in commerce and supply chain. The companies that emerge victorious from the crisis will be those that have been able to respond quickly and adequately to these trends. Cloud technology will become indispensable for this, expects Henri Seroux, Senior Vice President EMEA of Manhattan Associates. "We have probably witnessed a few years of change in just a few months and I believe this change is permanent."

This spring, the Portuguese Continente switched to a new warehouse management system in its main distribution centre. A few days after go-live, the food retailer (part of the Sonae Group), processed more than twice as many goods as during the highest peak the previous year.

Henri Seroux has many more of these kinds of stories about customers. "There is in every retailer's mind now a permanent need to be able to adjust execution volumes instantly," says the Senior Vice President EMEA of Manhattan Associates from his home office somewhere in the French countryside.

"Retailers have established extensive planning processes in recent years. They meticulously
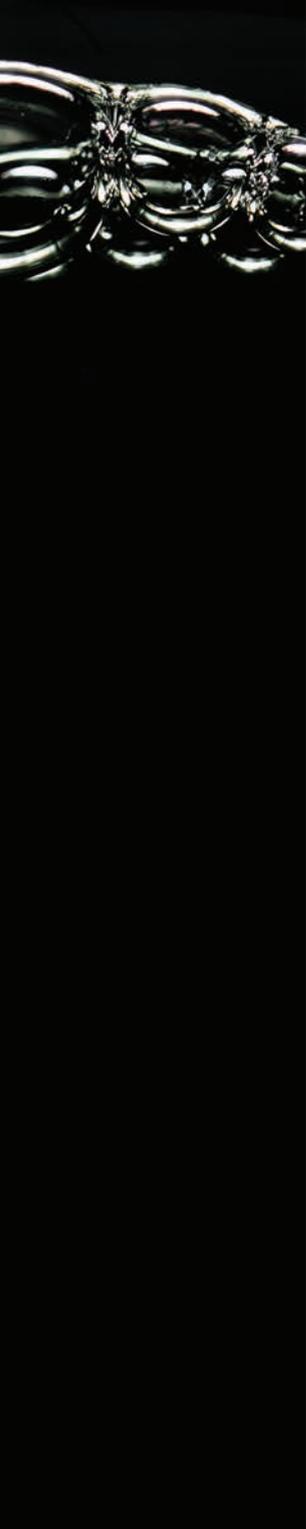
map out the demand and fine-tune the supply. The result is a supply chain that can deliver with the precision and predictability of a clock. But that super plan was worth nothing this spring. The demand exploded completely and no longer corresponded in any way with the equally disturbed supply and flow of goods.

"The complete disruption in demand and supply forced retailers to scrap their meticulous plans and focus almost entirely on execution. This meant dealing as effectively as possible with the demand and supply that arose and increasing capacity by deploying extra order-pickers and extra trucks where necessary."

Using store inventory

In addition to food retail, turnover in ecommerce also grew rapidly. "In a few months, volumes have grown at rates that would otherwise have taken two or three years to recognise. In some sectors the acceleration was even as much as four to six years," says Seroux, recalling conversations with retail leaders who hoped that online sales would grow to 10 or 15 percent of sales in a few years. "It sounded like a huge achievement to them. Some of those retailers are now deriving half of their sales - even after their physical stores reopened - from online marketplaces."

Manhattan Associates received emergency calls from retailers who needed help with the execution. "That's the area we're in. We help companies optimise execution and flexibly deal with variation and deviation in demand and supply. The emergency calls came from companies looking for ways to increase order processing capacity; using store inventory to ship online orders or turning shops into pickup points, especially at times when stores were forced to close down.

"Retailers saw opportunities to boost sales and reduce the direct impact of the pandemic on their sales pipelines. Some customers only opened their stores for staff, such as DIY retailer Leroy Merlin in France, Italy and Spain. They were able to deliver in their parking lots, picking straight from the stores those badly needed do-it-yourself products. Flexible supply chains and customer services effectively met modified demand head-on in 2020."

From page five issue to front page headline

This is not a temporary effect, but a permanent one, Seroux emphasises. Many retailers and brands continue to process 'Black Friday' or 'Cyber Monday' volumes, day after day, even after the reopening of the stores. "The crisis has

accelerated a significant change in consumer behaviour. Consumers who previously had little experience with ecommerce have now experienced its convenience and efficiency first-hand and I believe this change is here to stay because it was already happening, albeit at a much slower pace."

The unexpected and rapid growth in ecommerce is putting pressure on supply chains to deliver increased volumes in line with customer expectations. "Companies will have to build new facilities for this. They will have to automate and robotise existing facilities to meet increased demand. And sometimes they will have to switch software systems, now that ecommerce has suddenly become the norm for many (if not most) consumers."

The pandemic has accelerated the need to mobilise the store - as well as other new services - to serve the consumer better, more rapidly and more conveniently with concepts such as curbside pick-up which utilises the store inventory far more efficiently.
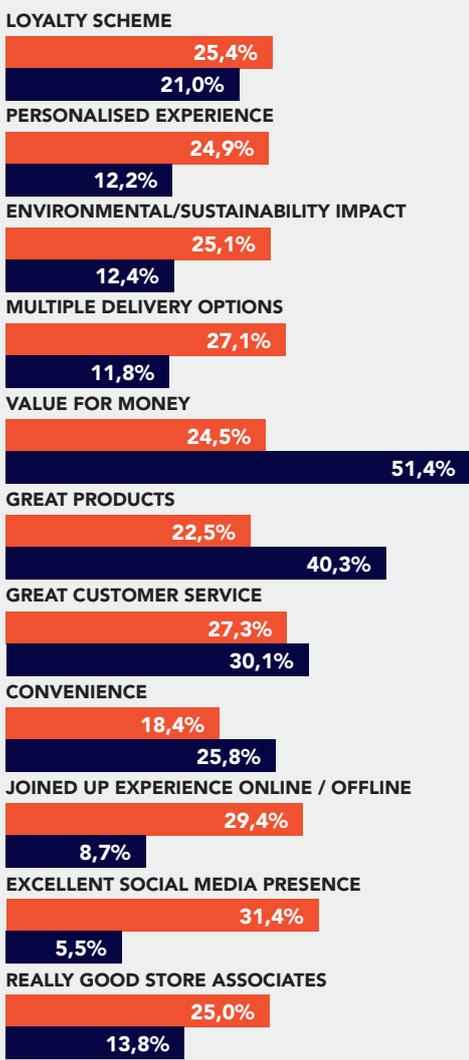
Commitment to the cloud

The crisis has strengthened Seroux's conviction that Manhattan's full focus on cloud solutions has been the right one. Previously, Manhattan Associates had already launched a fully cloud-based omni-channel solution, Manhattan Active® Omni. This year, a completely re-invented warehouse management system was added, Manhattan Active Warehouse® Management. Seroux advises companies to rely on the cloud and invest in it. "The latest generation of cloud solutions delivers exactly what companies need in a crisis such as this: unlimited elasticity, agility and speed. Companies don't have to buy extra hardware when volumes double, it's already there. If you want to benefit from innovation, you don't need to upgrade the system first. New functionality is (almost) immediately available."

Seroux again tells a customer story: "What happens if your central distribution centre has to shut down for quarantine reasons? Because that is exactly what happened to the American jewelry retailer Kendra Scott. The team at Kendra Scott were already running their unified commercial processes on Manhattan Active Omni, so they were able in just nine days to mobilise the inventory of their closed stores to fulfill and ship the online orders."

Thanks to Manhattan's updated R&D roadmap for Manhattan Active Omni, the functionality that retailers needed during the crisis - such as curbside pick-up - was made available in an accelerated way **>**

WHAT MAKES CUSTOMERS LOYAL?

Retailers are deploying more and more tools to retain customers. But which tools work and which don't? Manhattan Associates asked 1,000 retailers and 20,000 customers worldwide.
What turns out? For retailers, all tools seem to contribute to loyalty, but customers pay particular attention to three aspects: attractive prices, good products and good service.

LOYALTY SCHEME
- 25,4%
- 21,0%

PERSONALISED EXPERIENCE
- 24,9%
- 12,2%

ENVIRONMENTAL/SUSTAINABILITY IMPACT
- 25,1%
- 12,4%

MULTIPLE DELIVERY OPTIONS
- 27,1%
- 11,8%

VALUE FOR MONEY
- 24,5%
- 51,4%

GREAT PRODUCTS
- 22,5%
- 40,3%

GREAT CUSTOMER SERVICE
- 27,3%
- 30,1%

CONVENIENCE
- 18,4%
- 25,8%

JOINED UP EXPERIENCE ONLINE / OFFLINE
- 29,4%
- 8,7%

EXCELLENT SOCIAL MEDIA PRESENCE
- 31,4%
- 5,5%

REALLY GOOD STORE ASSOCIATES
- 25,0%
- 13,8%

What makes customers loyal? ■ RETAILERS ■ CUSTOMERS

with the latest version that was introduced halfway through the lockdown. "Customers using the cloud version only need to enable this functionality to benefit immediately. Cloud native technology can help increase flexibility and agility in execution as we saw in this case."

Shifting proportions

Not everyone is able to take advantage of the opportunities offered by the crisis. Seroux realises that while COVID-19 is hurting traditional business models of retail hard, the impact of the crisis depends, among other things, on the life cycle of products. "Especially in fashion, three months is a long time. Many fashion retailers have missed almost an entire season and are struggling with excess stocks. This disruption brings retailers with an oversized network of stores into immediate trouble. They suddenly have to take drastic measures to survive."

There are however sectors that benefited from the disruption, such as food retail. Seroux knows stories of food retailers who are worried because they have only been able to attract a small part of the growing online turnover in food retail in recent months. "They have lost market share in the online channel to pure players, simply because they could not respond quickly enough to the changed situation. That leads to concerns, because the online channel is clearly here to stay now."

No one can predict what's going to happen in the next few months. Nobody saw this crisis coming and the end of it is not yet in sight. At the same time, other trends, such as the growing focus on sustainability, remain as topical as ever. Consumers are increasingly demanding products, especially in food, that have been produced with more respect to the environment in general. "This does not necessarily mean that these products are produced locally, but it does mean that consumers are increasingly insisting that brands have to take a critical look at the processes, packaging and carbon footprint associated with the products they provide. If companies have a short supply chain because they put everything in an airplane, that gives them a lot of agility and flexibility. But these products do come with a far higher environment cost – one that increasing numbers of consumers (especially younger ones) are not willing to pay."

"THERE IS IN EVERY RETAILER'S MIND NOW A PERMANENT NEED TO BE ABLE TO ADJUST EXECUTION VOLUMES INSTANTLY."

The last five percent

Now that dust is beginning to settle, companies are starting to look to the future again. But, how should they organise their supply chains to become more resilient and better able to manage future disruptions?

Many stories have appeared in the press calling for production to be brought back to Europe, but Seroux doesn't necessarily believe that is the silver bullet. "Globalisation has given consumers in Europe and elsewhere a lot of purchasing power. The costs of buying a sweater, sofa or TV set are comparatively much lower than about thirty years ago. It's an illusion to think that we can reclaim production on a large scale in order to start production here at much higher costs, just to minimise the risks and guarantee the supply.

"But that doesn't mean we shouldn't take measures to reduce our dependency on say one country, for example. We will have to diversify our supply chains and this diversification will in turn increase resilience. But fear not, this isn't something that will just happen over-night, we're talking about gradual, longer-term changes," Seroux explains.

Every retailer or brand has to make its own trade-offs. "They will have to ask themselves how they should solve dilemmas: shorter and faster supply chains offer the benefits of quicker cycles to adjust to demand, but could also come with higher economic and environmental prices. Everything will have to be more flexible including inventory deployment. We will have to integrate our transportation, warehousing and unified commerce systems to be more agile and efficient."

"Is technology such as cloud software absolutely necessary to withstand these kinds of disruptions? After all, there are retailers, especially in the grocery space who have managed to keep their supply chains running and their shelves fully stocked, without having entirely cloud-native solutions in place. What I would say, is that in situations where the difference between success and failure can be as little as five percent here or a couple of percentage points there, technology like cloud-native applications or microservices architecture can make that difference."

ÖSSUR READY FOR FUTURE GROWTH

For the distribution of prosthetics, bracing & supports, Össur has a worldwide network with three large distribution centres and several local warehouses. Thanks to Manhattan SCALE™ warehouse management system, the employees at these locations now all work in the same way. And a lot more productive.

Over four decades ago, the Icelander Össur Kristinsson decided to design a new prosthesis with a silicone liner for his left leg. This innovation led to founding his own company, which over the years has grown into a global producer and distributor of prosthetics and bracing & supports. Össur has production sites in Iceland, Mexico and China and an extensive distribution network.

The distribution centre in Eindhoven, the Netherlands, plays a crucial role in the network. In a 5,000 square metres building, almost fifty employees process around 800 orders with 2,400 order lines per day. These are mainly orders from hospitals and rehabilitation clinics, but also orders from distributors and warehouses in Europe, Asia and Africa.

In 2012 Össur started the implementation of Manhattan SCALE in the distribution centre in Paulsboro, New Jersey, followed by west coast distribution in 2013 and then two years later followed by the implementation in Eindhoven. Until then, to manage the operation, the company used different versions of the same ERP system, complemented by customised extensions. "We had reached the limits of that system and needed a warehouse management system (WMS) to facilitate further growth," says Rich Parkyn, Director of Distribution at Össur.

"SCALE IS ALWAYS FINDING THE SHORTEST ROUTE ALONG THE PICK LOCATIONS, WHICH LIMITS TRAVEL RUN FOR OUR ORDER PICKERS." Thijs Ras, *Logistics Engineer, Össur*

Manhattan's warehouse management system SCALE™ offered Össur the opportunity to standardise systems and processes. One systematic way to pick, pack and ship, processed identically in each warehouse to maximise efficiency, improve accuracy and enhance customer satisfaction, regardless of the distribution centre where the order is delivered from. Parkyn: "Standardisation also offers other soft benefits. Employees are easily cross-trained through the DC, and employees can be shared at other DC's with little training required, especially helpful with implementing SCALE in a new facility.

The shortest route

In Eindhoven, the added value of Manhattan's SCALE solution only really became visible after the move to the current distribution centre in 2016. With the help of the WMS, the processes for picking and packing are much more efficient. For example, SCALE calculates the correct box size per order. The box is then produced entirely mechanically and to SCALE's specifications "With an average of sixteen small or four large boxes on a trolley, travel time for order pickers is much lower than before. SCALE always finds the shortest route along with the picking locations' shelf racks", emphasises Thijs Ras, logistics engineer, who as a key-user was actively involved in the implementation in Eindhoven.
Ras mentions the assembly of about 150 prosthetics per day. "These components are located in two vertical storage systems. Now that SCALE controls these systems, productivity has increased substantially."

SCALE offers more advantages. Thanks to the registration of serial numbers, Össur can track and trace all prosthetics individually. The additional scanning of all picked items in the packing/shipping area is no longer necessary. Parkyn: "Because we now pick the orders directly into the shipping box, productivity has increased by 15 to 20 percent. Not only in Eindhoven but also in the other distribution centres. Gone are the days that we struggled to fulfil all orders on time." A compelling and essential reason for choosing Manhattan's WMS back in 2012 was the trust and confidence in the support and expertise that Manhattan could provide during the implementation. Parkyn is still satisfied with this support. "Manhattan's skills and knowledge of distribution processes is extensive. If any issues occur, they are solved immediately."

Strong community

In addition to the three major distribution centres, Össur now wants to implement the WMS in the main local warehouses. In doing so, the company benefits from their people's existing knowledge and experience in the distribution centres who already use SCALE. "We have done the same with previous implementations. Our colleagues in the local warehouses probably face the same challenges as we do. More than anyone else, we know the processes and are fully equipped to familiarise colleagues with the system," says Ras. This approach has made the employees in Össur's global distribution network a strong community. People got to know each other, making it easier for them to communicate and work together. They now pick up the phone faster when they have a question about the WMS. Parkyn: "Thanks to the implementation of SCALE, we are now one solid collaborative team, regardless of the location where we work."
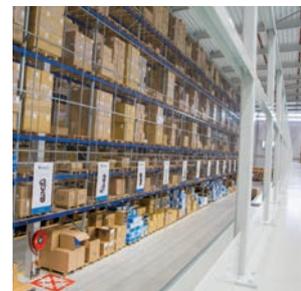
CHALLENGE
Össur was looking for a warehouse management system to increase its distribution capacity, facilitate further growth and also offer all customers the same experience.

SOLUTION
With Manhattan SCALE™, Össur has succeeded in standardising both processes and systems in the three largest distribution centres and an increasing number of local warehouses.

PROGRESS & RESULT
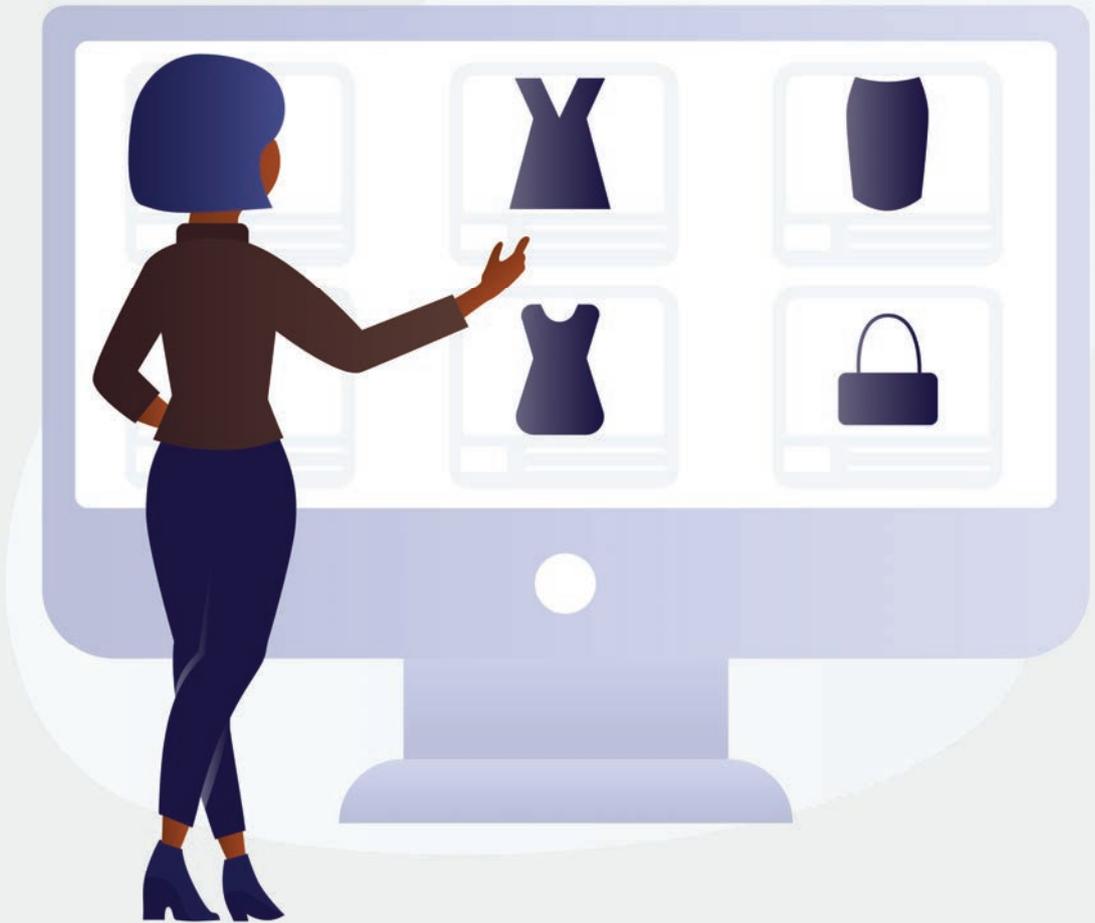**Productivity in distribution centres has increased by 15 to 20%, whilst the deadlines at the end of each working day are consistently met.**

"GONE ARE THE DAYS OF STRUGGLING TO MEET OUR DAILY FULFILMENT ORDERS CUT-OFF TIME."

Rich Parkyn, *Director of Distribution, Össur*

Google Cloud

GAINING SPEED OF INNOVATION WITH A CLOUD NATIVE APPROACH

Manhattan Associates modernises to help customers adapt faster to the convergenge of digital and physical commerce. The result: a truly cloud-native warehouse management and unified commerce platform.

Tina Liu,
Senior Manager of Industry ISV Partner Marketing, Google Cloud

As Google Cloud CEO Thomas Kurian said earlier this year in his blog 'Google Cloud helps retailers win the digital race', digital transformation in the retail industry is more than just a requirement, it's a race, and the retailers that transform the fastest will be the most successful in the long term. COVID-19's impact on the retail industry has only exacerbated this challenge, forcing retailers to rapidly marry digital and physical experiences by offering services such as curbside pickups and contactless check-out.

About five years ago, Manhattan Associates recognised a shift in how their customers had to adapt to changing market conditions including the convergence of physical and digital commerce,

and decided to lead the change by offering a technology platform that was versionless, agile, scalable, and extensible. They began the journey by architecting a microservices-based, cloud-native version of their flagship warehouse management system (WMS) and omnichannel solutions - Manhattan Active® Warehouse Management and Manhattan Active® Omni – and introduced these solutions during the past three years.

Manhattan Associates recognised that just lifting a monolithic architecture to the cloud would not deliver the level of scalability and agility that they and their end-customers demanded. So they decided to start over and architect Manhattan

Active Warehouse Management and Manhattan Active Omni from the ground up to take advantage of all the benefits of the cloud platform underneath.

Guiding principles

First, Manhattan Associates established some critical architectural principles to serve as their north star for cloud-native application design. These guiding principles, as outlined below, were created to help ensure Manhattan Associates solutions could deliver the engineering velocity demanded by their end-customers while also aiming to reduce the cost of innovation.

- **Speed of innovation:** Manhattan Associates adopted a microservices-based, cloud-native approach so they could deliver new functionality faster than their competitors, and faster than they themselves had previously done.
- **Extensibility:** In addition to accelerating innovation in-house, they also sought to ensure an open and extensible ecosystem so that their customers and partners can easily build and integrate additional capabilities without dependence on Manhattan Associates.
- **Flexibility:** With these managed SaaS versions of their flagship products, Manhattan Associates needed the flexibility to scale performance and resources based on their end-customers' needs.
- **Low cost of innovation:** Finally, Manhattan Associates required the ability to leverage open-source technologies for portability and to avoid vendor lock-in. In addition, they required detailed logging and monitoring tools in order to maintain control over costs.

Partnering with Google Cloud

In order to deliver on the imperatives outlined above, Manhattan Associates teamed with Google Cloud as their cloud platform. Here's a quick look at how they are leveraging key Google Cloud services to help meet the objectives laid out in their guiding principles.

- **Achieving agility, scalability, and resiliency with Google Kubernetes Engine**: Manhattan Associates built on top of their already extensive Kubernetes experience and took advantage of Google Kubernetes Engine managed features such as regional high availability, autoscaling, node auto-provisioning, and the auto-repair functionality to help ensure scalability and resiliency for their containerised workloads.
- **Gaining ease of use and openness with Cloud SQL for MySQL:** Manhattan Associates team members were also long-time users of MySQL. With Cloud SQL for MySQL, they were able to continue using open-source software to run managed MySQL databases. In addition, Manhattan Associates could leverage Cloud SQL to support their environment setup and their customer needs. For instance, they can create a Cloud SQL database instance per project. And each project can correspond with an environment, like dev/test and production or with a specific customer. They also have the flexibility to support optional add-ons for each customer like additional database instances for high availability.
- **Visibility and control with detailed monitoring and logging:** Finally, Manhattan Associates demanded very detailed monitoring and logging to help ensure customer environments were running effectively across the stack. They leveraged a combination of open-source, custom and Google Cloud tools like Cloud Logging, Cloud Monitoring, and CloudRun as well as in-house tools to keep tabs on their environments and trigger alerts so that Manhattan Associates teams can take action when needed.

As a result, Manhattan Associates was able to deliver a truly cloud-native warehouse management and unified commerce platform, built using microservices. They have been delivering on their goal of engineering velocity; releasing features quarterly versus annually as was the case on their prior monolithic architecture. More importantly, they can pass this speed of innovation on to their end-customers.

WELCOME IN THE NEW WORLD OF WMS

30 YEARS

MANHATTAN ACTIVE® WAREHOUSE MANAGEMENT: the last WMS you will ever need to 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.

For decades, analysts and experts have recognised Manhattan warehouse management systems as an 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.

New era

So, we started over. 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 Warehouse Management now is a unified supply chain execution tool that combines all demand, supply, labour, slotting and automation into a precision instrument of efficiency across every facility in the network, regardless of physical size, velocity or volume.

The most advanced

The incorporation of gamified associate experiences and the re-engineered flexibility of slotting, pick, pack and sort unlocked the full potential of Order Streaming, 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.

Pet Supplies is the first customer to implement Manhattan Active Warehouse Management. You can also watch the video testimonial on manh.com.

MILES TEDDER
CHIEF OPERATING OFFICER
PET SUPPLIES PLUS
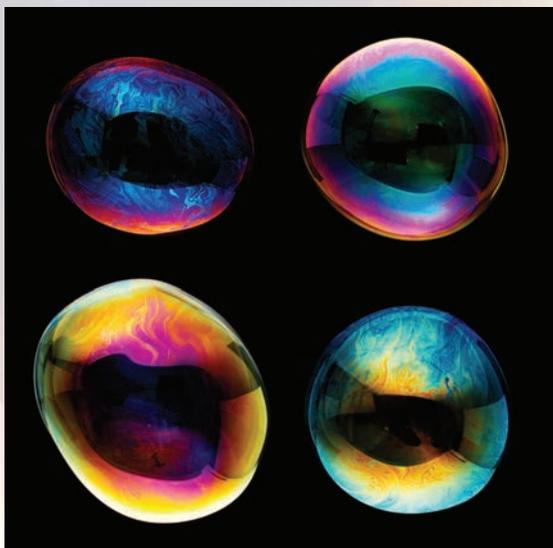
PET SUPPLIES PLUS FINDS A NEW BEST FRIEND

Pet Supplies Plus has more than 500 stores across the United States and one distribution centre in Seymour Indiana. They were the first to implement Manhattan's new cloud-based warehouse management system, Manhattan Active Warehouse Management.

Headquartered in Livonia, Michigan, Pet Supplies Plus is known as "America's favourite neighbourhood pet store", operating more than 500 locations across the country, many of which are locally owned. The company prides itself on having well-stocked stores, exceptional service and making things as convenient as possible for customers. They offer in-store retail, as well as curbside pickup and delivery from most stores.

A longtime partner of Manhattan's Pet Supplies Plus was evaluating a WMS upgrade. The retailer was already running several business applications in the cloud and was considering doing the same with its supply chain technology. In the midst of the COVID-19 pandemic and the drastic changes it wrought, Manhattan Active Warehouse Management was a perfect fit. Pet Supplies Plus became the first customer to implement the groundbreaking WMS.

One WMS, many benefits

There were several reasons Manhattan Active WM appealed to Pets Supplies Plus. The first is that it is always current, meaning once it is implemented it never needs upgrading. As COO Miles Tedder said: "A versionless, cloud-based solution allows us to move very rapidly. Quite frankly, it also gives us the opportunity to eliminate the expense, some of the learning curves, and training that's associated with traditional on-premise applications."

In addition, it offers a lower total cost of ownership compared to an on-premise WMS. It automatically scales to meet demand fluctuations. And new features and innovations for Manhattan Active WM are continuously delivered every quarter. According to Tedder, if the coronavirus underscored anything for retailers, it is the importance of innovative technology and flexible operations. "The ability for Manhattan to be able to deliver valuable new WM features on a frequent and ongoing basis, without enduring the normal upgrade process is, quite frankly, a gamechanger," he said.

Minimised learning curve

Social distancing restrictions made implementing Manhattan Active WM onsite challenging, so much of the process was executed remotely. The use of cameras, video, screen shares and exceptional collaboration between the Pet Supplies Plus and Manhattan teams made the implementation fast and effective. According to Tedder, the intuitive interface of the application minimised the learning curve and allowed the company to onboard team members quickly and effectively. The conversion process was very smooth, and operations were quickly at full capacity.

No matter what challenges and opportunities occur in the future for Pet Supplies Plus, it feels Manhattan Active WM gives it the adaptability, scalability and constant innovation to take advantage of them.

CHALLENGE
The company needed a warehouse management system (WMS) with the agility to react to market changes and innovate to meet customer demands.

SOLUTION
Cloud-native Manhattan Active WM was implemented to ensure the pet retailer had a foundation upon which it can build optimal omnichannel operations.

# SPEED OF INNOVATION DETERMINES THE WAREHOUSE OF THE FUTURE

Many companies were not prepared for an increase in online orders of up to 500 percent this spring. How should we prepare our warehouses for a future with more disruptions? Pieter Van den Broecke explores three focus areas: robotisation, artificial intelligence and gamification.

Pieter Van den Broecke, *Managing Director Benelux and Germany, Manhattan Associates*

L et's explore two warehouses which both have their own story: The first warehouse was forced to shut down the company's webshop this spring - it lacked the capacity to process an increased number of orders. The second warehouse was able to increase its order processing capacity sufficiently. The company initially planned it would take three years to reach their online turnover target. As a result of being able to increase their order processing capacity, they achieved the target within three months. "What's more: this warehouse managed to take on the fulfilment for a webshop from another country within 24 hours. The same goes for the fulfilment of two large brands in a third country," says Pieter Van den Broecke, Managing Director Netherlands, Belgium and Germany at Manhattan Associates. "If, like this warehouse, you are able to handle an unexpected shift from the offline to the online channel without any problems, you can make a difference in the market. That's one of the most important lessons we learned over the past six months."

"IF YOU ARE ABLE TO HANDLE AN UNEXPECTED SHIFT FROM OFFLINE TO ONLINE, YOU CAN MAKE A DIFFERENCE IN THE MARKET."
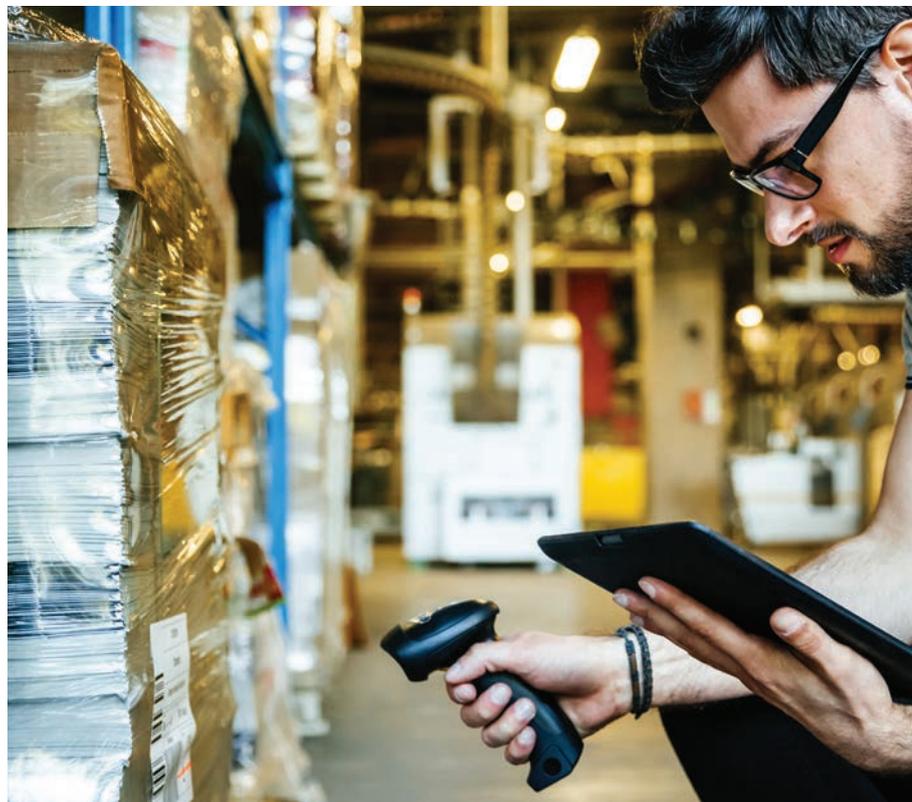
Small online orders

Now that many companies are slowly emerging from the crisis, new questions arise. Questions about the warehouse of the future. How can we prepare for future disruptions? Which processes and systems are needed? And what role can people play in the warehouse of the future? Van den Broecke gave that question some thought. "The biggest challenge is to process online orders that often only consist of one or two pieces. Many warehouses are used to working at a pallet or box level, but picking, packing and shipping small orders is something completely different. Especially given the tight cut-off times that many

webshops handle. Warehouses do not have three days to process an order, but have to ship their parcels the same day," says Van den Broecke. Warehouses that do not adjust their processes lose efficiency. Without measures, an order profile with more small orders leads to a lower picking density. "This means that warehouses have to look for new solutions which they can work with efficiently, despite all those small orders."

Man & machine

Automation and mechanisation of processes offer warehouses extra order fulfilment capabilities and possibly extra storage capacity. "But also think of robots that are increasingly capable of performing physical operations at the item level. Automation and robotisation are crucial for a fast, reliable and efficient fulfilment process."

Van den Broecke has high expectations of the deployment of robots, which partially can replace order pickers. "The big advantage of robots is that companies can increase capacity in the warehouse in a flexible way without having to commit themselves in advance to a large-scale automation system with a limited capacity. Moreover, the capacity that must be reached within three, four or five years to make the high investments profitable."

Whether companies opt for automation or robotisation: people continue to play a crucial role in the warehouse. "Not all operations can be performed by machines or robots. People provide flexibility, for example, when handling large or fragile products. Also, they offer the possibility to scale up quickly in the event of peaks. An unexpected increase in online orders cannot be absorbed by quickly adding a machine."

Gamification

The question is how DC activities remain attractive to people. How much fun is order picking when robots are the closest colleagues? How do you keep your associates engaged? Van den Broecke introduces the term 'gamification'. As an example, he mentions a fitness application such as Strava, which is popular among cyclists who want to measure their performance and compare it with that of their friends. "In a similar way, we can constantly give associates in the warehouse new challenges. We can reward them as they take up those challenges and complete them successfully. We can compare employee performance honestly. Moving a pallet can't be compared to moving a box or a loose item," Van den Broecke emphasises. "If performance is good, associates can earn points, for example, a gadget or an extra hour of leave." Managers can also set up joint challenges by setting a target of one million picks as an example. With gamification, we can keep the work attractive and challenging for the younger workforce who enter the market, the digital natives. By giving them access to the latest tools and empowering them, we can keep them engaged and self-motivated.

Versionless

Besides robotisation and gamification, artificial intelligence and machine learning are other important elements of the future warehouse. If you want to be able to process and ship even that last order on time, you will have to pull those orders through the system, as it were. "You can increase the picking density in the warehouse by merging orders into batches, but then you have to sort the picked items by order again. That again takes extra time. Artificial intelligence helps ensure that all orders are dispatched on time." Artificial intelligence and machine learning help increase operational efficiency. By comparing today's order profile with order profiles from the past, the system can predict with greater accuracy how much time it is needed to process all orders. Based on that analysis, the warehouse management system can release the right orders at the right time. "Important in this respect is that with the rise of the cloud, we are moving towards versionless software. As a result, companies always have access to the latest innovations and upgrades are no longer necessary; for example, when it comes to artificial intelligence. The speed with which we can implement innovations determines our customers' competitive position. If the processes and systems cannot follow the speed of change in the business, and a company is not prepared for the future, it will have a hard time to survive."

TIME FOR A FRESHER VIEW ON GROCERY

The grocery industry of today looks quite different from that which started the year. Now it's time for grocery retailers to take stock of their achievements to date and to ask: What does the 'new normal' look like? And how can grocery retailers meet new consumer expectations moving forward?

First, and most obviously, COVID-19 has changed the way supermarkets physically look and feel: wider aisles where possible, more frequent cleaning, increased usage of contactless and card payments, fewer stock-keeping units being held on site and more pre-packaged fresh items currently being sold.

Second, COVID-19 has had a fundamental impact on the psychology of how and when consumers now purchase goods. According to a recent report published in Forbes, the pandemic has accelerated the growth of ecommerce by as much as six years, leading to an increase in the overall share of mobile-first ecommerce and significant increases to relatively new hybrid approaches to purchasing, such as buy online, pickup in-store (BOPIS) or even curbside pickup.

Furthermore, there have been significant shifts in the number of visits consumers are willing to make to physical stores. This has resulted in increased basket sizes, underlining the consumer aversion to physical shopping trips and a willingness to spend more per visit. The grocery industry will need to evolve to fit the new landscape it now occupies.

Jacky Marolleau,
Sales Director,
Manhattan
Associates

Ecommerce boom

Coupled with the increasing popularity of purchasing options such as BOPIS and curbside pickup, the grocery industry post-COVID-19 will need to focus on two key areas: putting a true, authentic omnichannel customer experience at the core of its offering and having scalable, agile technology solutions that provide warehouse, DC, supply chain and transportation management teams with the flexibility and scalability to pivot and innovate.

While many in the grocery space have been watching ecommerce business grow rapidly, ecommerce fulfilment represents a number of challenges, too. First, it represents a much higher cost to the reseller, meaning grocery retailers need to look at more efficient (sometimes automated, sometimes robotic) picking options in their distribution centres and dark stores where possible.

Second, ecommerce offers the consumer many more service options. Whether it's delivery slots for home delivery, BOPIS, curbside collection or suggestions for items that are out of stock, all of these options require systems that can collaborate and communicate from a basic inventory level, right through to picking, transportation, delivery and customer communications.

The future is omnichannel

Right now, there is an opportunity to reinvigorate and reshape the industry landscape. Effective ecommerce and hybrid fulfilment methods, along with true omnichannel capabilities, will form the basis of this regenerative process for global retail (including grocery) and its billions of worldwide customers.

Despite the challenges many in the grocery industry have faced over the last four months, technology remains a major priority. So, ask yourself this: "Are the ERP solutions we currently operate fit for the purpose against what is now such a dynamic and fast-paced industry backdrop?"

AHOLD DELHAIZE'S SUPPLY CHAIN TRANSFORMATION

In 2019, global grocery retailer Ahold Delhaize announced it was investing $480 million to transform and expand its U.S. supply chain operations in support of a new three-year strategy to move to self-distribution. In self distribution, the company insources many supply chain activities that were formerly outsourced.

Ahold Delhaize was formed in July 2016 from the merger of Ahold and Delhaize Group. With a very strong East Coast presence, the US operations generated over $47 billion of the global retailer's revenues – over 60 percent of the total. Prior to the Ahold Delhaize merger, Delhaize did their own logistics and most of their own procurement. Ahold, on the other hand, outsourced about 70 percent of their logistics and procurement to C&S Wholesale Grocers, US largest wholesale grocery supply company.

In the U.S., 17 distribution centres provide fulfilment to over 2000 stores on the East Coast. 1.1 billion cases flow through this network every year. The warehouse network will expand to 26 facilities by 2023. In the deal announced in December, Ahold Delhaize USA will take back all the outsourced distribution centres over the next 30-36 months. Retail Business Services, the shared services group that has emerged subsequent to the merger, is responsible for this supply chain strategy.

"Moving to a self-managed supply chain will enable Retail Business Services to reduce costs for the local brands it serves, improve speed to shelf, deepen relationships with vendors and better position our companies' distribution centres in the communities they serve," according to Chris Lewis, Executive Vice President of Supply Chain for Retail Business Services . "These changes will enable us to take advantage of financial and strategic value within procurement, logistics and warehousing to provide the freshest product through the most advanced, efficient delivery network in the grocery industry. Once the transformation is complete, Ahold Delhaize will save $100 million per year."

Technology is key

While good placement of warehouses helps reduce the miles trucks drive to fulfill orders to the stores, transportation management systems (TMS) also play a key role. Currently 1,000 trucks are traveling more than 120 million miles annually across the East Coast network. A TMS reduces freight costs in a variety of ways. For contracted carriers, the TMS leads to better negotiations of long-term contracts. The freight audit functionality makes sure the carriers are not being overpaid. But much of the savings in a TMS comes from better routing and insuring trucks are more fully loaded - these capabilities save money and reduce emissions. Retail Business Services has selected Manhattan Associates' transportation management system.

Retail Business Services is also in the process of selecting a common warehouse management system (WMS). A WMS increases picking efficiencies, which lowers labour costs. In making sure trucks are efficiently loaded and leave on schedule, having WMS and TMS solutions that are tightly integrated can improve synergies. While Retail Business Services has not made the final decision on who they will go with for WMS, Manhattan Associates' WMS solution is in the mix. The transformation will save significant amounts of money, improve customer service, and aid Ahold Delhaize in reaching their sustainability goals. The transformation relies on technology, culture change, and new processes. Ahold Delhaize has not gotten the same plaudits for their supply chain efficiencies as Amazon and Walmart. This will begin to change these perceptions.

Steve Banker,
*Vice President
of Supply Chain
Services, ARC
Advisory Group*

This article originally appeared on Forbes.

ADJUSTING TO THE NEW NORMAL: THE IMPORTANCE OF INVENTORY VISIBILITY

The future of retailing in the 'new normal': It's all about real-time inventory visibility. Zebra Technologies provides a range of sensor technology, software, mobile computing products, analytics solutions, and more, to empower teams on the front-line of retail. By providing employees with real-time access to intelligence, anywhere they need it, they are always able to take their next best move.

Recently Manhattan's Jon Liberman Vice President, Enterprise Mobility, sat down with Drew Ehlers, Zebra's Global Futurist, and GM for SmartPack™. In their online discussion they spoke about the challenges of the 'new normal' and how retailers can get ahead of rapidly changing customer expectations and compliance requirements. From the need for total real-time inventory visibility to the role for robotics, we take a look at the highlights of their conversation below.

From all of the newness what we're seeing, what is Zebra doing to make the shopping experience more frictionless for the customer and retailer?

Drew spoke about the need to offer the best customer experience by allowing people to select the fulfilment modality that best works for them. This means providing versatile fulfilment options – from click & collect – kerbside or in-store, to home delivery, with the options for pick-up and returns from kiosks or convenience stores closer to home. Central to this versatility is the need for a continuously updated view of inventory across the business.

Inventory visibility is especially important for kerbside delivery, that's become hugely popular. Indeed, ensuring that associates know what orders they're meant to be processing – and when – avoids any issues that can prolong contact with customers (and create social-distancing issues). Drew also spoke to the need to plan a smooth journey for shoppers who wish to visit the store. And that means ensuring stock levels are as expected – again emphasising the value of inventory accuracy.

PREDICTIVE ANALYTICS CAN TELL YOU WHERE STOCK NEEDS TO BE AHEAD OF TIME TO ACCELERATE FULFILMENT.

How can complete visibility be achieved?

Achieving continuous inventory visibility means moving away from slow processes. For example, tasks such as batch processing updates overnight can cause inventory blind spots and impair effective fulfilment. Drew also recommends reviewing the tech stack, and to discuss with partners such as Manhattan, about how to ensure data integration across all key retail fulfilment systems to enable inventory visibility.

Drew highlighted too the greater need to embed RFID more widely into operations. RFID tags give items a 'digital voice'. That voice can be read constantly by fixed readers to track the location of items. Traditionally used in warehouses, there's now a greater need for the technology to be used in stores. This is because stores are increasingly being used to fulfil orders and the efficiencies fine-tuned in warehouses over decades can be applied to help associates pick orders with greater efficiency.

Deploying new technology also has a role to play in achieving inventory visibility. RFID is an essential component of Zebra's SmartLens™ solution that turns the retail floors into smart spaces; spaces that provide a continuous view over the location of merchandise, associates, shoppers and assets. SmartLens also provides actionable insights based on what it's seeing to help teams make effective decisions and boost competitive advantage.

There's also an increasing role for using predictive analytics in inventory planning. Zebra Prescriptive Analytics includes machine learning algorithms that can be added as an overlay to any inventory system. It can give you predictions by zip code – and down to an individual – of what people are going to buy. The accuracy level is around 85 percent provides the insight to understand where stock needs to be – ahead of time – to fulfil orders quickly.

"GOOD VISIBILITY ON YOUR REAL-TIME INVENTORY. THAT'S FOUNDATION #1…. THINGS LIKE BATCH ANALYTICS OVERNIGHT? THAT'S NOT GOING TO CUT IT ANYMORE." Drew Ehlers

If an era of more kerbside pick-ups how can retailers ensure they don't lose out on the upsell opportunity?

Turning to the potential loss of spontaneous sales that occur when people come into store, the conversation switched to the need to make sales platforms more intelligent. This includes offering more recommendations based on basket contents. Also, it's important to offer customers the scope to amend their orders as late as possible – even down to two hours before their pick-up slot.

Looking ahead what other changes will emerge as we adjust to these unique times?

Drew and Jon identified computer and machine vision as a technology that has a lead role to play in the future of retail. A good example is Zebra's SmartSight™ front-of-store robot. It uses these technologies to direct associates to restock shelves, fix pricing and amend planogram issues before customers realise there's a problem. The solution helps manage the increased demand for in-store picking and frees associates to focus more on customers and less on operational tasks. On average, retailers using SmartSight can re-assign an average of 65 associate hours per associate, week.

Tune in to see more: A number of Zebra executives will feature on Manhattan's EMEA Exchange Connect 2020. Held over 6 October, and beyond, the team will speak about unique retail solutions for unique teams, Zebra's Fulfilment Edge Warehouse Management Software, and omnichannel strategies.

ORDER MANAGEMENT SYSTEMS DEMYSTIFIED

Adopting an OMS can seem complex and expensive at first for decision makers in retail, but good practices have emerged to make it easy and effective. What are these good practices? Manhattan Associates' Emily and Yann share their vision.

Yann Le Peron,
Omnichannel Business Solutions Director

Emily Moyer,
Senior Software Consultant

According to the annual 2019 study 'The State Of Retailing Online' by Forrester 53% of retailers plan to invest in an Order Management System (OMS). At first glance, it can be a complex case for decision makers. The adoption of an OMS has proven impacts on sales figures, customer retention and operational efficiency, but can be a potential disrupter for IT organisations because it is a system at the heart of everything. Fortunately, it is possible to obtain the benefits of an OMS while minimising the impact when executed with the right mindset and an understanding of the common pitfalls to avoid.

Agility: an imperative for success
Organisations that are successful in their OMS deployment have a few agile factors in common:
- Visionary business leaders that rightly acknowledge incremental scope additions and a solution that allows agility over time is the best approach.
- A strong foundation with defined fundamentals such as understanding if markets have access to inventory from other regions or brands.
- Keep milestones of successes close to keep the project teams and stakeholders engaged over time.

- Early creation of internal cross-functional OMS specialists with skills from digital, supply chain, retail, and finance teams.
- Select a configurable OMS solution with a rich catalogue of APIs.
- Utilising 'OMS Champions' and APIs for incremental configuration and integrations, which lowers the solution's total cost of ownership (TCO).
- Accepting an imperfect solution to quickly benefit from added capabilities of a standard packaged OMS.
- Piloting features to empower operational users. For example, store users trying different devices for the store application.

Willingness to boldly change plans when necessary - for example during the COVID-19 crisis - is another noteworthy example of agility in successful deployments.

Not a one-size-fits-all solution
Some packaged 'OMS' solutions support very basic order routing and have a harder time with multi-shipment orders, multiple selling channels, order modifications, and omnichannel return orchestration.
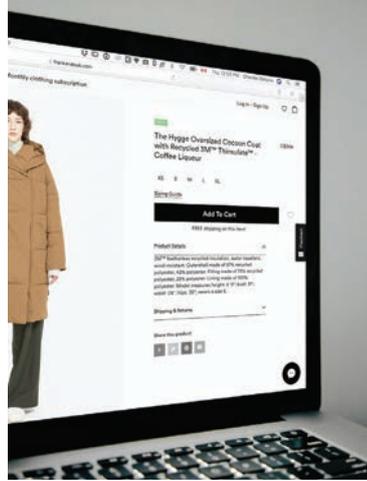
Some retailers utilise ecommerce applications for direct-to-consumer (DTC) order flows, which becomes limiting for multi-location fulfilment. Similarly, extending an ERP lacks flexible configuration for future possibilities and an in-house OMS takes ages. Brands with an enterprise omnichannel roadmap choose more complete packaged omnichannel OMS platforms because of their scalable cloud technology, large and global customer base in various industries, and continuous innovation cycles that make their platform an asset to long term omnichannel strategy.

Hybrid strategies have emerged to use the robust order promising and orchestration capabilities of a pre-packaged OMS and its extensibility and 'user exits' to connect it through APIs with home-grown services. This is typical for integration with 3rd party services, like payment or carrier gateways. Benefits to this strategy include:

• Unifying channels to streamline architecture which reduces its TCO.
• Access to existing connectors with 3rd party services, such as payment platforms like Adyen and Cybersource, and multi-carrier management solutions such as Logistyx, Metapack and ProShip.
• Owning the integration requirements with 3rd party commerce and carriers directly which supports 'headless' ecommerce platforms.

In addition: retailers will be able to maintain the 'secret sauce' of in-house managed business logic. This is crucial for their distinctiveness in the market.

What are the four most common clichés on OMS architecture? And how can we overcome them?

4 CLICHÉS ON OMS

Cliché #1: An OMS must always integrate directly with the WMS

The ERP and warehouse management system (WMS) connection can be maintained by using the ERP as the middleman, placing OMS between the selling channels and the ERP. This can be a tactic for accelerating initial deployments and connecting the WMS to the OMS when the opportunity arises, for example, as part of a WMS or ERP upgrade.

Cliché #2: An OMS needs to process orders from all channels

It is common to introduce an OMS to optimise only one channel, for example DTC or store replenishment order flows, while other channels continue to be processed by the legacy system. For this purpose, an OMS has options to enable a physically mutualised warehouse stock, while visibly providing 'buckets' of stock per selling channels. Options include inventory segmentation per selling channel or simple allocation pass-through for certain channels.

Cliché #3: Batch-controlled POS technology disqualifies store inventory for omnichannel

OMS are quite adaptive and expose a large catalogue of APIs to facilitate the synchronisation of store inventory positions, supporting anything from daily full stock snapshots, to the individual item level incremental events, in 'delta' or 'replace' mode. Additionally, configuration can be added to 'protect' inventory to overcome the risk of intermittent inaccuracy.

Cliché #4: An OMS cannot be introduced without a redesign of the online user experience

Adding ship-from-store improves the online customer experience by reducing out-of-stock situations and potentially enabling quicker deliveries, while causing no major impacts on the design of the site. The OMS simply replaces the system that takes responsibility for publishing quantities by still showing one aggregated stock figure with the ecommerce warehouse stock now augmented with the store stock. When the retailer wants to enable the selection of a store for a pickup service, some new UX design could be required.

FOCUS ON THE FIRST MILE, NOT THE LAST

Rather than the last mile, it's actually the first mile of the process that ensures supply chain success and aids customer satisfaction.

Craig Summers
Managing Director United Kingdom & Ireland, Manhattan Associates

From click-to-dispatch, the first mile represents the journey from the point at which a consumer places an order, to the time that it is picked, packed and dispatched, including every aspect of the supply chain process that makes this possible.

It is here in the first mile, not the last mile, where brands evolve to meet the shifting behaviours of their customers, can maximise inventory to increase the bottom line and (crucially) ensure the wellbeing of many of their employees during the pandemic.

Practice makes perfect

These things do not simply happen overnight and adapting and evolving has historically often taken retailers months and even years to effect change – not a luxury that has been afforded to anyone this year.

The old adage that 'crisis drives innovation' has certainly played out over the course of the pandemic, with many established names adopting a start-up mentality and becoming much more agile in the decisions taken and the practical rollouts deployed.

The past six months has seen a number of challenges for retailers, not least for many managing the rapid transition from omnichannel retail to a pure play model, two fundamental areas stand out, both of which are rooted in the first mile of the supply-chain journey.

1. Warehouses

Understanding people and product movement have traditionally been the key indicator of warehouse performance and employee efficiency, but in the socially distanced world of warehousing, you need to rely more on technology to help maintain the efficiency of the click-to-dispatch process.

Whether it's limiting numbers of workers in specific zones; using swipe keys rather than touchscreen keypads or increasing shift rotations to maintain picking efficiency and productivity, the technology that operates a warehouse during the first mile of a product's journey is key.

> "IT IS AFTER ALL, STILL THE FIRST MILE THAT WILL MAKE OR BREAK THE SUCCESS OF A BRAND PROMISE TO ITS CUSTOMERS, NOT THE LAST."

2. Inventory

If you have got it, you should be able to sell it, no matter where in your supply chain an item is. However, in practical terms, this simple concept is complicated to achieve.

Open-architecture IT, including cloud and microservices, as well as developments in AI and machine learning mean retailers can ingest more data to predict demands on retail supply chains. In turn, firms can be more effective in allocating inventory and rolling out new delivery models (like click-and-collect or curbside pick-up), essentially rendering the need to invest further in complicated ERP deployments (that are often expensive, time-consuming and inflexible) redundant.

Consumer conditioning towards ecommerce and the ongoing demand for delivery services has led to a growth in micro-fulfilment centres, an increased reliance on accurate inventory and an appetite for faster change at the board level.

The road to recovery

While with any luck coronavirus will not be with us forever, its impact will certainly have a significant and lasting effect on consumer behaviour and the first mile of the supply chain. With consumers more inclined to be forgiving of businesses during this period, now is the time to be bold and pilot new innovative approaches and agile processes.

In the future retail landscape, it will be brands that are nimble and embrace the flexibility afforded to them by advances in cloud and AI solutions that will thrive in a post-pandemic retail landscape. However, it is worth remembering that 'innovative' delivery methods and en vogue technology are no substitute for getting the basics right. It is after all, still the first mile that will make or break the success of a brand promise to its customers, not the last.

GIANT EAGLE REDUCES COSTS AND INCREASES CUSTOMER VALUE

Giant Eagle is one of the largest food retailers and distributors in the United States. Multiple outdated systems created barriers to greater efficiency and cost reduction. With the solutions of Manhattan Associates the company improved its accuracy and productivity.

Giant Eagle is the number one supermarket retailer in its region with 221 supermarkets and 140 fuel and convenience stores throughout Pennsylvania, Ohio, West Virginia and Maryland. Each store carries between 20,000 and 60,000 items, more than 7,000 of which are offered under the company's own brands program. Giant Eagle operates five distribution centres located throughout its service area - ranging from 27,000 to 244,000 square meters - and was using outdated, batch technology with multiple systems in several locations to run its supply chain operations. Basically, Giant Eagle had maximised its capabilities and the cost efficiency that could be achieved with its current systems. The company wanted to find a single vendor that could meet all of its supply chain requirements and accommodate advanced functionality, including flow-through order processing, put-to-store picking, and expanded RF and voice functions.

Solid understanding
Giant Eagle initially interviewed more than 10 companies in its quest for the best solution. Four vendors made the final list and Giant Eagle required a detailed demonstration from each finalist. Hilzendeger explained, "We wanted to work with a supply chain company that had a solid understanding of our industry and could grow with us. We needed to feel comfortable that they could come in and partner with us to develop the grocery-specific functionality we needed." According to James Hilzendeger, Director of Giant Eagle, "Bottom line, we needed to continue to reduce costs and improve our customer value proposition. We use the Toyota Production System methodology, which considers customers, quality and people in an effort to increase overall operational efficiencies. Manhattan's warehouse and labour management solutions are a big component of this strategy."

Co-development
The implementation strategy was to go live with Warehouse Management and Labour Management at the most complex facilities first, then to roll out the solutions to the other facilities. A dedicated Giant Eagle and Manhattan team co-developed a number of advanced grocery-specific capabilities, including enhanced code dating, advanced directed putaway options, real-time tasking and put-to-store functionality. The solutions' realtime capabilities enable replenishment priority bumping, which ensures product is at the pick slot at the right time, reducing skipped picks or order shorts and
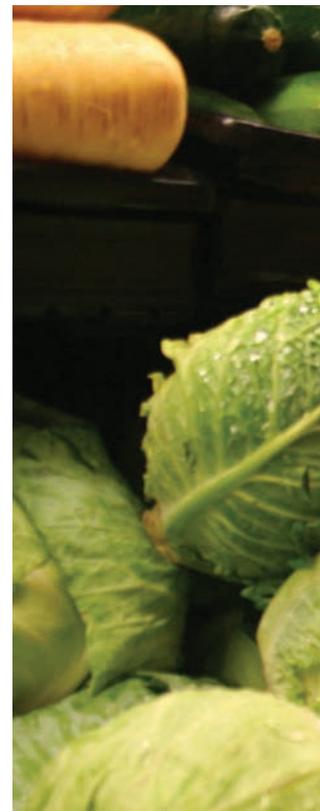
> **"MANHATTAN'S SOLUTIONS GIVE US THE CAPABILITIES AND EFFICIENCY WE NEED WHILE TAKING COSTS OUT OF OUR SUPPLY CHAIN."**
>
> James Hilzendeger, *Director, Giant Eagle*

CHALLENGE
Giant Eagle was using outdated batch technology and relied on multiple systems in various locations. The company needed to reduce costs and improve its customer value proposition.

SOLUTION
Giant Eagle implemented Manhattan's Transportation Planning & Execution, Warehouse Management, Labour Management and Extended Enterprise Management solutions to gain new capabilities and efficiency while reducing supply chain costs.

PROGRESS & RESULT
Inbound/outbound accuracy exceeds 99.9%; productivity improved 8-10% in Giant Eagle's health & beauty DC and 3-5% in other DCs.

eliminating the need for follow-up chases. Labour Management was a necessary component of the go-live for every facility given that some labour standards were already in place. Today, Giant Eagle uses the Manhattan solutions to run all operations in its five distribution centres, including RF receiving, directed putaway, directed replenishment using the priority bumping capability, voice selection, RF loading, put-to-store, trading partner management, labour management and advanced reporting.

Productivity rises 8-10%
Since implementing the solutions, Giant Eagle has improved accuracy in inbound and outbound receiving. "In the past, items were often mislabeled. Now we are 99.9% correct on LPNs and receive the right items in our warehouses," said Hilzendeger. In addition, the company has reduced the number of mis-shipped totes to zero. Totes transport a number of small products such as health and beauty items to Giant Eagle's stores. Giant Eagle has doubled the number of direct labour hours on a labour standard, resulting in

significant gains in productivity. Hilzendeger explained, "We now have the majority of direct labour hours used on a labour standard, which has improved productivity eight to 10% in our health and beauty care distribution centre." Other facilities have seen a 3-5% increase in productivity. Giant Eagle plans to keep reducing time to replenish store shelves, time from order placement to delivery to the distribution centre, and time from the vendor to the distribution centre. Hilzendeger said, "With real-time capability provided by the Manhattan solutions, we're able to capture and analyse the time required for each step of the distribution process. These improvements will enable us to increase throughput and ultimately reduce our inventory investment and space requirements."

"We're growing at a much faster rate than the industry overall and wanted to support our growth without adding brick and mortar. The functionality provided in the Manhattan solutions gives us the capabilities and efficiency we need while taking costs out of our supply chain."

THE FUTURE OF ROBOTICS IN A POST-PANDEMIC WORLD

Few in the world today have not been impacted by the global COVID-19 pandemic. How can retailers and 3PLs take control of this dynamic environment, to efficiently and cost-effectively manage a growing business, while staying ahead of their competitors? The answer is: innovation through new automation technology.

Denis Niezgoda,
Director of Business Development Europe, Locus Robotics

One key innovation that is disrupting the industry is robotics. Initially, when labour was plentiful, the introduction of robotics was viewed with skepticism to all but the most enlightened. Today, labour is now difficult to attract and retain, and the work itself is hard. Robotic automation is now an accepted (and expected) part of factories and warehouses. Their ability to reliably perform basic, repetitive functions has improved productivity with less labour while also improving the overall workplace quality and safety for the worker.

The Autonomous Mobile Robot (AMR), an innovative and proven type of automation, offers many advantages to boosting productivity in a warehouse. The robots are fully autonomous, safely operating alongside and collaborating with workers to maximise productivity. Deployed as a multi-bot fleet, AMRs like the LocusBot, mean that more work can get done at a faster pace without adding more labour or disrupting existing operations.

Health safety
The key to how AMRs increase productivity comes from how they collaborate with a worker. With multi-bot AMRs, workers do not simply follow an automated cart. Instead, workers focus on picking in a specific 'pick zone'. This effectively eliminates wasted and unproductive walking time. With AMRs, workers walk 50% less per day and productivity is instantly increased 2X while cycle times are lowered.

One unexpected benefit resulting from the COVID-19 pandemic is how AMRs help with health safety. With social distancing required within the warehouse, warehouse personnel are challenged to maximise productivity while still minimising one-to-one contact. Using AMRs, workers can work even more efficiently while naturally minimising human contact. Worker interaction is limited mostly the worker and the robot. Now, the only time the workers need to interact is during breaks or at the start and finish of a shift. And, robots can be easily and safely sanitised, further reducing any risk of exposure.

Fast deployment
The value of the multi-bot AMR solution vs. cart based systems has become increasingly clearer as the new normal is established. With more people shopping online, AMRs allow operators to easily scale to seamlessly manage volume surges, spikes and seasonality. This makes managing labour and controlling costs significantly easier.

The Locus AMR solution was designed for easy setup and fast deployment in a cloud-based operation, meaning most phases of deployment and operation can be completed remotely. This is ideal for today's current quarantine or restricted-access scenarios. Warehouses can deploy this AMR solution in a little as four weeks, enabling them to react quickly – and stay ahead.

While success in the new normal is difficult to quantify, the early adopters of AMR technology have already seen massive gains in terms of productivity and many are growing and expanding their AMR operations. Those who delay deployment decisions risk getting left behind, losing competitive advantage, or worse. Such is the rate of change in the technology.To be successful in today's dynamic e-commerce and order fulfillment environment, those who embrace – and deploy – robotics automation will be best positioned for future success.

SILVER LININGS: BE THAT CLOUD, ECOMMERCE OR THE MODERN DAY HERO

Ever determined to look on the bright side, I stand in awe of all that is great in this world. From technology that wows, to shopping angels that keep on delivering, to everyone's adaptability in a time of change.

Georgia Leybourne,
Senior Director International Marketing, Manhattan Associates

Who hasn't benefited from the cloud in the last few months: Be it our children on their gaming devices, home workers on video conferencing, stalwarts in the supply chain keeping inventory in-flight or the medical profession maxing out their hours.

The cloud makes our everyday life functional and productive.
- Connecting with loved ones
- Shopping for essentials
- Entertainment on tap
- Undertaking business operations remotely.

Now, take that fundamental capability and couple it with a business critical application, then sit back and watch the magic happen: scalability, agility, efficiency … on steroids.

As my own personal shopping habits have pivoted more and more to online, the speed with which those parcels arrive through the door offers comfort, sustenance, pleasure and never-ending surprise. I think often about the people involved in that process, the jobs that are needed to keep those wheels in motion and I thank my lucky stars that we live in a world where commerce is alive and kicking. With eCommerce volumes accelerated by six years (according to Forbes), the adaptability around us to cater to this added workload is extreme.

Innovation abounds to continuously finesse the customer experience. My cup runneth over when faced with the rise of robots in the warehouse, the advent of gamification in the work place, the unification of apps across all devices, the next gen iPad that arrived last week (with Apple pencil) and the drone used not only at home for fun and games, but at work too in a filming project. It's all so very very clever.

In amongst all this forgive me for my new parenting solution for hailing the family to the dinner table … I switch of the WiFi and watch them flock. It works every time.

Stay safe. Stay productive. Be kind. Embrace technology to the full.
And make it happen.

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