# The Evolving Warehouse
## Challenges and Technology Trends

Today's warehouses and distribution centers are dynamic centers of activity that play critical roles in global supply chains. Companies must evaluate how they manage their warehouse operations to handle supply chain disruption, changing customer buying behavior, and a host of other challenges.

# INTRODUCTION

Once considered simple "storage facilities," today's warehouses and distribution centers are dynamic centers of activity that play critical roles in global supply chains. While these facilities have historically been housed in giant industrial spaces, that's changing too. As companies seek ways to get products closer to their customers—and as real estate gets both scarcer and more expensive—organizations are devising more creative warehousing approaches.

At the same time, warehouses are managing a higher volume of small orders—something older facilities simply weren't built for. They are also getting increasingly involved in value-add activities such as kitting and assembly. Many of these operations still rely on manual processes, spreadsheets, and aging on-premises technology that put them at a significant disadvantage. To address these and other shifts, companies need technology that helps them distribute in a business landscape where ongoing labor shortages, physical space limitations, and annual double-digit ecommerce growth are putting new pressures on warehouses.

Ongoing supply chain disruptions, ocean port congestion, geopolitical events like Brexit, transportation capacity shortages, and natural disasters can also wreak havoc on the best-laid distribution and warehousing plans. After all, it doesn't take a global pandemic to bring a supply chain to its knees. One plant fire, hurricane, blocked logistics super highway, or cybersecurity attack can severely hamper an organization's ability to get its product to market on time.

Knowing this, smart companies are building and maintaining resilient business models that help them adapt to these disruptions, manage changing customer behaviors, quickly reconfigure their logistics and distribution networks, and then optimize those networks to continue to deliver on expected service levels.

In this business brief, we explore the ever-evolving warehouse and distribution environment; describe the challenges it presents for organizations; and explain how companies can harness "anytime, anywhere distribution" to address current challenges and plan more effectively for the future.

## THE CHANGING WAREHOUSE & DISTRIBUTION ENVIRONMENT

Fulfilling customer orders at any time and from anywhere has become table stakes in the ecommerce space, where U.S. online sales jumped by roughly 34% in 2020 and are expected to expand by another 14% in 2021. These double-digit annual sales jumps have pushed down vacancy rates for industrial properties while driving up the costs of existing warehouse space. According to commercial real estate firm CBRE, the U.S. will need 330 million additional square feet of distribution space by 2025. (Every additional $1 billion in online sales equates to 1 million new square feet of physical space.)

This is not just a U.S. phenomenon. U.K. research similarly shows that, for every extra £1bn spent online, a further 775,000 square feet of warehouse space is needed to meet the new demand.  In the Middle East, the rapid expansion of warehousing and logistics is going hand-in-hand with automation, with the warehouse automation market expected to triple in size by 2025 to $1.6bn compared to the same market back in 2018.

Seeking new ways to place inventory closer to their customers, inventive companies are setting up fulfillment centers in the unlikeliest of places. From pop-up warehouses designed to accommodate peak times (e.g., a holiday season or a promotional campaign) to fulfillment centers set up in vacated retail stores to automated fulfillment centers that serve ecommerce and local store pick-ups, the modern warehouse is quickly morphing into much more than just a storage facility.
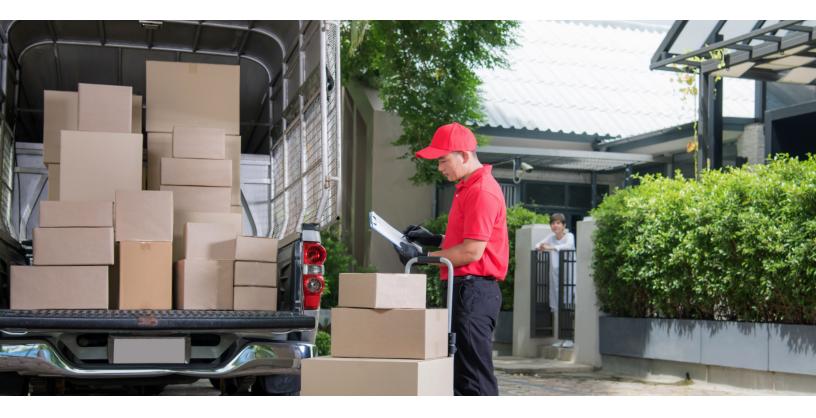
Focused on closing last-mile delivery gaps and getting orders out to customers on-time and cost-effectively, companies have also converted some of their retail space into "mini distribution hubs," while shopping mall owners have transformed underutilized space into distribution and fulfillment centers. Built to accommodate ad-hoc changes, these and other pop-up warehouse networks transcend traditional warehousing and help companies more effectively manage disruption, accommodate change and operate more sustainably.

In the retail arena, Walmart has been open about its willingness to test out new fulfillment strategies. In November 2020, for example, the retailer announced that it was using "pop-up" space in 42 of its distribution centers to manage holiday ecommerce orders. While regional distribution centers typically ship pallets of products to stores—and not individual products to customers' homes—the pop-ups handled about 30% of the retailers' holiday volume for the 2020 season.

This is just one example of the quick changes taking place in the warehousing environment right now. In another, one U.K.-based company had to quickly reconfigure its supply chain due to Brexit, which removed the free movement of goods between the U.K. and the EU. Acting quickly via its logistics provider, the company rapidly deployed Oracle Cloud WMS to get a new warehouse up and running in a mainland European country, thus avoiding potential supply chain disruptions.

With many other companies now operating under similar constraints brought about by changing global trade regulations and free trade agreements, a cloud-based warehouse management system (WMS) provides a convenient way to rapidly and cost-effectively redeploy operations to avoid these disruptive events.

## BUILDING A GROUNDWORK FOR PERFECT DELIVERIES

Today's customer wants and expects perfect deliveries that arrive on time and in the right condition—every time. They've been promised this by some of the world's largest e-tailers, and they won't settle for anything less. As if this didn't present enough challenges for companies, omni-channel distribution took over at a time when few companies were prepared to manage it.

A multifaceted supply chain strategy that finds companies fulfilling orders at any time and from anywhere—and where manufacturers function as their own "retailers," so to speak—omni-channel is driving an immediate need for modern warehousing technology. Using a cloud WMS, for example, companies can place inventory in multiple locations to reach the largest potential customer base, meet trade and regulatory requirements, and manage myriad disruptions and unforeseen events.

The problem is that many companies still rely on manual processes, paper, spreadsheets, and disparate systems that don't "talk" to one another. These manual and siloed systems

are largely on-premises, which means companies can't take full advantage of the cloud's always on, always connected, collaborative capabilities.

With inventory located in different places, the discrete manufacturer adding new capabilities in Vietnam, the third-party logistics (3PL) company adding new fulfillment space in a vacated mall, and the electrical distributor adding new sources of supply to offset product shortages must all be able to gather data quickly, access and update it in real-time, and then share it with all stakeholders across multiple locations.

Having a real-time view of stock across all locations—including goods in transit, in the yard, and other inventory holding sites—will allow a company to stay competitive. A cloud WMS makes it easy to set up and use warehouses quickly, without being anchored to legacy manual or on-premises systems. It also allows employees to collaborate remotely, thus reducing interruptions and ensuring safety—even during times of disruption.

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## HOW CLOUD WMS SUPPORTS ADAPTIVE SUPPLY CHAINS

As makers of finished, distinct products, discrete manufacturers face unique challenges when getting their products to their customers. With supply shortages and transportation delays already cutting into their manufacturing timeframes, these companies need efficient, technology-driven distribution networks that surpass traditional linear supply chains. Where the latter take a straight path from raw materials to production to delivery, the former adopt web-like structures that specifically address supply chain evolutions.

A discrete furniture manufacturer with a high concentration of suppliers in China, for example, may have reshored or onshored some of those operations to a country like Vietnam due to pandemic-driven supply chain shortages. When that happened, it would have needed alternate distribution sites or warehouses that could get up and running quickly. With a cloud WMS, the company's U.S. headquarters could effectively extend that application to the new location(s) quickly and efficiently.

The 3PL companies that support the world's manufacturers, retailers, and distributors also need a robust cloud WMS to help them adapt quickly when the need arises. The 3PL that is asked to set up an operation in a new city for a large customer, for example, needs a way to recoup that initial investment quickly in order to justify the project cost. The 3PL also must scale up or down based on demand (e.g., be ready to accommodate peak season but not overextend on space when it's not needed). This not only addresses the individual 3PL's immediate needs—and the needs of its customers—but it also helps build stronger supply chains overall.

## HARNESSING ANYTIME, ANYWHERE DISTRIBUTION

Customer buying behaviors and demand patterns are changing constantly, and no discrete manufacturer, distributor, 3PL, or retailer (online, offline, or both) is immune to these shifts. Many companies are experiencing radical changes that impact the distribution of their goods, and they're turning to technology for help. They're also evaluating their warehouse management operations to run efficient and sustainable distribution

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networks that support these changes, and are also making strategic decisions and taking necessary actions.

Being able to transform any site—be it a warehouse, distribution center, storefront, kiosk, or even a garage—into a robust and seamless fulfillment center supports better supply chain resilience, reduces operating costs, and ensures customer loyalty and satisfaction.

Warehouse owners and operators also have to keep an eye on the future, and be ready to change processes in an agile manner to meet new business demands. This includes being able to receive automatic feature updates to their WMS securely, and with minimal downtime—yet another area where cloud can deliver significant business benefits.

Upgrading a traditional WMS to take advantage of new features and capabilities often becomes more of a reimplementation and, as a result, many customers find their WMS applications constraining, rather than enabling, their new supply chain strategies. By the time the WMS is upgraded and the dust settles, the operational requirements have likely shifted again. This functional and productivity drift—and resulting need for yet another painful upgrade after a few years—could easily become a vicious cycle.

Compare this to cloud WMS, where updates can be delivered on a regular basis, often with zero downtime to minimize disruptions and delays to warehouse operations. Customers can "opt in" to the new features and capabilities they require. This is why a cloud WMS is often perceived by the business as an appreciating asset, in that its capabilities will only improve over time.

By establishing flexible warehousing operations focused on perfect delivery (i.e., getting orders into customers' hands on time, every time), companies can not only work through the many challenges outlined in this business brief, but they can also enhance their bottom lines while keeping their customers, employees, and other stakeholders happy.

## PREPARING YOUR WAREHOUSE FOR THE LONG HAUL

Customers now expect the ability to place orders in multiple ways, and receive their packages in two days or less. While the pandemic and other disruptions have introduced new fulfillment challenges, consumers still want perfect deliveries, every time.

Using a cloud WMS, companies can quickly and easily set up the infrastructure needed to meet these expectations and more. Whether they're establishing pop-up warehouses in unexpected places to accommodate the holiday rush, diversifying their supply bases in new countries, or breaking the linear supply chain mold and developing web-like structures that address supply chain evolutions, successful companies are evaluating their current warehouse management approaches and taking the necessary steps to prepare their operations for the long haul.

Prepare your warehouse for the future with Oracle Cloud WMS.

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