AutoStore

The Rise of e-Commerce

At the convergence of e-commerce and brick-and-mortar.

AutoStore Insight Series | White Paper

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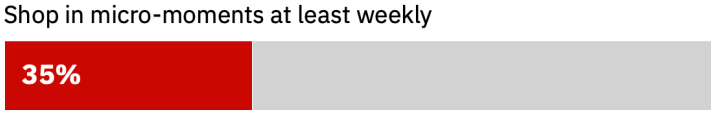
Introduction

Convenience is now the driving force behind every consumer decision, shaping and defining our shopping behaviors. We live in a world where speed of access and availability can win or lose a customer's business, forcing businesses across all sectors to consistently evolve in order to remain competitive.

Over the course of the past two decades, e-commerce in particular has experienced significant growth, driven by the leading brands and platforms. And, through the acceleration of delivery speeds via technological innovation, increased stock availability, and greater choice, customer expectations of the e-commerce experience have grown.

With shopping behaviors constantly changing and customers are always online, ready for that next purchase. Brands must be ready, but flexible, always on. Yet, the fundamentals are still important. So while online shopping is increasing, in-store shopping is still preferred.

What are brands to do? How is it possible to everything to everyone? In this white paper we will look at the rise in e-commerce, what role a brick-and-mortar store still plays in the supply chain, what micro-fulfillment means for e-commerce, benefits leading brands experience with automation and micro-fulfillment, and what the robotics mean for you.



The Rise of e-commerce

Worldwide, online shopping is now one of the most popular activities meaning e-commerce largely dictates the way many retail companies do business.

In 2019, 14% of all retail business worldwide was conducted online – per Statista – which is expected to grow significantly to 22% by 2023.[1]

And global e-retail sales reached $3.5 trillion in 2019. In the US alone in 2020, Digital Commerce 360 estimates e-commerce represented 21.3% of total retail sales, up from 15.8% in 2019 and 14.3% in 2018.[2]

There is also the development of “micro-moments” shopping: shopping whenever and wherever while doing something else. A recent study conducted by IBM and the National Retail Federation polled nearly 19,000 shoppers in 28 countries aged 18-73.

This study showed that 71% of the respondents shop in “micro-moments” with more than 1 in 3 shopping in micro-moments at least weekly and up to several times a day.

Brands are realizing their customers are shopping anywhere, anyway, and anytime they want.

This growing pressure on businesses to provide a smooth e-commerce experience has led to challenges on a distribution level, with existing systems unable to provide the required increase in processing times, or larger storage spaces. Manual operations simply cannot maintain this steady growth, and new systems are being considered as a result.

There is no doubt that the COVID-19 pandemic has also accelerated and complicated the shift towards e-commerce for many businesses, with local, regional, and national lockdowns driving increased digital spending.

Brands know they and their supply chains must change. Markets never look favorably on those who keep the status quo.

Yet there is a flip side to all this. While e-commerce grows, the virus has changed the game behind the scenes as well.

For retailers operating with staff in higher density facilities, the spread is more likely. On-duty staff numbers had to be reduced, at the very moment e-commerce orders were soaring. With fewer bodies and higher demand, the challenge has been significant.

As a result, retailers across major European countries such as Germany, as well as the US, have suffered during the last six months.

TextilWirtschaft reported seven out of 10 retailers in Germany have seen a decline in sales from the last two quarters.[3]For one third of all retailers this decline is by at least 20%, with many experiencing even higher reductions in sales.

Through all this, SHD Logistics reported that 83% of EU consumers reported they plan to continue shopping online post-pandemic.[4]Companies are now finding it more important than ever to keep up with demand and maximize efficiency and productivity.

83%

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The convergence of brick-and-mortar

The shopping experience has already seen a dramatic shift to online and digital touch points in previous years. E-commerce is becoming a single, focused element of the brand offering across the world.

As a result, individual e-commerce facilities are being leveraged on a more macro level, with an increased importance held within the retail sector.

But what the retail sector must maintain is a thriving in-store shopping experience. As a society, there will always be those who still value that personalized shopping experience. Being able to touch products, try things on, and interact with a brand on the shop floor.

And while most consumers prefer online to in-store shopping, enticing customers to travel to a store typically leads to a larger purchase. According to *Forbes*, 71% of shoppers spent $50 or more when they visited a brick-and-mortar store.[5]

The retail sector should consider how the world of e-commerce can begin to merge with brick-and-mortar to provide the ultimate retail shopping experience.

71%
spend $50 or more when shopping in-store

54%
spend $50 or more when shopping online

Impulse shopping in-Store:

89%
of women

78%
of men

Adds additional items to cart online:

77%
of women

67%
of men

Source: Forbes[5]

There are several ways e-commerce and brick-and-mortar stores can converge with some already in play.

01. Buy Online, ___ In Store
The latest trend has become to Buy Online, Pick Up In Store (BOPIS). Some brands also offer Buy Online, Return In Store. In this model, brick-and-mortar stores could become “hubs” for the retail experience, in the form of locations where returns can be taken by customers to be processed, for example, rather than traditional sorting centers.

This will help brands maintain foot traffic to stores, while providing greater convenience to the customer. The quality of the product being returned will improve as well, by removing the uncontrollable journey from customer to seller.

02. Unique In-Store Experience
The retail store is not going anywhere anytime soon, so long as shoppers want an option that is convenient and fast to simplify their life. In most cases, when they do visit a store, they want to get in and get out. Gone are the days of going to the mall to “hang out”.

Here, the store of the future could offer new and unique shopping experiences.

Layouts could consist of more traditional set ups in the form of aisles and racks for clothing, as well as the introduction of new digital experiences.

New technology such as 3D projectors, smart mirrors, or Mixed Reality interfaces allow customers to try clothes, offering a truly unique shopping experience that e-commerce cannot facilitate at this moment.

Referring back to the IBM and NRF survey, respondents overwhelmingly said they want a store with an assortment of stock to fit their lifestyle. Yet, 90% of shoppers are aware of emerging shopping technologies and are eager to try them. “Seventy-one percent of respondents are already using or want to try searching by visual means; close behind are 69 percent who use or want voice search options.”

Gartner Group predicts that those brands adopting new technology earlier will see a 30% increase in e-commerce.

03. In-Store Order Fulfillment

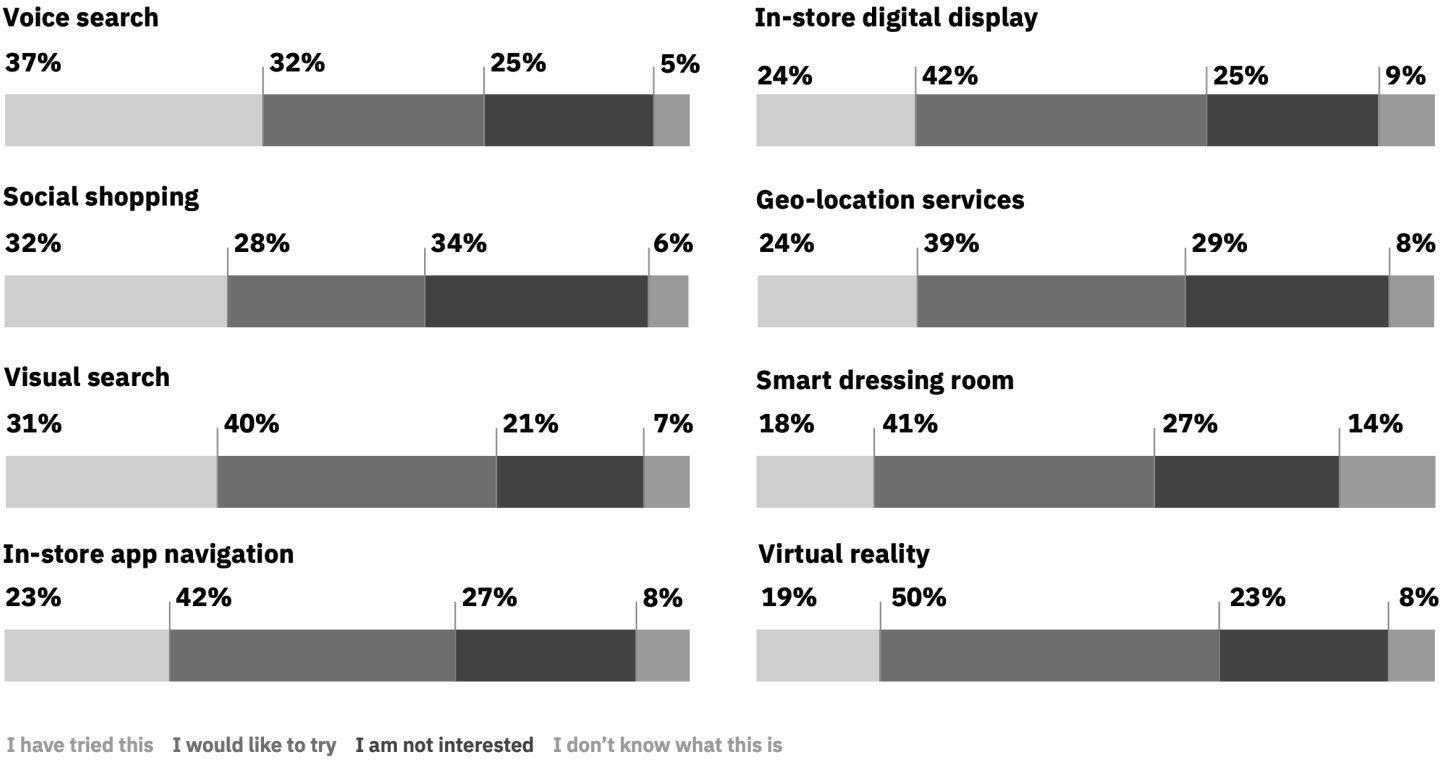
As demand for all kinds of order fulfillment increase, brands are trying various fulfillment methods. In-Store order fulfillment appears to be on the rise. This is where online orders are fulfilled from a physical store, rather than from an entirely separate warehouse.

If the stock is available, then it can be relatively straightforward for a store assistant to package it up and arrange for delivery from the store rather than a warehouse. Brands such as Zara, Old Navy, and LOFT already utilize in-store stock for order fulfillment.

However, this isn’t the most efficient method for two main reasons. One, many times it is not a store closest to the customer fulfilling the order, but rather a store where the item is in stock.

Two, that store may have only one item from the order available. As a result, one order for five items could come to the customer in five separate shipments. This leads to frustration for the customer and an increase expense in shipping costs for the retailer eating into the profit margin.

As a growing trend, it’s unlikely to remain sustainable. Brands must find a way to remove supply chain silos and become present anywhere and everywhere.



Positively, however, these challenges and new experiments have been driving a fresh approach from businesses, regarding how they run day-to-day operations, particularly on how to ensure centers are both safer and more efficient. No longer restricted to large warehouses and distribution centers, many are turning to automation.

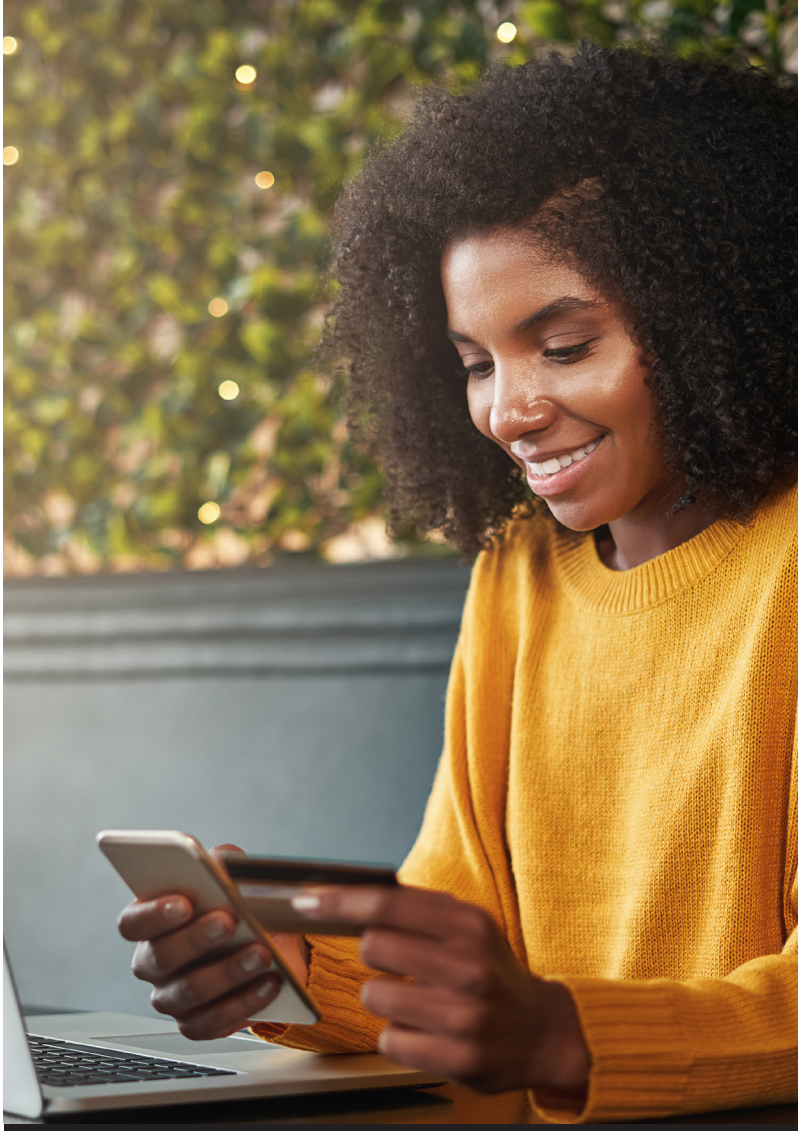
The introduction of robotics means businesses are able to isolate the picking process, with robots delivering products to operators to decrease walk time and exposure among staff.

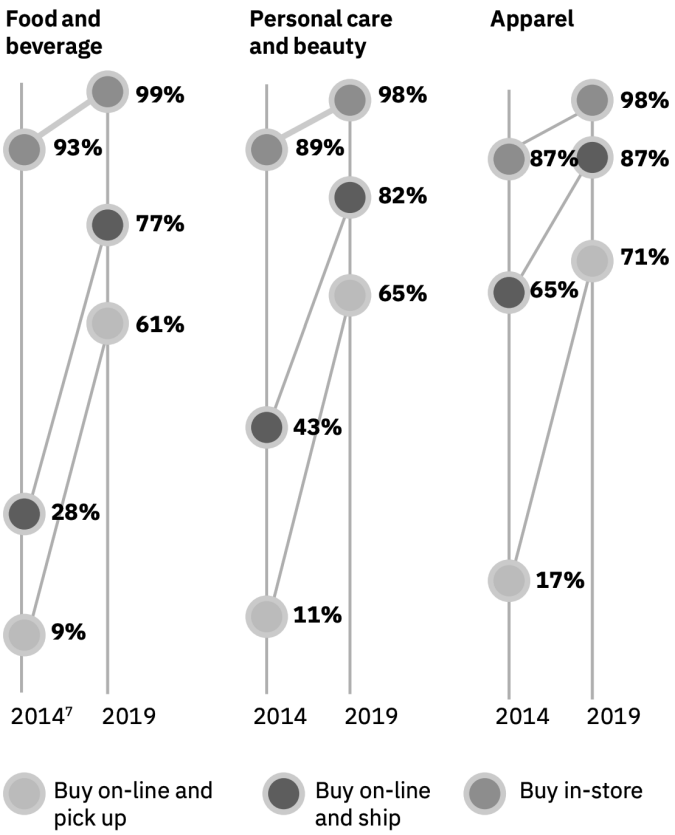
In fact, the implementation of robotics and automation is providing retailers with the extra boost they need to take on some of the giants in the industry.

As we continue to envision and shape the future of e-commerce, it's the introduction of technologies like robotics which will reshape order fulfillment and shopping behaviors.

So, what could that look like? In short, distribution center storage in a fraction of the space.

Utilizing the space in stores or adjacent to, these smaller facilities could house micro-fulfillment centers - robotic systems focused on providing localized storage and warehouse space in store.





A Micro-Fulfillment Center (MFC) is typically a small building or space powered by a robotic solution holding 80% or more of a retailer's SKU count. They are commonly 8,000 to 15,000 square foot in size. The goal is to serve customers faster in a smaller footprint than a traditional store.

By bringing warehouse storage to local shops and retailers, businesses can meet local demand quickly through both in-store collection or delivery. This system gives brands the flexibility they need to meet increased demand with elite automated storage systems supporting operations on site, rather than from afar.

Smaller stores do not equate to smaller experiences. What will be prioritized is the customer journey and what the store can offer that online retail and even the competition cannot.

At a quick glance, automating this process in store in a more logical manner where location and inventory is taken into consideration would not only create efficiencies but also allow for a wider range of available inventory. Due to the greater density that solutions such as cubic systems provide, additional stock can be sold online and at the brick-and-mortar level.

With a robotic system operating this aspect of the store, a business can rely on robotics to sort and pick items ready for dispatch, leaving employees to focus on replenishing store shelves and dealing with customer questions in person.

As well as the general improvement in customer service and experience, this also improves a business' sustainable credentials, reducing last-mile transit times and reducing the need for larger distribution centers.

Depending on the solution, automation provides up to four-times the efficiency and speed of delivery in comparison to a human workforce. With the introduction of robots to the sorting and picking process, businesses are able to substantially reduce delivery times by filling the "walk time" of a human with a robot.

Robots remove the chance of human error, which is so often a cause to delays in delivery times, reasons for returns, and ultimately costs a business its reputation in the eyes of a consumer.

A cubic storage system also means a denser operation. Products can be stocked in "bins", which are stacked one-by-one within warehouses. This creates an aisle-less solution, which saves on space and provides greater storage capacity.

Wasted space is wasted money.

What does micro-fulfillment mean for me

Let's take a closer look at these benefits and answer what micro-fulfillment means for your operations.

Through the need for innovation, micro-fulfillment has been brought to the front. A system focused on providing localized storage and warehouse space on site, micro-fulfillment is an additional option to traditional large-scale warehouses, which can be made more available at local stores, serving both the in-store consumer and the online shopper.

There are several reasons this can be effective.

Source: efulfillment Services Survey[6]

01. Increased Productivity
And while order fulfillment at the store level provides a possible solution to shorten delivery times, manual order fulfillment is time consuming. It is estimated that walking and manually picking accounts for more than 50% of the time spent fulfilling an order.

Robots can complete specific tasks more efficiently and at a more constant rate than humans. This, in turn, increases productivity.

Quoting a survey by Deloitte, SupplyChainDive stated that companies investing in "smart factory" technology "will see a 10% to 12% average increase in metrics including ... labor productivity".[7]

And according to MHI, automated storage and retrieval systems potentially increase your order accuracy to above 99.99%.[8]

02. Faster Order Fulfillment & Delivery Times
The support of order fulfillment from larger warehouses has been effective until recently. The increase in demand for next-day or same-day delivery means regional centers struggle to support supply chains on a smaller, local level given how dispersed the regional centers are geographically.

In a survey from 2017 by eFulfillment Service, 89% of consumers considered 1-2 day delivery fast.[6] Since then, Amazon has introduced One Day Prime and numerous retailers have started offering same-day pickup within hours of placing an order.

As we move into an era of delivery and pickup, there is a need to consider how this demand can be satisfied quickly and efficiently by individual stores.

03. Increase Profit Margins

According to eFulfillment Service, the average cost to fulfill an e-commerce order is 70% of the average order value.[6] This figure covers expenses such as labor from manual picking and shipping, overhead, inefficient order splits, and returns.

These expenses quickly eat at the profit margin. Suddenly e-commerce isn't as profitable as expected and yet, retailers know they must offer online shopping.

Through automation there is greater potential to increase profits in a scalable and efficient manner, by removing "profit eaters" in the form of enhanced labor costs for in-store picking and the added logistical costs that go hand-in-hand with a workforce.

As demand continues to rise, and expectations for fast delivery become the norm among customers, it is vital to maximize every aspect of existing operations where possible. Such a system needs to not only support the physical store but also fulfill local e-commerce demands.

04. Decrease Excessive Costs

According to an article from SupplyChainDive in May 2019, Target stated that their switch to e-commerce fulfillment from their stores is resulting in a reduction in costs of 40%.

And that "'[W]hen we go from an upstream DC to some of our same-day fulfillment offerings, like Order Pickup and Drive Up, we see a 90% reduction in costs,' explains Target CEO Brian Cornell."[9]

Likewise, Wal Mart is beginning to depend heavily on stores closest to the consumer to fulfill digital orders. This is all in an effort to reduce the time and the cost associated with order fulfillment from a distribution center.

Automated micro-fulfillment systems offer the volume of warehouse storage but are small enough to fit in local shops. Retailers can instantly meet local demand quickly through both in-store collection or delivery.

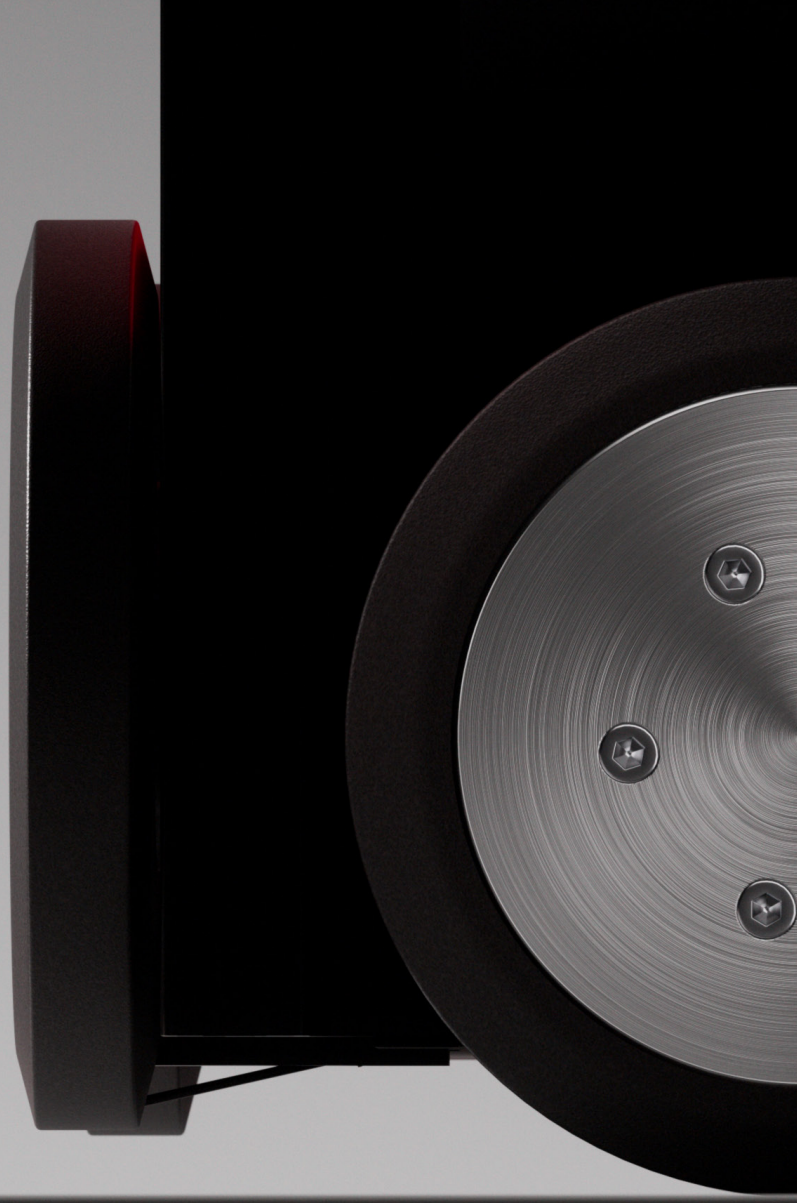
This system gives retailers the flexibility they need to meet increased demand whether it is seasonal shopping or world events. Elite automation supports operations on site, rather than from afar, letting robots do the work of finding and retrieving the stock which reduces labor and order error.

Understanding the robotics

However, it isn't all wine and roses. Selecting an automated storage and order fulfillment system requires research to understand what is right for you.

In our over 20 years of experience, we have found four key areas where automation supports a business on a practical level: density, flexibility, reliability, and visibility.

Combined, these areas support an increase in efficiency, productivity, and healthy profit margins, and a decrease in order error.



01. Density
Having a greater density within the retail space allows companies to store more products in a smaller space. The ability to scale down storage into a cubic structure with clever automation means more orders are fulfilled, larger bins are used, and margins are increased.

As shipping costs continue to rise, retailers need to find ways to cut costs to remain competitive and afloat. Utilizing technology such as a dense automated system at a local level boosts order fulfillment efficiency and speed and creates the opportunity to offer lower cost delivery options such as 1 hour pick up.

02. Flexibility
Business changes quickly. Flexibility is always crucial for any business, but especially with today's global pandemic.

E-commerce is only expected to continue to grow in the months and years ahead, far beyond our expectations of year-over-year expansion pre-pandemic.

What remains uncertain is how large this growth is going to be, and how long until it reaches its apex.

As a result, outside of seasonal trends there are many unknown variables retailers must be primed to respond to - from the size of customer baskets to the assortment of goods customers want to buy.

Flexibility will be crucial to stay ahead of market demands, and robotic technology offers the ability to pivot seamlessly to meet new expectations as they emerge. This could be anything from an increase in orders which demands increased productivity to additional space to accommodate legacy and new stock items added to inventory.

03. Reliability

There is also a significant difference between the effectiveness of mechanical and automated systems, and their reliability.

When orders are coming in, the last thing a retailer needs to worry about is system downtime. Removing the ability to access inventory or fulfill orders is detrimental to business. Access to 100% of your inventory 100% of the time without a reduction in density is imperative to remain competitive. A system that provides as close to 100% system uptime should be a high priority.

The retailer must have the confidence that the system is always available. Anything less just does not make good business sense.

04. Visibility

Finally, the newest area for retailers to consider is visibility. This includes visibility of stock, price, order demand, and shipping expectations.

Consider this. According to eConsultancy, 38% of online shoppers will abandon their cart if it takes longer than a week to receive their order. While that isn't a huge number and a week is forgivable, 69% of those shoppers are less likely to return for future purchases if that arrival date isn't honored.

Visibility also applies to inventory accuracy, which is crucial when it comes gaining customers, fulfilling orders, increasing basket size, and reducing cart abandonment.

It's estimated that inventory accuracy is correct only 63% of the time meaning there is a potential almost 40% of your customers will abandon their cart or not return to your store due to out-of-stock messages. Knowing your stock levels keeps you ahead of demand.

Nothing frustrates a shopper more than to place an order only to receive a message that the item is no longer in stock.

E-commerce will always have the upper hand over brick-and-mortar. But the physical store environment is far from a thing of the past. A balance must be struck, and the businesses that can do this most effectively will be the ones to prosper.

Brick-and-mortar will always be central to the customer experience. It is not about replacing physical retail entirely; it's about creating a combined system that flourishes.

Brands need to expand the role the store has traditionally played. It requires thinking outside the box and a change in the metrics used to measure the store's success.

Brands will also need to rethink operational flows. Historically, e-commerce, retail, and supply chain operate in separate worlds within an organization. With the rise of e-commerce and new shopping behaviors like "micro-moments", brands must integrate these operations in order to meet customer expectations.

Likewise, it will also become imperative for brands to gain better control over inventory availability.

Through the adoption of automation and robotic technology, we are able to bring the two worlds of e-commerce and brick-and-mortar together, literally under one roof, to provide a central point to a brand's operation.

Automation can remove repetitive tasks from staff and, when applied at the store level, can address cross-channel orders at a higher rate of accuracy and productivity.

It's an offering that allows the store to maintain its position as a physical store, but also support with returns, fulfill local e-commerce orders, and improve the overall efficiency of these stores.

It's at the convergence of e-commerce and brick-and-mortar.

About AutoStore

With over 550 installations around the world, AutoStore is trusted by some of the biggest brands. For over 20 years AutoStore has continued to innovate and improve its system for its customers. It delivers the density, flexibility, and dependability you need to excel in this race called eCommerce.

AutoStore, founded in 1996, is a robot technology company that invented and continues to pioneer Cube Storage Automation, the densest storage solution in existence.

Our focus is to marry software and hardware with human abilities to create the future of warehousing. The company is global with installations in 30 countries in a wide range of industries. All sales are distributed, designed, installed, and serviced by a network of qualified system integrators called partners.

Our corporate headquarters is in Nedre Vats, Norway, with offices in the US, UK, Germany, France, Austria, Spain, Japan, South Korea, and Poland.

"Business of the Year": 2019

AutoStore won Business of the Year with Turnover of €150m or higher at the European Business Awards. The Awards are one of the most established business competitions, which recognizes Europe's leading companies each year.

"Reader's Choice Product of the Year": 2019, 2020

Material Handling Product News and MaterialHandling247.com names the AutoStore Black Line (2019) and Micro-fulfillment Solution (2020) as a winner of its Reader's Choice Product of the Year.

"Voted Game Changer at DELIVER": 2019

During the two-day event in Lisbon, AutoStore was presented with the Game Changer award, voted by the leading retail decision-makers attending the conference.

"The Green Supply Chain Award": 2018. 2019, 2020

The Green Supply Chain Award recognizes companies making green or sustainability a core part of their supply chain strategy and are working to achieve measurable sustainability goals within their own operations and supply chains. The awards also recognize providers of supply chain solutions and services assisting their customers in achieving measurable sustainability goals.

"Financial Times & Google's 100 digital pioneers": 2018

AutoStore has been recognized by the Financial Times, Google, and leading European policy makers as one of 100 digital pioneers in Europe.

Resources

1. *https://www.statista.com/statistics/534123/e-commerce-share-of-retail-sales-worldwide/*
2. *https://www.digitalcommerce360.com/article/us-ecommerce-sales/#:~:text=Online's%20share%20of%20total%20retail,2019%20and%2014.3%25%20in%202018.*
3. *https://www.bevh.org/fileadmin/content/05_presse/Studien/Zahl_der_Woche_2020/201030_-_Alle_Jahre_Q1-4.pdf*
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5. *https://www.forbes.com/sites/gregpetro/2019/03/29/consumers-are-spending-more-per-visit-in-store-than-online-what-does-this-man-for-retailers/?sh=5cba81da7543*
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7. *https://www.supplychaindive.com/news/smart-technology-higher-labor-productivity-manufacturing/563511/*
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9. *https://www.supplychaindive.com/news/target-store-fulfillment-cost-reduction/555445/*