

Top Technology Trends Grocery Retailers Need to Adopt in 2023

A GUIDE TO IMPROVING CUSTOMER EXPERIENCE AND EMPLOYEE SATISFACTION

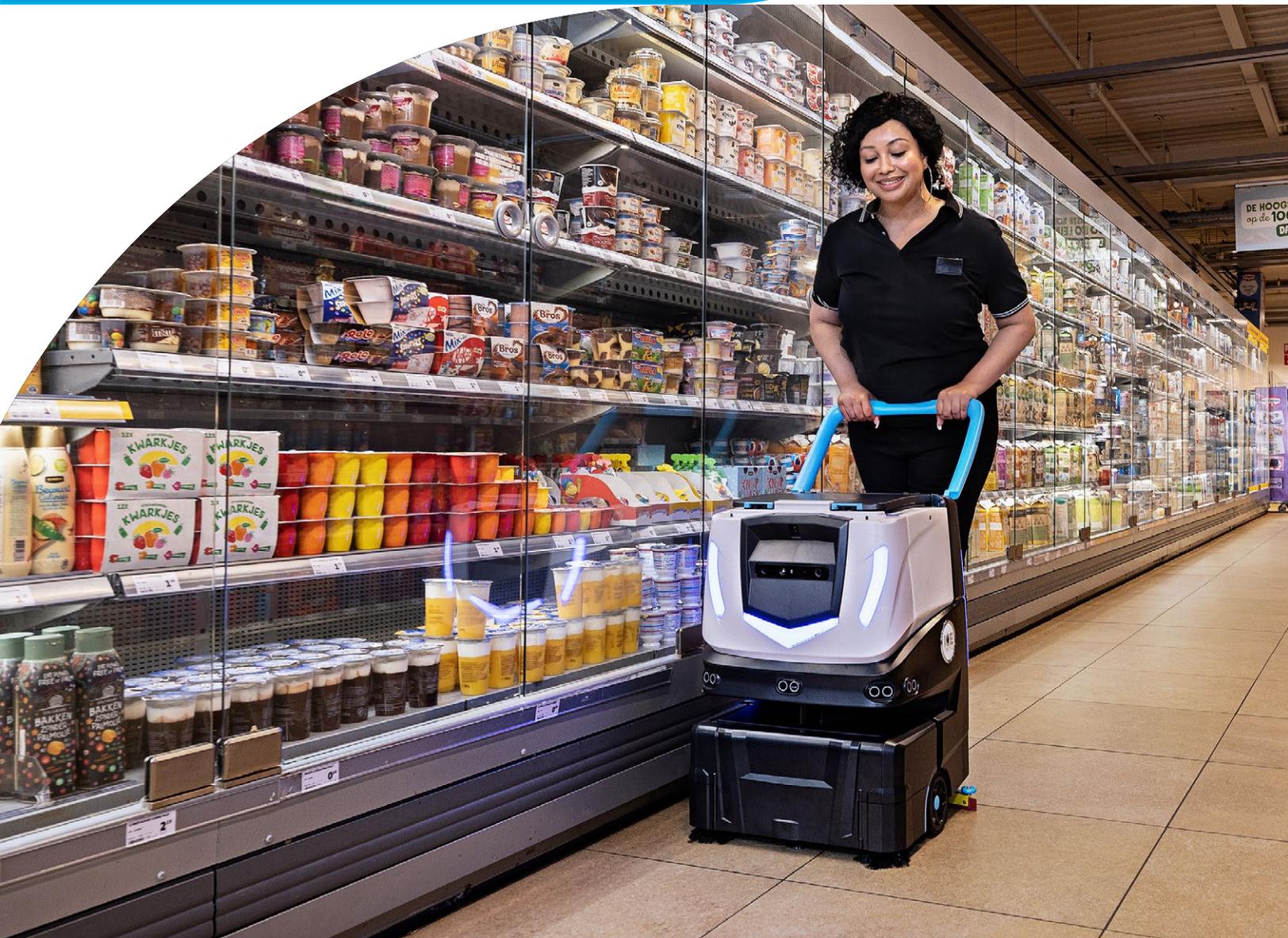


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What is driving change for grocers?

Consumers continue to shop online, expect seamless and more personalized experiences, prioritize sustainability and health, and look for more value adds.

Shoppers are changing. They shop across multiple platforms (hybrid shopping), have increased interest in a better in-store experience, and they want more convenience and personalization, in addition to sustainable and healthier items. As shoppers evolve, grocers must follow suit to keep up.

Why have you chosen to make your grocery purchases online?

(Multiple responses allowed)

Response	Percentage
As part of COVID-19, I didn't want to venture to the store	54.4%
It saves me time	47.3%
I don't have to deal with long lines in the store	43.9%
Convenience; 24x7 shopping	37.0%
As part of COVID-19, many items were out of stock in the store	31.1%
Online search makes shopping simpler	26.5%
I don't buy things I don't need	23.9%
I don't enjoy going to the grocery store	22.1%
I can avoid the parking lot	21.5%
I don't have to shop in bad weather	18.6%
As part of COVID-19, I was unable to get to a store	15.2%
It is easy to replenish items	14.3%
It saves me money	14.0%
Access to online specials and coupons	13.2%
Price transparency	10.6%
I receive the freshest items	4.5%
None of the these	2.5%

Source: Digital Commerce 360 and Bizrate Insights surveyed 1000 online shoppers, May 2020

A. Hybrid Shopping

While a major shift to online shopping can be attributed to the pandemic, the numbers continue to grow.

According to a podcast sponsored by [McKinsey](#) titled “The State of Grocery Retail Around the World,” “The percentage of [e-commerce grocery sales](#) in the US market was slightly under 4 percent; it’s now in the low teens and is expected to reach roughly 25 percent by 2030. The adoption of online grocery is expected to be even higher in parts of Europe.”

The shift to online shopping has provided consumers with multiple ways to shop, leading to what is now being called “hybrid” shopping. Consumers can shop through delivery service apps, store apps, websites, and even some social media platforms.

A McKinsey survey published in late 2020 found that **“companies are three times likelier than they were before the crisis to conduct at least 80 percent of their customer interactions digitally.”**

Beyond that, consumers can choose in-store pickup, curbside pickup, or delivery, adding to the flexibility and convenience of online shopping.

While these options make shopping more convenient for consumers, retailers face challenges when it comes to meeting these demands.

In other research, [McKinsey](#) noted that **“In nine of 13 major countries (surveyed by McKinsey), at least two-thirds of consumers say they have tried new kinds of shopping. And in all 13 [countries], 65 percent or more say they intend to continue to do so.”**



B. Seamless and More Personalized Experiences

As hybrid shopping takes off and consumers grow more comfortable using technology to fulfill orders, it is increasingly clear that expectations about the overall shopping experience are shifting as well.

Whether shopping in-store or online, consumers increasingly want the process to be efficient, seamless, and there is growing demand for more personalized experiences.

[Accenture](#) conducted a poll of 750 consumers and found that “half (49 percent) of consumers believe the best thing retailers can do to improve the shopping experience is to better integrate in-store, online and mobile shopping channels.”

Additionally, “An overwhelming 89 percent of consumers said it is important for retailers to let them shop for products in the way that is most convenient for them, no matter which sales channel they choose.”

This comes with challenges for grocers in terms of adopting technology that can meet personalized requests, such as items that meet dietary or medical restrictions or even prepared food orders, while at the same time making sure the in-store experience meets these expectations as well.

For grocery retailers this means not only integrating the necessary technology but also having a workforce available to fill the roles that come with fulfilling unique orders across multiple platforms. And with labor issues continuing to be an issue, the challenge is compounded.



“According to Salesforce research, 66% of consumers expect companies to understand their unique needs and expectations, and 52% expect all offers to be personalized. This sentiment shows that it’s no longer enough to apply a “one-size-fits-all” approach—companies need to leverage data and behavioral science to determine what the consumer wants and when they want it.”-

—Vala Afshar, [Salesforce](#), Chief Digital Evangelist

C. Shopping Sustainably and for Healthy Options

On top of flexible, seamless, and personalized shopping expectations, research continues to show that consumers are also focused on items that are more sustainable and healthier.

McKinsey researchers note that shoppers are either making healthier or more sustainable choices or voice those concerns as options.

Meaning, that while in some cases the consumer purchases did not directly reflect those choices were made during shopping, the issue was noted by the consumer and is of growing concern. These preferences are likely to continue to drive how consumers make decisions throughout their shopping experiences across the globe.

For grocers, this means supplying options that reflect more sustainable and healthier preferences. This can be challenging because often these options are more costly.



D. Shoppers Looking for Added Value

The challenge with supplying sustainable and healthier options is often related to the cost of the items. And with Inflation at a 40 year high, consumers are quickly becoming more conservative with spending.

This creates a sort of catch-22 for both the grocers and consumers. Grocers want to supply the options consumers want, but it is costly.

Consumers want to make healthier choices, but it costs them more as well.

So, even though emphasis is on buying healthier and more environmentally friendly products, cost consideration is part of the process too.

Stores that can offer more sustainable and healthier options, at appealing prices, will have a leg up on the competition. This could mean special promotions, offering items in bulk, or finding creative ways to alert shoppers to sales on items they want.



Technology designed to help grocers meet expectations and demand

“There’s no going back. The great acceleration in the use of technology, digitization, and new forms of working is going to be sustained”

—Kevin Sneader and Shubham Singhal,
McKinsey

Addressing the above challenges by continuing to adopt advanced technology is key for grocers looking to retain loyal shoppers and keep up with changing customer preferences.

The next set of challenges now come in the form of meeting the changing expectations of today’s consumer.

The only way to get ahead is to become early adopters of the technology itself and for grocers to use the advancements to their benefit.

This list has some of the top ways grocers can use technology to not only help customers but also themselves.

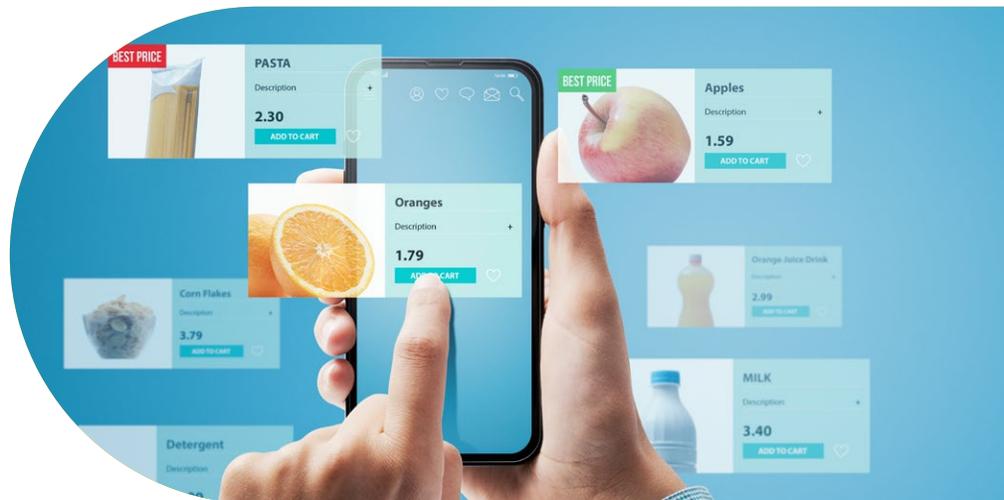
Personalization Devices

Today’s consumer is focused on finding exactly what they need and want quickly and without issue—this includes an increasing focus on personalized options.

According to [CBInsights](#) in a study from 2020, shoppers are going to become “hyper-targeted” meaning they will spend less time perusing aisles and be more focused on getting exactly what they need.

[CBInsights](#) goes on to note that stores will need to be able to give more specialized treatment to shoppers. This will come from apps and chat functions across shopping platforms that cater to and respond to unique preferences.

This will require grocers to bring on additional staff members designated specifically to respond to requests coming through multiple shopping channels.



“Human experts will also play a bigger role in personalizing the online shopping experience by connecting with shoppers through messaging apps and video chats, helping brands connect with and retain their online customers,” reports [CBInsights](#).

There are two key things necessary to step up the personalization game:

- ▶ 1. Adopting technology that allows for more individualized preferences to be selected, saved, and suggested to the consumer.
- ▶ 2. Grocers will need trained and efficient staff to help fulfill or support the requests that come through multiple channels.

This way, when the consumer shops, not only does the technology support their unique requests, but there is a human element involved to ensure the experience is seamless and positive.

Recommendation Engines and AI Nutritionists

The issue of personalization carries into the consumers shifting focus to healthier and more sustainable options.

To help shoppers with a more personalized experience that allows them to focus on sustainability and nutrition, grocers can begin to implement Recommendation Engines and AI Nutritionists.

Essentially, the tools work in the form of an app or platform that collects consumer data such as preferences or dietary restrictions. The information is then used to filter products available in the store that align with the shopper's requirements.

[CBInsights](#) explains grocer recommendation engines as:

“Customers can update their profile with allergens, lifestyle diets, health concerns, and even sustainability causes. The recommendation engine uses this data to filter products that align with customers' preferences and provide more relevant substitutions for out-of-stock products.”



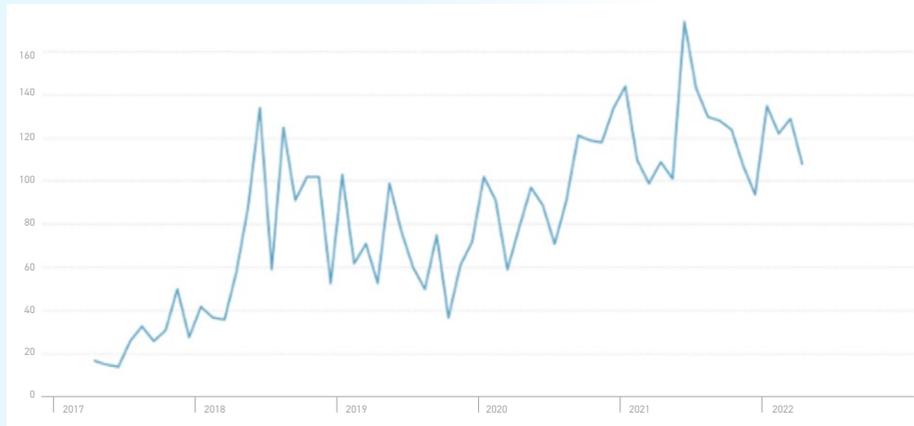
They go on to explain AI Nutritionists as:

“AI nutritionists take food recommendations to the next level by using biometric data — like blood samples — or data from a wellness wearable to assess gut health. Partnerships between AI nutritionist platforms and grocery retailers would help deliver science-backed and hyper-personalized recommendations for customers during their shopping trip.”

By implementing resources that help consumers focus on their preferences, grocers not only provide a solution for more sustainable and healthier options but are also able to provide an added layer of service and experience to the consumer.

Interest in AI-based nutrition continues to grow

News mentions of “AI” and “nutrition.” April 2017 - April 2022
—CBINSIGHTS



Smart Carts

Another emerging tool that addresses personalization as well as convenience is smart carts.

Smart carts are equipped with scales and scanning tools so the customer can weigh any produce right in the cart as well as scan items as they add them to the cart. The scale and scanner keep track of items added or taken out of the cart as a customer shops.

In addition, checkout occurs right at the cart. When the shopping is completed, the items are charged right to the customer's card.

Smart carts are being developed in response to the demand for more seamless checkout, less waiting, and to help avoid being in contact with multiple people. It is a convenience as well as health and safety device.



Smart carts are also an effective way to provide value add for consumers because the technology can be connected directly to a store's inventory platform.

This allows the consumer to add dietary or health preferences, shop their grocery list right off their smart device, and can even steer a customer to sale items that meet their logged personalization or dietary preferences.

Kroger is an early adaptor of smart cart technology. According to [CNet](#), as of 2021, Kroger had partnered with technology company Caper to test run smart carts in their stores.

“The cart is equipped with a large touchscreen at the front, which connects customers to the platform’s shopping list recommendations, promotional offers and even way-finding capabilities,” [CNet](#) reports.

Autonomous Equipment

Autonomous equipment addresses both consumer preferences and grocery retailer struggles.

While consumers increasingly indicate preferences for better experiences across all platforms, in-store experiences prioritize a store that appears clean, healthy, has stocked shelves, and staff on hand to answer questions and provide knowledge.

The struggle for retailers is having enough staff to meet these demands. This is where implementing autonomous solutions can make a significant difference.

SHELF SCANNING ROBOTS

Robots designed for scanning shelves for inventory purposes are a fast and efficient way to offset labor issues while keeping shelves stocked for shoppers.

Sam’s Club recently rolled out the use of inventory scanning robots in its stores across the United States. The inventory robots are being used as a tool to offset labor shortages while ensuring the shelves are stocked.



The system Sam's Club is using is called Inventory Scan. It collects data and alerts managers to "pricing accuracy, stock levels, and whether items are in the right place," according to an article by [Grocery Dive](#).

The article goes to quote Vice President of in club product management for Sam's Club, Todd Garner. He says, "This intelligence allows us to proactively manage our clubs in an efficient manner." Garner goes on to say, "Inventory Scan assures items are available and easy to locate in the club, freeing up time for our associates to focus on members and the shopping experience they deserve."

FLOOR CLEANING ROBOTS

While the panic over wiping down all surfaces may have subsided, a clean store has long been on the list of reasons why shoppers remain loyal to a store. Consumers start to review the visible evidence of clean as soon as they walk in a store.

[Consumer Reports](#) surveyed shoppers at over 96 retailers. Customers rated the stores they would return to repeatedly based on five main criteria; cleanliness was listed as one of the top five reasons.

By deploying floor cleaning robots like [Cobi 18, an autonomous floor scrubber](#), grocers can elevate the perceived image of cleanliness in their store. Cobi 18 is highly efficient and runs autonomously once routes are created and saved. This makes it easy for anyone to use and it can be set on a timer to run after store hours. Plus, the side brushes are designed to clean "close the edge", helping to lessen double work for staff.



According to Agilencen inc. "Historically, cleanliness in supermarkets, warehouse clubs, and other grocery stores meant bright lighting, shiny floors, gleaming glass counters, and organized displays. In a post COVID-19 world however, these won't be enough and grocers who fail to meet customer expectations for cleanliness and safety will lose loyalty and sales as a result."

—Pedro Ramos, [Agilenceinc.](#)

The highly advanced AI even allows the cobot to move through bright light, around glass, including moving glass (cooler doors), and around mirrors.

Beyond taking care of the cleaning and stocking shelves, deploying cobotic (collaborative robot) solutions like Cobi 18 allows grocers to shift the focus of their staff members to delivering exceptional service—whether fulfilling online shopping requests or supplying service in store.

For grocers, labor issues are augmented, and staff are supported in their daily tasks. An added benefit is that staff members learn new skills by working with automation, in addition to redirecting their focus to higher level tasks that require human dexterity and knowledge.

Contactless Payment Technology

According to [Progressive Grocer](#) “Two-thirds (65%) of surveyed consumers would prefer to use contactless payments as much as, or even more than, they are currently, and only 16% say they would revert to their old methods of payments, post-pandemic.”

This message remains true. Consumers still prefer the check out process to be as easy and efficient as possible and with limited person-to-person contact.

Amazon Go is one example of contactless payment coming to fruition and how this technology is changing the process of grocery shopping.

Amazon launched the technology early in 2020 and the trend is gaining popularity across retailers.

Amazon Go essentially works through an extensive assortment of cameras and artificial intelligence, and according to [Geekwire](#), who had a peek at the first Amazon Go store in Seattle, reporters entered the store by “scanning a smartphone app and strolling the aisles of the completely stocked store.”

The technology works through “banks of cameras and sensors overhead [that] track everything put into a shopping cart, with the help of artificial intelligence — rendering unnecessary the old-fashioned ritual of scanning and paying at a checkout stand. Items are charged to a shopper’s Amazon account shortly after they walk through the exit,” according to [Geekwire](#).

While this technology requires updating infrastructure and extensive planning for most current standing brick-and-mortar grocery stores, it is one way to elevate the experience and draw curious shoppers into the store.

This is especially important to consider due to the increase in mobile shopping options. As [NCR](#) points out, **“As consumers demand contactless ways to shop and pay, the use of mobile commerce is increasing. A PYMNTS.com survey indicates that the share of consumers shopping via mobile increased 7.7 percent overall in early March [2020].”**

And while grocers are working to meet those mobile shopping demands, getting customers back in the store is one of the ultimate goals.



Point of Sale Cleaning Technology

Another way to address the overall customer experience and to assure shoppers the store they enter is clean and safe is by implementing point of sale (POS) cleaning technology at the checkout.

This can be a challenging task due to the time it can take to train staff how to properly sanitize and disinfect. This can be doubly challenging if the store is short-staffed.

Technology currently on the market that can help get this task done uses UVC lights to help eliminate bacteria between each use.



According to [ENS](#), a manufacturer of UV-Clean solutions technology, ***“UV-Clean technology produces a UVC non-visible light that inactivates bacteria and viruses at the cellular level, preventing them from multiplying and causing infection. The ultimate result is 99.9% eradication of all bacteria, viruses and molds.”***

The technology comes in different models to fit onto a multitude of POS systems and according to ENS can be easily attached.

Order Fulfillment Robots

Behind the scenes, operations for grocery retailers are one place where robotics technology is key to creating a seamless omni channel experience and increasing efficiency and productivity for staff.

According to [Kindred](#), a robotics company, two of the main challenges facing retailers are:

- ▶ 1. Shortage of people where fulfillment centers are located, and low unemployment numbers are making it hard to find people to do the work of order fulfillment
- ▶ 2. Customer demand—customers want more and expect faster delivery—adding pressure to supply chains and causing grocers to need 24/7 operations

These combined issues have opened the doors for robotic solutions in fulfillment centers.

Kindred has their own robotic solution called SORT, an AI vision platform that separates products based on SKU and then sorts items into individual customer orders. The AI system is a robotics arm that has human-like gripping abilities, allowing it to pick up items and place them with the right order.

The robotics solution works alongside staff to help fulfillment processes happen more quickly. The fulfillment personnel work to check orders and ensure the customer gets exactly what they ordered.

The technology allows retailers to keep up with consumers orders and to create a seamless omnichannel experience from behind the scenes. While this technology is currently used in fulfillment centers, as more stores, including grocers, figure out ways to fulfill online orders and keep congestion in the store down, robotics solutions like SORT will continue to play a roll.

In another example, Amazon has already deployed Autonomous Mobile Robots (AMR's) to help quickly move goods throughout their large warehouses (some of which are up to 1 million square feet).

According to [Robotics Business Review](#) *“As orders are received, robots move goods from shelves to bins, and then from bins into boxes (the size of which is suggested by AI). Inventory is then transported to stationary workers at various staging points in the warehouse. Workers then place items into the boxes.”* From there, the AMR can move the order to delivery trucks.

In this instance, workers oversee more detailed work like checking orders for accuracy, while the AMR's move products and orders throughout the large distribution center. This helps to reduce time and increase efficiency of order fulfillment.

Grocery store distribution centers will focus on using these types of strategies in their own distribution centers to keep customers loyal. As online orders can be fulfilled at a warehouse versus in the store, two key benefits arise:

- 1. There are less people in the store fulfilling orders, meaning, for shoppers that want to shop instore, there is less person-to-person contact.
- 2. For customers shopping online, orders are fulfilled accurately and the items they want are more readily available.



“Autonomous service and delivery robots are poised to better serve – and possibly save – retailers. Some industry analysts have predicted that robotics in retail will be involved in more than three-quarters of logistics operations, with McKinsey estimating that autonomous vehicles will make up 85% of deliveries by 2025.”

–Ed O'Brien, [Robotics Business Review](#)

Automated Microfulfillment Centers

As noted above, more retailers are setting up microfulfillment centers to house goods and fill online orders without adding to the congestion in the retail store and to address the growing popularity of hybrid shopping.

According to [CBInsights](#), microfulfillment centers are small fulfillment centers sometimes located within a grocery store or at an offsite location.

“Many of these microfulfillment options use robotics and AI to automate picking orders and preparing them for delivery. Currently, MFCs are most efficient with consumer packaged goods – which tend to be relatively uniformly shaped and durable, making them easier for robots to handle.”

According to [NBC](#) Safeway is one of a few grocery store chains testing MFC's or micro-fulfillment centers—designed to help reduce the congestion in aisles caused by shoppers trying to fulfill online orders. Instead, the MFC is there to fulfill the order and keep some of the customization that customers want when shopping at specific stores—as every order is checked by a human before it goes out.

In fact, Safeway has had success using micro-fulfillment centers to **“fill orders five times faster with a mix of robots and employees,”** notes NCR.

Addressing the needs and demands of today's shopper requires the support of advanced technology. Grocers who wish to stay relevant and win the loyalty of customers will do well to implement solutions that help support staff, augment labor, and address consumer preferences. While these changes will take time and planning, as we saw between 2019-2021, the speed and focus with which grocery retail can change is rapid, showing the dedication of grocery retailers to succeed.

ICE Cobotics is a leading cleaning equipment and technology solutions provider specializing in subscription services and autonomous equipment. Cobi 18 is a compact scrubber built for spaces like grocery stores. Contact one of our automation experts today to learn more about [Cobi 18](#) and how you can start implementing autonomous solutions in your store.



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