



Top Technology Trends Every Grocer Should Adopt in 2021



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The Changing Grocery Retail Landscape

Adapting to IoT

Prior to 2020, grocery retailers were already facing change and beginning to adapt to a world that is largely run through IoT—the Internet of Things—meaning, the software platforms and programs that run through cloud-based computing technology and servers that tie our lives together through our phones, computers, tablets, TV's, and even our grocery store checkout lanes.

IoT has impacted all we do because of the capabilities of interconnectivity in all things technological. It is reshaping how we move through our every day and according to Harvard Business Review “When combined with the advanced capabilities of AI and machine learning, IoT is helping to propel the promise of the Fourth Industrial Revolution to change how we live, work, conduct business, and purchase the goods and services we want and need.”

While the motivation to shop online in 2020 was largely driven by the pandemic, it has slowed a little as people have adapted and adjusted to living life under these circumstances. But overall, the shifts are permanent, and this has forced grocery retailers to make immediate changes so as not to be left behind.

Online Shopping is Not Going Away

Online shopping is not going away and as McKinsey points out “...the shift to online retail is real, and much of it will stick. In the United States, the penetration of e-commerce was forecast in 2019 to reach 24% by 2024; by July 2020, it had hit 33% of total retail sales. To put it another way, the first half of 2020 saw an increase in e-commerce equivalent to that of the previous ten years.” Because of these shifts, grocery retailers will need to fully embrace and adapt to new technologies to make their stores safer, healthier, and cleaner for their guests.



What is Driving Change?

Cleanliness, Safety, and Health

While shopping online is a key driver in many of the changes happening in the retail landscape, customers do still want to eventually get back into stores. But it is a matter of health, safety, and ease for most and meeting these demands and expectations will take innovation and increased attention to cleanliness standards, plus, detailed inventory and fulfillment processes. Technology is key in addressing these concerns and will be necessary to gain back consumers and renew their confidence.

As the pandemic caused panic and wielded widespread shortages of necessary items, loyalty towards brands and stores dropped and shoppers instead started going to where they could find essential items. According to McKinsey: “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% or more say they intend to continue to do so.”

“A Deloitte report published in June found that 62% of in-store customers wanted a to see surfaces cleaned after each transaction at the checkout. 59% were reassured seeing ‘extra cleaning precautions and preventions’ when visiting a business.”

–Retail Wire

In addition, because consumers are worried about contracting COVID-19 while shopping in stores, the drive to find stores that offer BOPIS (Buy Online Pick-up In-Store), curbside, or delivery services grew and caused many shoppers to experiment outside of their usual patterns.

Additionally, shoppers have become increasingly concerned about health and cleanliness and this drove many to find stores that were taking precautions and adjusting daily processes and strategies to ones that demonstrated concern for the health and safety of patrons.

In research conducted by NCR (a grocery store checkout technology company): “13% of consumers switched [to] brands with better hygiene protocols and “72% of people have worn gloves or wiped down a public surface.” This concern extended beyond just offering sanitizing wipes and hand sanitizers. Consumers looked for stores that were visibly demonstrating increased cleaning of carts and baskets as well as implementing social distancing signage and markers.

These changes go beyond just entering the store—consumers want beginning-to-end experiences that exemplify ease of access, increased cleanliness standards, and the safest options possible when entering a grocery store. Research also done by NCR found that “70% of consumers worldwide are using contactless payment, and 82% say contactless is the cleaner way to transact.”

Consumer Confidence

Consumer confidence will play a big role in determining how different industries bounce back. In recent research: "The Next Normal Arrives: Trends That Will Shape 2021 Report" McKinsey researchers note: "The point is that spending will only recover as fast as the rate at which people feel confident about becoming mobile again..."

Gaining consumer confidence will come from clean environments where safety precautions are evident and ongoing, as well as meeting consumer demand for essential items.

If consumers cannot find what they need at a certain store, they will go elsewhere. Grocery retailers will need to determine what their customers buy the most and keep those items fully stocked. This will take detailed inventory management.

At the same time, while online shopping has increased and customers become more comfortable utilizing technology for safety and health reasons, it has also become evident that consumers want contactless payment options or an easy and safe way to check out quickly.

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% overall in early March [2020]."



Technology Trends to Help Drive Positive Change

The Use of Technology is Here to Stay

According to McKinsey: "There's no going back. The great acceleration in the use of technology, digitization, and new forms of working is going to be sustained. Many executives reported that they moved 20 to 25 times faster than they thought possible on things like building supply-chain redundancies, improving data security, and increasing the use of advanced technologies in operations." While this is across industries, it is plain to see grocery retailers are no different.

IoT technology has already made it possible for ordering online, grocery shopping through an app, having groceries paid for and delivered from the comfort of home, not to mention self-check outs and the recent inclusion of contactless payment methods—and much of this was enabled at warp speed once grocery retailers were able to open again after the first wave of shutdowns.

Beyond that, technologies currently in use in some parts of the country, such as robots that scan aisles and count inventory, will most likely become common across grocery store chains as a way for retailers to keep up with demand and meet customer expectations.

In terms of store cleanliness, innovative floor cleaning machines and improved sanitization and disinfection technologies are at the forefront of impacting how grocery retailers move forward.

Health & Safety Trends

Cleaning for health and safety will be an essential focus for grocery retailers. Creating an atmosphere that promotes a positive perception of clean as well as promotes health and safety are key issues that drive consumer confidence and help garner loyalty.

According to Retail Wire: "Retailers do have to consider the mindset of shoppers, many of whom...are continuing to try to disinfect their way to safety, including going so far as to wipe down food and packages from grocery stores."

This goes beyond the work that the consumer is willing to do and starts at the visible evidence that consumers start to review as soon as they walk in the door. Consumer Reports surveyed consumers on over 96 retailers. Customers rated the stores they would return based on five main criteria with cleanliness factoring as one of the main reasons for their choice. Meeting these cleanliness standards is essential to keeping a loyal customer.

Three ways to meet health and safety demands are through: Intelligent and autonomous cleaning equipment, point of sale cleaning technology, and contactless payment technology.

Intelligent & Autonomous Floor Cleaning Equipment

Flooring can be one of the biggest “clean” indicators for consumers who are scanning the environment to determine the level of attention being paid to cleanliness. On top of that, flooring is one of the largest contaminated surfaces due to dust, dirt, and particles brought in with guests that eventually settles on flooring. Consistent routine cleaning of flooring is essential to creating a space that is safe and healthy for shoppers.

Autonomous floor cleaning equipment is another way to positively impact the perception of clean and to demonstrate to shoppers that cleaning is a top priority. Autonomous floor scrubbers, like EMMA, distributed by ICE Robotics, are manually taught routes one time, and then deployed to clean those routes on their own each time thereafter.

While the autonomous scrubber works to clean debris from flooring, other high priority tasks can be completed by staff, such as sanitizing and disinfecting high touch point areas, including checkout lanes, baskets, carts, and other doors on freezers and coolers—helping to eliminate potentially harmful bacteria and germs.

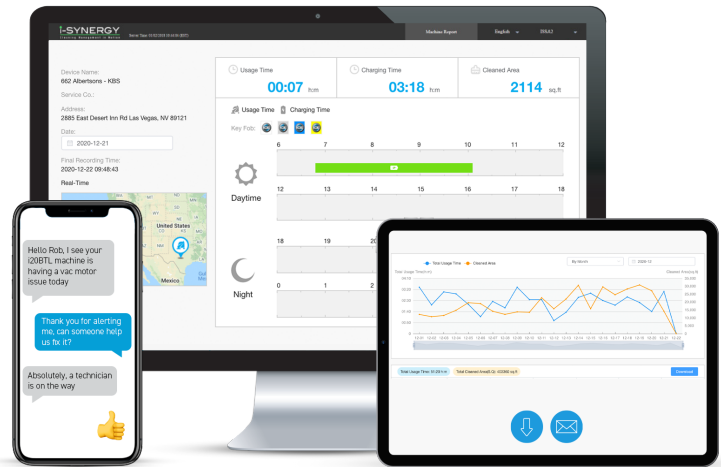
On top of that, guests will delight in seeing an autonomous cleaning machine working while they are shopping, and this will enhance the perception of cleaning for health and safety of guests.



Fleet Management & Data Insights

Intelligent floor cleaning equipment, like the scrubbers and sweepers offered by ICE Robotics, are available through a subscription model. This service allows ICE technicians to remotely monitor machine usage metrics through the i-Synergy fleet management software portal, also available to end users.

Fleet management services work through cloud-based platforms and track data in easy-to-read reports. The benefits are many:



- First, managers can have reports emailed directly to them, making it easier for them to monitor routine cleaning and to identify processes that may need improvement—thus increasing efficiency and productivity.
- Second, these reports also allow managers to speak to a confirmed clean and this information can be used to help put nervous shoppers at ease.
- Third, fleet monitoring systems allow ICE technicians to help monitor the equipment (only available as a service through their all-inclusive subscription) and in many cases this prevents machines from sitting unplugged (not charging for the next shift) when not in use. Technicians can work to identify any maintenance or service issues, helping to avoid downtime.

“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.”

–Agilence Inc

Point of Sale Technologies

Technology can be useful in other areas as well. Checkout lanes are high touch point areas where clients use POS (point of sale) systems to pay for groceries. The CDC recommends cleaning POS systems between each use. This can be a challenging task due to the time it can take to properly train staff on sanitizing and disinfecting, let alone having enough staff on hand to keep up with the amount of traffic in check-out lanes.

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 and basically works on a timing system between each use.

Contactless Payment

Contactless payment options have quickly become one of the most wide-spread ways to pay for items. A consumer's account is linked in the app on their phone and anytime a person goes to pay for an item the barcode or CQR code on their phone is scanned, and payment is deducted without any exchange of money or cards.

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."

The path of least resistance is clear—make it as easy as possible to pay for goods without any physical exchange.

Amazon Go is an even more futuristic look at how this technology is changing the shape of grocery shopping. Amazon launched the technology in early 2020 and the trend will likely catch on across retailers.

Amazon Go essentially works through an extensive assortment of cameras and artificial intelligence, and according to Geekwire, who got a peak in 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 banks of cameras and sensors overhead 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."

While this will take updating of 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 in.

In-Store Experience

Presenting an immaculate store is one of the top ways to invite customers to return again and again and can create a loyal customer following. Beyond that, is the customer experience related to the ease and accessibility of essential items.

Shelf-Scanning Robots Free-Up Staff to Focus on High Priority Work

Making sure shelves are stocked with essential items is necessary to meeting demand and increasing expectations. Robots designed for scanning shelves for inventory purposes are a fast and efficient way to meet these demands. Walmart recently deployed inventory scanning robots in 50 of its U.S. stores and according to The Verge, they are using the robots to “to check things like inventory, prices, and misplaced items.”

The shelf-scanning bots, created by Bossa Nova Robotics, out of California, are deployed on a route by a co-worker. The bots can scan inventory and collect data that is used by management to evaluate and improve inventory issues. Inventory can be managed more accurately and quickly, helping operations managers to ensure they have what guests want.

“The COVID-19 crisis has created an imperative for companies to reconfigure their operations—and an opportunity to transform them. To the extent that they do so, greater productivity will follow.”

–McKinsey

Technology to Personalize the Customer Experience

Adding autonomous features to take on repetitive and mundane tasks also frees up employees to focus on the customer experience. Increasingly, consumers want to find what they need quickly and having enough people in a store to be able to give this specialized advice is important to the overall experience.

According to CBC insights in a study done in 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.

CBC Insights notes that stores will need to be able to give a more specialized treatment to shoppers. “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.”

This means that social media platforms and highly functional websites and online shopping platforms will need to be staffed by store employees, so they are more able to support consumers in finding what they need.

Plus “Once economic conditions begin to improve and brick-and-mortar retailers can resume operations, expect those in the strongest positions to actively focus on personalizing the in-store experience while maximizing revenue with touchless solutions such as facial recognition.”

Store Operations

Omnichannel

Stores will need to support customers through efficient and easy omnichannel operations. As the market continues to shift, more consumers will buy online and the platforms through which they do this will be based on ease of use and access to the goods they need and want.

According to NCR, “Delivering the same experience across your in-store, online and mobile channels so your customers’ transactions are efficient, easy, convenient and, most important, uninterrupted, is what your customers will expect.”

Digital Commerce 360 points out in recent research that “According to data from Acosta Insights, 31% of U.S. shoppers—including 50% of millennials—reported being very or extremely likely to continue using online grocery pickup or delivery once the pandemic is over.”

Retailers will need to continue to expand the use of technology solutions that help streamline this process in order to keep shoppers using their platform and shopping their store.

Why have you chosen to make your grocery purchases online?

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%
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%
Access to online specials and coupons	13.2%
Price transparency	10.6%
I receive the freshest items	4.5%
None of the above	2.5%

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

Order Fulfillment Innovations

Global POS (point of sale) software provider, NCR notes in recent research “...some grocery retailers are looking to retail innovations to fill online orders as fast as possible. Safeway, for example, is using micro-fulfillment centers to fill orders five times faster with a mix of robots and employees.”

And 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. Having an MFC onsite allows a retailer to keep the sales inhouse, keep unique requests that shoppers like, and fulfil orders faster and more efficiently.

Beyond that, grocers should consider making customers aware of any and all online shopping platforms available, streamline those platforms to work in favor of customers i.e., making them easy to navigate and intuitive to a customer's patterns and habits, and payment options will need to be secure and easy.

Meeting Demand/Staffing Warehouses

Behind the scenes operations for grocery retailers is one place where robotics and technological solutions are key for grocers to keep up with demand and increase efficiency and productivity. According to Kindred, a robotics company, there are two main challenges facing retailers:

1. Shortage of people where fulfillment centers are located and low unemployment are making it hard to find people to do the work of order fulfillment.
2. Customer demand: Customers want more goods and faster delivery.

These combined issues put pressure on retailers to keep up with increased demand and are creating spaces for new technologies to be implemented.



Robotic Fulfillment Technology

Kindred has their own robotic solution called SORT, an AI vision platform that separates product based on its SKU and then sorts into individual customer orders. The robotics solution works alongside staff to help fulfillment processes to happen more quickly.

The fulfillment personnel work to check orders and ensure the customer gets exactly what they asked for. In this example, a grocery retailer can meet the demands of their clients, increase productivity and gain loyalty because of the ability to fulfil customized requests.

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 1million square feet).

According to Robotics Business Review, "As orders are received, robots move goods from shelving 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 is able to move the order to delivery trucks.

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

Grocery store distribution centers will focus on using these types of strategies in their own distribution centers as way 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."

–Robotics Business Review

IoT: The Way of the Future

Embracing technologic and IoT advancement trends are the way of the future when paired with plans and practices that will elevate the customer experience. While technology can help us all do things more quickly and efficiently, the need to provide specialized recommendations, directions, and order fulfillment needs are only increasing.

Customers are becoming more demanding and having the staff in place to meet those demands means consistent training in how consumer behaviors are changing and where staff must step in to deliver seamless service.

Technology can help them do the job better by increasing efficiency and productivity, as well as by helping grocery retailers collect the necessary data to keep their stores relevant through these rapidly changing times.



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