

# DIGITIZING UNATTENDED **Retail Payments**

REPORT



FEATURE STORY – PAGE 9

## Crane Payment Innovations On The Challenges Of Contactless Payments Ubiquity

APRIL 2021

NEWS AND TRENDS – PAGE 13  
Marriott offering contactless self-check-in at select hotels

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How businesses are tapping unattended retail solutions to cater to consumers' demands for digitally focused physical shopping experiences



# DIGITIZING UNATTENDED **Retail Payments** REPORT



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## What's Inside

A look at recent unattended retail solutions and developments as well as how businesses are turning to these offerings to satisfy consumers

## Feature Story

An interview with Douglas Haddon, vice president of global connectivity strategy and project management for automated payment and retail merchandising solutions provider Crane Payment Innovations, on how the pandemic has made contactless payment solutions a must-have for merchants and the challenges still standing in the way of greater consumer uptake

## News & Trends

Notable headlines from the space, including how 49 percent of U.S. consumers say they use self-checkout kiosks almost all of the time and why 50 percent of millennials are open to switching to brands that offer their preferred digital innovations

## Deep Dive

A comprehensive analysis of self-service technologies' rise during the pandemic and how they have helped consumers safely shop and conduct business

## About

Information on PYMNTS.com and American Express

## Acknowledgment

The Digitizing Unattended Retail Payments Report is done in collaboration with American Express, and PYMNTS is grateful for the company's support and insight. [PYMNTS.com](#) retains full editorial control over the following findings, methodology and data analysis.

# **WHAT'S INSIDE**

Unattended retail solutions have the potential to ease consumers' lives by offering frictionless real-time experiences, and merchants around the world are beginning to recognize the value they provide. The industry is [poised](#) to grow at a compound annual growth rate (CAGR) of 6.7 percent through 2027, with the pandemic driving some of this expansion as more consumers seek safe, touchless ways to transact via kiosks, self-service stations, self-service checkouts or cashierless stores.

Safety is not the only benefit unattended retail solutions afford consumers. A February 2020 PYMNTS [report](#) found that 49 percent of respondents use these offerings to check out faster while 33 percent said these solutions allow them to shop leisurely without interacting with staff. Business owners who tap into these solutions can benefit from their appeal among consumers as one [study](#) found that unattended retail offerings can enable firms to boost their sales by 2 percent for every 15 percent increase in customer satisfaction. A PYMNTS' report also found that almost 40 percent of consumers who value unattended shopping would be willing to pay more to experience it again, suggesting that these technologies will grow more prevalent — and

more profitable for businesses — as more customers test them out.

These developments illustrate the importance of turning to unattended retail solutions to significantly improve customers' experiences. Doing so will ultimately allow businesses to digitize their operations and keep pace with consumers' changing retail preferences, both during the pandemic and long after it has ended.

## AROUND THE WORLD OF SELF-SERVICE TECHNOLOGY

The refrigerated vending machine market is anticipated to experience a slump over the next couple of years, but there does appear to be one bright spot in the industry: smart vending machines. Recent research [predicts](#) that sales of internet-connected vending machines will grow, driven by the increasing popularity of self-service. Merchants can also benefit from technologies incorporated into these self-service vending solutions, like sensors that can enable them to troubleshoot issues in real time and determine whether key products need to be replenished.

Self-checkout solutions could address a few hurdles to achieve even greater ubiquity. One February [report](#) found that more than half of consumers believe self-checkout is faster



than queuing, but roughly 25 percent said they would likely avoid such options if they had previous experiences in which the machines malfunctioned — an issue experienced by most respondents. Sixty-five percent were also worried about the hygiene risks the technology posed, but most still preferred self-checkouts over cashiers. Almost 50 percent of respondents reported using self-checkouts almost all the time.

The pandemic is continuing to have dramatic effects on individuals' shopping habits, with one [survey](#) finding that North American consumers are growing particularly fond of digitally enhanced in-person experiences. It found that 45 percent of respondents sought out these physical/digital or "phygital" technologies and services, with 50 percent of

millennials willing to switch to new brands that offered such options. The trend is also expected to continue after the pandemic subsides as consumers continue to shift toward digital channels in the banking, travel, health-care and insurance sectors.

For more on these stories and other recent unattended retail headlines, read the Report's News and Trends section (p. 13).

### **CPI ON THE CHALLENGES OF IMPLEMENTING SELF-SERVE OPTIONS**

The pandemic has spurred demand for contactless payments as consumers seek greater safety and convenience, with some sectors more prepared for this shift than others. There are a few obstacles merchants must overcome beyond investing in new technologies,

however, such as market fragmentation and a lack of education among consumers about the presence of contactless. In this month's Feature Story (p. 9), Douglas Haddon, vice president of global connectivity strategy and project management for automated payment and retail merchandising solutions provider [Crane Payment Innovations](#) (CPI), details the remaining challenges to meeting consumers' expectations with the contactless methods they crave.

### **DEEP DIVE: HOW USING UNATTENDED RETAIL SOLUTIONS CAN HELP BUSINESSES MEET CONSUMERS' NEWFOUND DIGITAL TASTES**

Unattended retail technology has expanded steadily over the past decade, but the pandemic is boosting these solutions to new heights as consumers demand efficiency, convenience, speed and safety. These offerings are not without their faults, however, and consumers' concerns often focus on whether the technology is sanitary enough as well as whether malfunctions will occur during its use. Merchants can take measures to boost support for these solutions, including incorporating antimicrobial technology, providing cashierless experiences and enabling touchless options. This month's Deep Dive (p. 19) examines the appeal of self-service technologies in the retail, quick-service restaurant, banking, travel and healthcare sectors as well as the hurdles businesses must address to encourage greater usage.

## Industry **INSIGHT**

**What has meeting consumers' need for contactless and digital-first payment options meant for players in the unattended retail sector? How important has it become for business establishments to offer innovative unattended retail experiences to remain competitive?**

"The recent COVID-19 pandemic has helped overcome behavioral and awareness barriers to contactless adoption and brought new opportunities for innovation to the unattended retail sector as it adapts to meet consumer demands. Contactless [technology use] was slowly growing over the years, however use has rapidly intensified as consumers have sought cleaner payment options and less contact during transactions. It has become critical for unattended retail businesses to adapt their offerings to provide cleaner, frictionless, enjoyable experiences where consumers can safely and confidently make purchases using the payment method with which they're most comfortable. Meeting this demand has enabled businesses to continue operating in a challenging environment and provided a path for future growth through technology innovation and operational efficiency. Businesses that offer a wider array of purchasing technologies and experiences as well as payment options stand to be more competitive by providing more opportunities for consumers to complete the purchase journey."

#### **ALLISON KEANE**

Director of U.S. partner acquisition  
[American Express](#)

# 20%

Share of consumers who used unattended retail kiosks in 2020

## FIVE FAST FACTS

# 56%

Portion of retail shoppers who say that avoiding contagion was their main reason for shifting to digital shopping

### CASHIERLESS APPROACH

More large retailers are looking to cashierless stores like Amazon Go and crafting unattended retail solutions.

### CHECK-IN INNOVATION

Marriott recently announced that some of its hotels would feature contactless check-in solutions to enable fast, safe customer transactions.

### SERVING UP SLICES

Two Senate Tavern restaurants in Canada are serving pizza via automated vending machines.



# **FEATURE**

## STORY



## Crane Payment Innovations On The Challenges Of Contactless Payments Ubiquity

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The pandemic has truly tested a variety of markets on how prepared they were for a contactless future. Some were unready and slow to pivot while others were supercharged by the changes in daily consumer behavior and pandemic-induced societal shifts.

Malvern, Pennsylvania-based [Crane Payment Innovations](#), an automated payment solutions provider, was fully prepared for consumers' increased preference for contactless payments as they sought ways to decrease interactions with other humans and high-touch

surfaces. CPI is a global manufacturer of intelligent payment, cash processing and retail automation technologies serving unattended and semi-attended markets, including vending, financial services, retail, transportation, banking and gaming. The company serves over 100 countries and has one of the largest installed bases of payment and retail automation systems in the world.

Douglas Haddon, vice president of global connectivity strategy and project management for CPI, spoke to PYMNTS in a recent interview

about how the pandemic helped usher contactless payment solutions into the open and made them a must-have for merchants.

"We've seen an accelerated migration to contactless and digital payments because the pandemic has resulted in consumers seeking out touchless buying experiences ... and that's accelerating contactless card issuance," he said. "Merchants realize now more than ever that they need contactless technologies, so the rest of the retail space is catching up with the technology and user experience designs that we have been deploying in the unattended retail space for years."

### THE PANDEMIC'S IMPACT

The pandemic affected CPI's unattended and semi-attended markets differently than traditional retail spaces. Retail has exploded with consumer demand for self-service, doorstep delivery and other cashierless technologies. Haddon also recognized how the increased demand for self-service has crossed over into the brick-and-mortar sector even more.

"Think about how there's self-service with the ability to order something ahead of time via mobile app. Or you can go into a locker and pick up something or someone delivers it to your car," he said. "We've seen the offerings available in vending machines rapidly change from soda and snacks to more consumer packaged goods — and in the case of the pandemic, even PPE. ... I've spoken to a number of companies that are more brick-and-mortar

and that are making vending or self-service an offering in order to extend the convenience to the customer."

The pandemic has spurred a contactless future for both product delivery and payment. Merchants will therefore have to consider how they will safely get products into consumers' hands and how not offering these methods could affect how likely consumers are to shop with them. Investments in contactless infrastructure will come at the pressure of consumers as their needs and preferences change. Haddon gave college campuses as an example of how the transition is sparing no segment.

"It used to be physical cards. You had your student ID and that got you into your dorm, the gym, helped you buy items from the bookstore, it got you your lunch and your dinner. All those [transactions] are moving [to] mobile payments. We're seeing that across college campuses, so ... to get onto the college campus as an operator, you have to support ... mobile campus cards."

This same consumer pressure drives trending innovations, such as QR codes and broader acceptance of payment types. All the same, the U.S. has a ways to go in building up the infrastructure to compete with other countries' contactless usage, with less than four in 10 U.S. consumers owning a contactless card or app compared to 90 percent of Chinese consumers.

## KEY CHALLENGES

Growth to even higher contactless payment usage in the U.S. is buffeted by two main challenges: the absence of educational initiatives targeted at consumers and market fragmentation.

"There's a whole consumer base that has contactless cards in their wallets and with no idea what the contactless symbol means nor any idea how to use it," Haddon said.

Merchants must also make contactless payments more accessible to drive uptake.

"A lot of times, I walk into different merchant establishments [and] I don't know what they accept. They could have contactless and then they tell me, 'Ah, we don't take Apple Pay,'" he said. "Some of the biggest challenges are to the consumers who want to be able to pay with what's in their pockets ... let it be a phone, let it be a card and know that it's accepted."

Haddon also found that the lack of ubiquitous loyalty programs has fragmented the contactless space.

"We have such a disjointed market that there is not one application that I can go to any vending machine and use," he said. "Usually, it's limited within an operator. So, if the vending operator [that] services a specific location has a thousand machines, and you have a loyalty app that he offers, you can only use it in those thousand machines. There's nothing ubiquitous in the vending space that allows the broader consumer base to use a single app

to handle product selection, product payment and loyalty."

That said, Haddon noted that recent CPI research found a more than 50 percent increase in contactless transactions, with one in five transactions occurring on vending machines, indicating a definite shift to contactless. There is plenty room for growth, however.

"Once the infrastructure's built, once the people have the cards, once everybody's educated, contactless will definitely become the preferred payment," he said.

## MEETING EXPECTATIONS

Self-service technologies and vending machines disrupt the payments space by eliminating friction from transactions. The pandemic has helped popularize these tools' appeal, and consumers' adjustments to their payment behaviors over the last year will likely persist — even after the global health crisis has eased.

"We're starting to see more and more things become vendable or ... available via self-service," Haddon said. "I think there's even behavioral changes that are becoming the standard expectations of consumers. And in the grand scheme of things, that's an attractive deal for the merchants."

If merchants can keep pace with contactless innovations and further education about their benefits, consumers are sure to engage with them as they continue to seek speed, safety and convenience.



# **NEWS & TRENDS**

## Unattended retail trends

### SMART VENDING MACHINES SET UP FOR GROWTH

Smart vending machines are [poised](#) to grow as demand for touchless options, such as for internet of things-enabled refrigerated vending machines, surge. Convenient credit card readers and mobile payments can be used for purchases, and consumers are tending to carry less cash. Companies can optimize sales thanks to the insights from the machines' data, and operators can leverage machines' sensors to monitor equipment performance,

ultimately cutting costs by eliminating unnecessary inspections.

A study projects the global growth of refrigerated vending machines to be lukewarm through 2024, with expectations of less than 1 percent each year, but internet-connected smart vending machines are a bright spot for the space, partly helped by pandemic-related recovery and consumer demand for modernized unattended retail. Researchers recommend replacing older machines with new ones rather than retrofitting old machines for improved returns.



## 65 PERCENT OF US CONSUMERS WORRY ABOUT CLEANLINESS OF SELF-SERVICE SCREENS

Consumers today want to get in and out of retail locations quickly and with as little human interaction as possible. A recent [report](#) found self-service checkout use has increased by 36 percent yet would be even more popular if consumers thought it to be cleaner and more reliable. More than half of the 1,000 surveyed U.S. consumers said they found self-checkout service faster than queuing in lines, but one-quarter of respondents said they would likely avoid it if machines malfunctioned — a friction most respondents experienced. Sixty-five percent of respondents worried about such technologies' hygienic risks, but most preferred self-checkouts instead of human cashiers. Nearly 49 percent of respondents said they use self-checkouts almost all the time. More big-box retailers are using cashierless stores like Amazon Go as a blueprint for self-service technology, valuing self-checkout options for their cost savings and efficiency.

## CONSUMERS HAVE HIGH EXPECTATIONS FOR MORE DIGITAL EXPERIENCES IN PERSON, SURVEY FINDS

The pandemic has driven many consumers to seek out digital shopping options over the last year, especially digitally enhanced in-person experiences, according to a recent

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# 65%

of US consumers worry about the cleanliness of self-service screens.

[survey](#) of more than 1,500 consumers in North America. Respondents valued brands that not only offered online experiences but also phygital experiences, placing high expectations on brands to deliver. Forty-five percent of respondents wanted brands to improve their digitally enhanced technologies and services, with 50 percent of millennials switching to new brands that offered the digital innovations they want.

Self-service innovations were also at the top of consumers' wish lists as well. Fifty-one percent

want the availability of self-service kiosks, while 58 percent said contactless technology is part of their daily routines outside the house. The concern with the cleanliness of self-service touch screens was apparent in this survey as well, with 36 percent saying self-service touchscreens at public places make them anxious. This is perhaps why 66 percent said they want brands to offer tap-and-go payment options, which would help them avoid having to touch potentially germy screens. Unattended retail vendors that can offer truly contactless features are therefore more likely to fare well with consumers.

## Self-service developments

### HOW CUSTOMER SATISFACTION WITH SELF-SERVICE CAN GIVE RETAILERS A COMPETITIVE EDGE

Self-service technologies can go a long way in giving consumers the control that they want, driving sales and allowing retailers to gain a competitive edge in a crowded field. Self-service solutions are no longer considered unique and have become more ubiquitous, but these technologies can also generate frictions, including long lines to use the technology and the hassle of bagging one's own items.

Smoothing out these frictions and satisfying customers is where retailers have the opportunity to pull ahead. A recent consumer [survey](#) reported that a retailer's sales per square foot

could increase by 2 percent for every 15 percent increase in customer satisfaction with self-service. Retailers that blend a functional and customized self-checkout experience with in-store assistance will go far in the post-pandemic future as in-person shopping is not going away anytime soon.

### MARRIOTT PILOTS CONTACTLESS CHECK-IN KIOSKS, GRAB-AND-GO MARKETPLACES

Major hotel chain Marriott International recently [introduced](#) contactless kiosks to speed the check-in process and eliminate the need for risky in-person interactions at several hotels. Guests can opt to use the machines to check in for reservations, grab their hotel keys and check themselves out. All check-in transactions are performed through the kiosk's UV-powered antimicrobial technology, which helps kill bacteria on the touchscreen. The pilot kiosks are located at several Marriott locations, including two Marriott hotels in New York City, and one in Louisiana. Another will be arriving soon at a Miami location. The hotel chain has also announced proof-of-concept contactless grab-and-go marketplace machines, which are being tested at two Fairfield Inn by Marriott locations in Maryland and allow guests to purchase snacks and beverages. Payment for these items is available through a contactless Bluetooth connection. These recent innovative efforts were taken in response to



increased consumer demand for safe contactless options during the pandemic.

## Touchless technologies

### AUTOMATED PIZZA KIOSKS SERVE UP CURBSIDE PIES IN CANADA

Two Senate Tavern eateries in Ottawa, Canada, are [serving](#) up instant pizza from two curbside automated vending machines. Three cooks prepare the pizza ingredients from the restaurant's kitchens, loading the machines with as many as 70 pizzas at a time. Pizzas cost between \$9 and \$13 each, and uncooked pizzas can be purchased for a dollar less by those who may want to cook them at home. Boxed

pizzas are dispensed to consumers in just three minutes. General manager Grant Marley expects the machines to become more popular as word continues to spread.

The restaurant purchased the \$160,000 automated pizza kiosks from Brampton, Ontario-based PizzaForno, which currently operates 42 pizza vending machines across Canada. PizzaForno was able to triple its business during the pandemic as more consumers sought no- to low-touch food technology, according to its co-founder and president Les Tomlin.

## INPOST LEVERAGES QR CODES FOR LABEL-FREE ONLINE RETAIL RETURNS SERVICE

The increased number of consumers turning to online shopping means more items are being returned through the mail as well, which can be a friction-filled hassle for many. One [survey](#) found that 86 percent of shoppers indicated experiencing poor return experiences will make them not want to shop with that particular online retailer again, meaning that smoother returns will foster customer loyalty.

U.K.-based parcel locker provider InPost is one such company looking to make returns easier and faster. Eighty-three percent of online customers believe retailers should make returns processes easier, according to the company. InPost recently launched a returns solution to address this issue that allows consumers to scan a QR code on their smartphones at a secure parcel locker. Consumers who use the service no longer have to deal with printing return labels, boosting convenience by saving paper and preventing visits to the post office. U.K.-based Missguided is the first online fashion retailer to use this sustainable technology, offering the InPost option at checkout.

## VOICE AI HELPS TO MEET CUSTOMER SERVICE SHORTCOMINGS

Voice-enabled artificial intelligence (AI) is [giving](#) retailers' customer service a boost, offering immediate customized phone assistance on customers' questions involving store hours and locations, order updates, returns processing, account balances and product details. These digital assistants are available 24/7 year-round and help increase efficiencies and reduce costs by freeing up staff to perform more complex work while also converting callers into more satisfied customers. Fifty-one percent of consumers think businesses [should](#) be available to them around the clock and 76 percent expect to receive "consistent interactions" from retail customer service.

Voice AI can act as a first line of defense to help meet customers' high expectations more productively. The technology can also provide human agents with a summary of what the call has been about before it reaches them, providing real-time insights.



# DEEP DIVE

# How Self-Service Retail Has Advanced And Helped Consumers Amid The Pandemic

The unattended retail space has come a long way from the [holy water-dispensing](#) vending machine of 215 B.C. to Bitcoin kiosks, the [fastest-growing](#) market in the United States. Self-service checkouts have a shorter history, with the first “service robot” [created](#) decades ago. Vending stations, kiosks and self-service machines are all part of the unattended retail industry, which can be broadly defined as sales that take place without human interaction on the retail side, according to Paul Stadler, senior vice president at USA Technologies, who recently [spoke](#) with PYMNTS. Along the way, operators have leveraged the technology to dispense everything from [sweaters](#) to [automobiles](#) to [worms](#).

The possibilities for unattended retail continue to [expand](#) in today’s era of social distancing and pandemic-driven demand for contactless options as businesses accelerate their digital transformations. Recent research projects the contactless payment market to grow to more than \$100 billion by 2025, up from its current market value of an estimated \$40 billion. It is easy to understand why unattended retail has become so popular in commerce and with

customers as it provides improved efficiencies, cost savings, speed and convenience. Kiosks and self-checkout solutions help minimize human interactions and are therefore [considered](#) safer during the pandemic, though questions of how sanitary public touchscreens are have come into play. In this month’s Deep Dive, PYMNTS examines how self-service retail has grown more advanced in recent years and how these unattended technologies are helping consumers conduct business during the global health crisis.

## THE UNATTENDED RETAIL SAFETY QUESTION

Consumers’ expectations for faster, easier and frictionless shopping experiences and payments are higher than ever as they seek out more control as well as instant gratification — a phenomenon influenced by Amazon’s delivery speeds. Merchants like leveraging self-service technology because it helps reduce errors, save labor costs, serve more customers and increase profitability.

Chief executive Carla Balakgie of the National Automatic Merchandising Association [said](#)



that self-service, when touchless, is “considered safe” because vending machines offer pre-packaged products that can sometimes be accessed through mobile apps or ordering features. This has accelerated the adoption of such machines as merchants work to provide solutions that comfort consumers. Some concerns center on how well these services can truly reduce risk, however. Consider that any self-checkout trip means interacting with a kiosk or self-service machine and touching the same surface that hundreds of other customers have touched if staff members are not consistent with sanitization. The Centers for Disease Control and Prevention (CDC) [reports](#) that the risk of exposure to the COVID-19 virus in this manner is low, but it is not zero.

A recent [report](#) found that more consumers would use self-checkout if they considered it more sanitary. Stores recognizing that dilemma introduced UV-powered antibacterial or antimicrobial technology to help reduce nearly 100

percent of germs on these high-touch surfaces. This fear of contagion is still the most common reason consumers give for turning to online shopping, according to a PYMNTS [report](#).

A wide variety of options exist for purchasing without fear of touching screens, however. Voice-enabled systems as well as cameras for facial recognition offer an [alternative](#), and they are already being used in airports and healthcare. They could easily lend themselves to a retail setting. Amazon’s “Just Walk Out” technology at its Go stores also [offers](#) a way to shop unattended with as little contact as possible, using weight sensors, overhead cameras and deep learning technology to detect when items have been removed from shelves and are automatically added to a virtual cart on customers’ smartphones. Methods such as these not only make shopping experiences more hygienic but also keep foot traffic moving and decrease time spent waiting in kiosk lines.

## CONTINUED UPTAKE

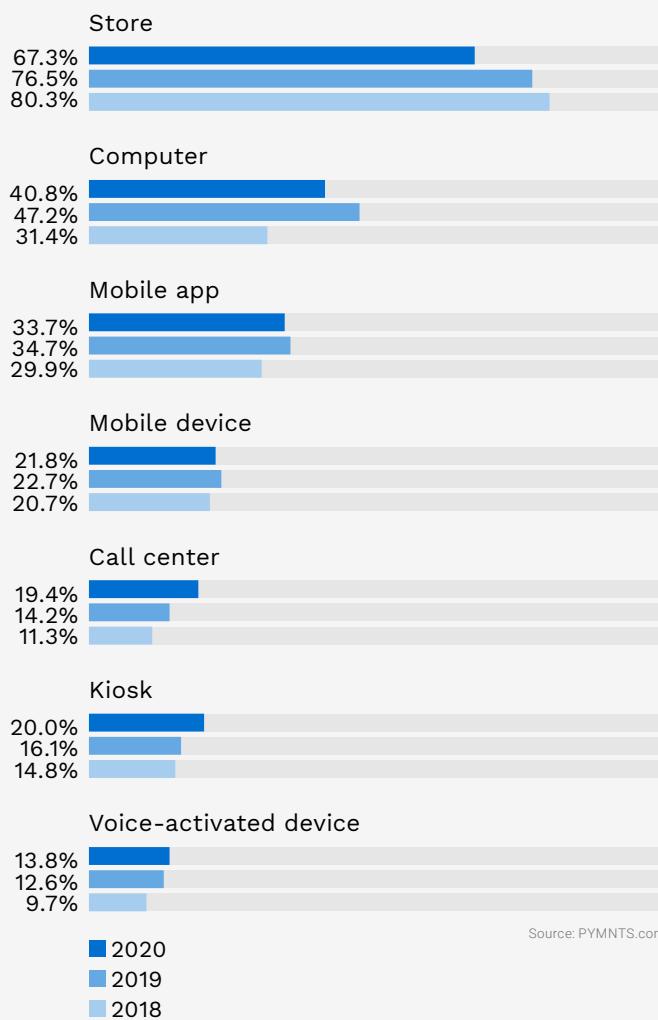
The global unattended retail market is [predicted](#) to grow to a value of \$46 billion by 2027 at a CAGR of nearly 7 percent between 2020 and 2027. Consumer demand for self-service is driving businesses in a variety of industries to invest in unattended machines and automated devices, especially considering the saturation of mobile devices, connected systems and digital platforms. Smartphones are more often being used as a tool for delivering safer in-store shopping experiences. PYMNTS' [research](#) shows that consumers have more consistently used mobile apps, voice-enabled devices and kiosks to make purchases within the last several years.

Consumers were already using unattended retail more and paying through their mobile phones, and the pandemic has only accelerated that migration. These consumer trends and advancements in technology, powered both by health concerns and an increasing desire for efficiency and seamlessness, are sure to continue into 2021 and beyond.

**FIGURE 1:**

## WHERE CONSUMERS SHOPPED IN 2020

Share of consumers making purchases who used select purchasing channels while performing their daily routines, by year



# ABOUT

## PYMNTS.com

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