



Building a Network Technology Foundation for Retail Innovation

TO SUCCEED IN TODAY'S HYPERCOMPETITIVE ENVIRONMENT, retailers must provide fast, efficient service and an outstanding digital experience, extending the convenience and personalization of online shopping to their brick-and-mortar stores.

"Consumers expect the in-store digital experience to emulate some of the features they access online," says David Naumann, retail marketing strategy lead for Verizon. "They expect to find products quickly and have easy access to merchandise details and availability. And many also desire faster, more convenient checkouts and immersive digital experiences."

Fortunately, today's network technology offers a simple, fast solution. With a fixed wireless access (FWA) network, retailers can easily deploy and scale new applications when and where they choose, embracing the digital future affordably and at their own pace.

Current store technology can be a barrier to improving the retail environment

Current store technology, like plain old telephone (POT) lines and DSL, can make it difficult for retailers to provide the seamless omnichannel digital experience consumers expect. Although nearly 85% of transactions occur in physical stores, 71% involve digital touchpoints, according to a study by Incisiv.

11% OF SURVEYED RETAILERS
THINK THEY **MEET THE DIGITAL
EXPECTATIONS** OF THEIR GEN Z
STORE ASSOCIATES. — INCISIV STUDY

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CONSUMERS **EXPECT TO FIND PRODUCTS QUICKLY** AND HAVE EASY ACCESS TO MERCHANDISE DETAILS AND AVAILABILITY. AND MANY ALSO DESIRE **FASTER, MORE CONVENIENT CHECKOUTS AND IMMERSIVE DIGITAL EXPERIENCES.**

—DAVID NAUMANN, RETAIL MARKETING STRATEGY LEAD, VERIZON

Shoppers expect these digital touchpoints to continue as they browse store merchandise, but just 39% of retailers are satisfied with their in-store digital experience, according to the Incisiv study.

Some store technology often isn't working well for staff either. Store associates, especially the younger generations, expect digital tools to make their job easier and more efficient. However, only 11% of surveyed retailers think they meet the digital expectations of their Gen Z store associates, the Incisiv study found.

Numerous innovative applications have been developed to address these problems. These solutions can automate time-consuming tasks for associates, helping to increase productivity and operational efficiency. They can improve the shopping experience for customers, shortening wait times and providing unique and personalized digital services. Many of these applications will require robust network connectivity.

Digital solutions help overcome labor challenges

In addition to rising customer expectations, retailers face a severe shortage of workers, making it tough to keep up with demand. In a recent [Deloitte survey](#), 71% of the participating retailers said the labor shortage is their No. 1 challenge.

Retailers are increasingly turning to automation to help improve productivity and relieve staff from tedious tasks, giving them more time to spend with customers. Although only a third of associate assignments are automated today, stores expect to increase that number to 57% by 2026, the Incisiv study found.

One of the more compelling automation technologies uses radio frequency (RFID) and internet of things (IoT) sensors. Attaching RFID tags to articles such as clothing or electronics enables retailers to automatically track inventory across the supply chain. In addition to saving associates countless hours of inventory-taking, automated tracking can quickly reveal

inventory levels across the enterprise for smarter fulfillment options for online orders and consumer visibility into inventory available in their local store.

RFID tags can also be used to help reduce theft. Tags are removed when items are paid for at the cash register. If an item that has not had the tag removed passes by a detector near the exit, an alarm is sounded, alerting store staff.

Inventory tracking can be supplemented with an artificial intelligence (AI)-based ordering system that automatically replenishes goods when inventory levels drop to predetermined thresholds to help reduce out-of-stocks.

An alternative method of tracking inventory is deploying robots to roam store aisles and scan shelves for product availability. Robots can be leveraged to track goods such as fresh produce, which is unsuitable for RFID tags, and inexpensive items, which may not be a cost-effective use case for them. In addition, robots can free store associates from chores such as mopping floors and moving inventory in the back rooms.

Another popular labor-saving technology is electronic shelf labels. Printing new price labels and attaching them to shelves is a cumbersome, labor-intensive task. With digital labels, managers can make changes remotely with the click of a mouse, saving time, reducing errors, and integrating price information with the store's point of sale (POS) and enterprise resource planning (ERP) system.

Digital signage, connected to a retail media network, can be configured in many different shapes and sizes, enabling retailers to display promotions at the front of the store, on endcaps, or at the precise point of customer decision-making.

"You can display a buy-one, get-one-free special on products along the length of the shelf where they're located, which can help increase sales," Naumann says.

In addition to helping increase sales, digital promotions can add a revenue source from product manufacturers who pay retailers to display their ads.

Instead of relying on associates to pass along their observations about customer trends, retailers can use technology to obtain quantitative data. Many stores already have video monitoring systems. By integrating video content with AI applications, such as “heat maps” that track how customers flow through the building, retailers can improve store design and optimize product placement.

Digital solutions improve the customer experience

Digital technology doesn't just save time for store associates — it helps make the shopping experience more productive for customers, a benefit they greatly appreciate. Other, more advanced solutions can also dazzle customers with immersive experiences they won't soon forget.

Cashierless checkouts, which use sensors, computer vision cameras, and AI to detect what shoppers pick up, can be a great time-saver. Customers can simply pick up the items they want and then leave. As customers leave the store, the goods they purchased are charged to their credit card or bank account they have on file. The technology works well at grocery and convenience stores and is catching on quickly at sports venues, where a trip to buy a soft drink or a hot dog can be expedited to help fans miss less of the action they came to see.

“Cashierless checkouts offer a lot of compelling benefits,” Naumann says. “They can drastically reduce transaction time, double throughput, and lower staffing costs. Customers are happier, and retailers can operate with less staff.”

Scan-and-go apps offer a similar solution. Customers scan items as they place them into a shopping cart, using either a mobile app or a cart-attached scanner. They then pass through a sensed gateway before leaving the store, and the system charges their account, sending an electronic receipt.

Large retail venues, such as home improvement stores, can provide mobile way-finding solutions in customer mobile apps, helping shoppers select the most efficient path to their desired items instead of trying to track down an employee. Store merchandise pickers can also use such apps to locate goods for online orders and in-store customer pickups. Analyzing customer traffic data from the apps can help store managers optimize product displays, promotions, and store layouts.

Retailers can enrich the customer experience by deploying augmented reality (AR) and virtual reality (VR) applications, which allows customers to visualize products in new, more personalized ways. For example, AR fitting rooms use computer vision mirrors to overlay clothing onto real-time video footage of customers, helping them to select the right size and color without multiple trips to store racks.

Furniture shoppers can use a VR app to simulate the decor and dimensions of their home, viewing and rearranging realistic depictions of chairs, sofas, and other items in the store's inventory.

Customers can also use store apps to gain deeper information about products or read reviews. And retailers can use the app to send customers personalized offers and discounts.



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Transitioning to the digital future with fixed wireless access

Innovative digital capabilities represent the future for retail stores, but they require a reliable and responsive network to operate. But a cabled internet system is not the only alternative retailers have for providing in-store connectivity to the rapidly growing number of digital applications.

“FWA can provide the internet connectivity required to support digital applications and devices in retail store environments. Reliable FWA connectivity can lead to increased worker productivity and lower operational costs,” says Greg Wagner, a product marketing manager at Verizon.

An FWA system is easy to deploy, offers greater flexibility, and can be an improvement over outdated wireline internet technologies in several ways:

- ✓ **SIMPLE.** FWA uses radio waves to transfer information through a cellular network. Unlike a wired broadband system, it does not require the installation of cables to provide service and is essentially a “plug-and-play” setup.
- ✓ **ECONOMICAL.** FWA is less costly to install than wired broadband and can be up and running in hours or days, compared to weeks or months.
- ✓ **FAST.** FWA gives retailers fast, consistent, and secure access to internal systems and customer-facing applications.
- ✓ **SCALABLE.** It is flexible and easy to scale, enabling retailers to ramp up quickly in periods of peak demand, expand to additional stores, or add and remove service to or from pop-up locations.

- ✓ **SECURE.** FWA enhances cybersecurity protections. Wireless devices can send and receive data without traversing the public internet. Unauthorized internet traffic and unauthenticated devices can be prevented from accessing the network with password control.

- ✓ **AGILE.** FWA can serve as a gateway to transformative 5G capabilities. It can be deployed with 4G LTE or 5G connectivity. Retailers using 4G LTE can easily upgrade to 5G when it becomes available.

FWA also enables large standalone locations, such as office supply stores, to provide connectivity to third-party retail partners, such as electronics purveyors, that can set up their own shop within a larger store. The partners can quickly establish their own FWA access points, obtaining seamless connectivity and data privacy without draining store resources or interfering with each other’s networks.

Adding connection points often means broadening the cyberthreat landscape, but that’s not the case with FWA. By enabling devices to send and receive data without traversing the public internet, it greatly enhances cybersecurity protections. Retailers can set their own rules and parameters to block unauthorized traffic and unauthenticated devices.

Building a strong technology framework

To attract and retain tomorrow’s associates and customers, retailers need to take advantage of a growing array of advanced digital capabilities. Fixed wireless access solutions enables retailers to deploy existing applications with reliability and flexibility and quickly upgrade to more advanced technologies.

To learn more about **how fixed wireless access can help your retail business**, visit <https://www.verizon.com/business/products/internet/lte/>.

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