

Reimagine the retail experience with edge computing.

Solution brief



The shopping patterns and expectations of retail customers are constantly changing. Today's consumers expect personalized and convenient experiences. Consequently, the most successful retailers are transforming their offerings to serve customers no matter how they shop by creating a seamless experience that blends the benefits of digital and physical shopping – all while improving efficiencies in back-end operations like inventory management and loss prevention.

This transformation should involve the adoption of edge computing, and more specifically, mobile edge computing (MEC), which brings processing and analytics closer to connected devices and users.

Why is edge computing important for retailers?

Retail customers want frictionless shopping experiences, less time spent waiting in lines and greater pickup, return and payment flexibility. While trying to meet these customer expectations and others, retailers also want to find ways to continually increase revenue. Moving compute and storage functions to the edge of the network with edge computing allows retailers to begin deploying smart retail applications that can address many of these challenges.

In addition, by taking advantage of edge computing services, retailers can benefit from improvements in end-device mobility, flexibility and power efficiencies. This is made possible since MEC helps enable the deployment of smaller form-factor end devices that have lower onboard compute and storage capabilities.

MEC paves the way for retailers to take advantage of smart applications that can help create personalized and immersive customer experiences.

By combining 5G connectivity with edge computing, applications can now take advantage of increased bandwidth and enhanced mobility. Using Verizon's MEC solution, Verizon 5G Edge, reduces the distance data has to travel, speeding up end-to-end processing time and preserving bandwidth.

5G Edge also makes it possible for retailers to optimize bandwidth-hungry applications such as augmented reality (AR) and virtual reality (VR). The increased data and new capabilities can help improve retailers' operational efficiencies and create differentiated, personalized customer experiences.

What is Verizon 5G Edge with AWS Wavelength?

Verizon 5G Edge with AWS Wavelength is a MEC platform that integrates AWS cloud services with Verizon's wireless cellular network, bringing the cloud closer to mobile end users and connected devices while unlocking a wide range of transformative applications.

Using the deep portfolio of AWS cloud services, developers can innovate and build new applications right at the edge of the Verizon mobile network and deliver those applications from the network edge with low latency. And with 5G Ultra Wideband (available in select areas) offering high speed, low latency and massive capacity, performance is even better. This solution leverages AWS Wavelength to run AWS compute and storage at the edge of Verizon's mobile network.

By bringing powerful computing infrastructure and cloud services closer to retail locations, Verizon 5G Edge with AWS Wavelength can help you transform your retail experience.

By bringing powerful computing infrastructure and cloud services closer to retail locations, Verizon 5G Edge with AWS Wavelength can help you transform your retail experience by allowing you to offer your customers more-engaging, value-packed experiences while at the same time increasing operational efficiencies on the back end.

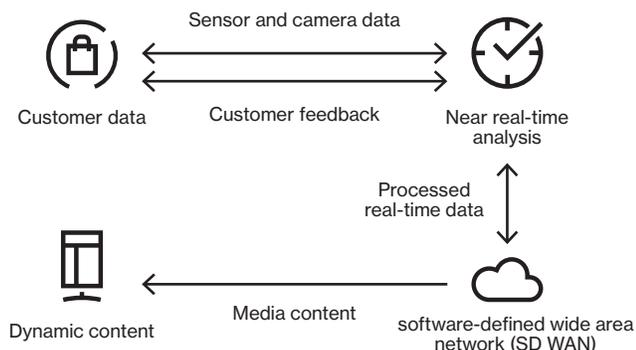
What follows are just a few examples of how these innovations can be brought to life.

Transform the shopping experience with personalized, immersive and convenient customer experiences.

To succeed in today's intensely competitive environment, retailers need to offer highly personalized and immersive engagements that create a superior shopping experience. Verizon 5G Edge with AWS Wavelength offers advanced capabilities that can help you reinvent the retail experience.

For example, retailers need new ways to increase customer engagement, influence purchasing behavior and improve merchandising effectiveness. 5G and MEC-enabled capabilities such as video analytics, advanced artificial intelligence (AI), machine learning (ML) and hyperprecise location technology make it possible for retailers to provide interactive in-store digital signage that displays contextually responsive media content, customized offers and promotions, and dynamic pricing in near real time.

Retailers can use technologies like these to help them maximize upsell, cross-sell and new advertising opportunities with targeted, personalized messaging.

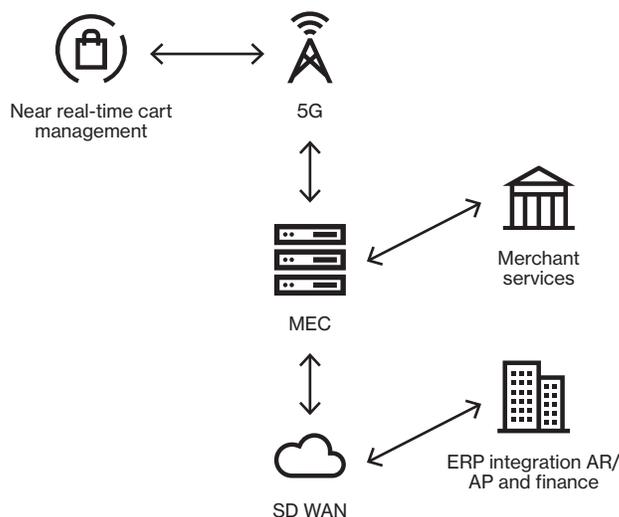


MEC in the retail environment

Improve customer satisfaction and retention with autonomous checkout.

Shoppers value convenient in-store experiences, including fast and simple checkout. Using the near real-time detection, data capture and compute capabilities enabled by Verizon 5G Edge with AWS Wavelength, retailers can offer their customers an autonomous checkout experience that eliminates cash-register wait lines.

In an autonomous checkout scenario, customers receive a shopper ID and create a virtual cart upon entering a store. Video analytics help identify shoppers' behaviors and track items added to their baskets in near real time. When customers finish shopping, they do not need to wait in a checkout line; purchases are automatically charged to the shopper's stored payment information as they exit the store. This allows retailers to offer an improved purchasing experience, increased shopper throughput and revenue, and the opportunity to repurpose cashier real estate for more effective use.



AR/AP: accounts receivable/accounts payable
ERP: enterprise resource planning

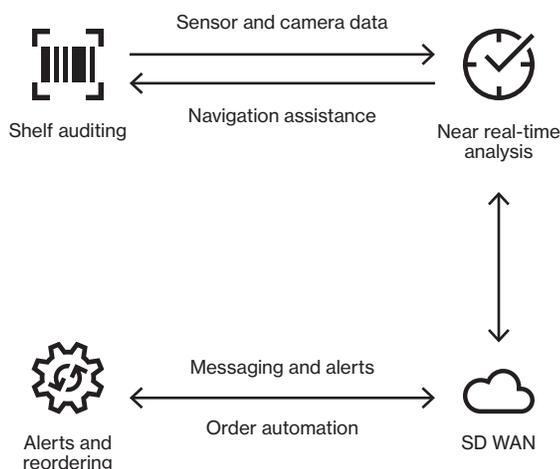
Enabling autonomous checkout experiences with MEC to reduce cash register wait times

Gain operational efficiencies with insights from near real-time inventory management.

With traditional inventory management systems, retailers often experience out-of-stock issues, costly employee time spent on manual inventory management, pricing errors and a lack of integration between inventory replenishment, supplier orders and merchandising. The low latency and high bandwidth of 5G Edge supports a significant increase in near real time operational data and inventory management.

For example, using Verizon 5G Edge with AWS Wavelength, retailers can use computer vision with AI/ML capabilities to monitor on-shelf availability and track purchased items, as well as detect misplaced, mislabeled and mispriced products in near real time, helping to improve shelf inventory and store efficiency.

Verizon 5G Edge with AWS Wavelength can help enable accurate inventory replenishment and supplier orders, helping to cost-effectively manage cross-store inventory to improve supply chain efficiency.



Automating retail inventory management with MEC to optimize product availability and store efficiency

Why Verizon and AWS

In retail, change is an imperative. And successful change requires investing in smart solutions that deliver the personalized and convenient seamless shopping experiences across online and physical stores that consumers expect. Using 5G Edge with AWS Wavelength, retailers can change the way they engage with customers, optimize their operations and create a smart store.

Through Verizon's partnership with AWS, Verizon 5G Edge with AWS Wavelength provides a fully integrated network and computing environment that makes it possible to create and deliver innovative and personalized experiences for your customers.

For details on how 5G Edge with AWS Wavelength can help you create transformative experiences and improve operational efficiencies, contact your Verizon Business Account Manager.

Learn more:
 For more information on Verizon's ongoing 5G mobile edge computing collaboration with AWS, visit verizon.com/5gedgeawscloud

