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Future of the Store
Advanced connectivity and data-driven shopping

When you're shopping online, e-commerce retailers have increased capability to track your movement. Which ad (if any) brought you in, which products you've looked at and for how long, what items you've put in, removed from, and left in your cart—your entire shopping experience is captured and analyzed in real time, with the resulting data used to optimize your experience and maximize sales.

Now compare that to a typical in-store shopping experience. Most stores cannot track how you shop, what aisles you shop, or what items you've picked up, put in, or removed from your actual shopping cart before you reach the checkout line. Data tracking shoppers' in-store experiences is limited at best and stores are operating nearly blind. Retailers that are able to gather in-person shopping data and use it to optimize the in-store experience for both customers and salespeople will have a real leg up on the competition.

A brief history of in-person shopping data

For years, retailers have only been able to capture transactional data and information gleaned from loyalty programs, which they use to track customers' buying habits and develop target customer personas. More recently, focus has expanded to capture and analyze data in real time, while customers are shopping. The objective is on driving marketing and operational decisions that improve the overall shopping experience— for example, using customer demand data to prioritize employee tasks in real time.

Common data capture and analysis challenges

Today's brick-and-mortar retailers face multiple challenges around data capture and analysis:

- **Collecting data.** Whether we're talking online or in-person shopping, the big question remains: What data should

a retailer collect, and how and where should it be collected? The sheer number of options can leave retailers feeling overwhelmed, with little idea where to start.

- **Planning for an evolving internet of things (IoT).** There's also the question of what information can be captured with IoT devices, both today and in the future. How will that data be stored, analyzed, and dispersed? And what's the best way to use it to inform real-time decisions?

- **Data overload.** Many retailers produce store-level reports, but still lack the ability to effectively use them. They might get bogged down in minutiae that has little effect on the bottom line, or find that the information they've collected goes stale too quickly to be useful.

- **Antiquated technology.** Many retailers rely on legacy machinery, point of sale (POS) terminals, and network connectivity;

they may still batch and exchange information with headquarters only at the end of each day. But outdated infrastructure and processes can't support real-time data computing and analysis, especially when a store generates a large volume of data from multiple IoT sources.

Advanced connectivity and the future of the store

When you need to gather and analyze data from tens of thousands of stock keeping units (SKUs), customers, and stores, scalability and real-time data synthesis become critical. Capturing and analyzing such large volumes of real-time data at this scale demands a 5G- and edge-computing-based technology backbone that can handle the resulting data latency, speed, and volume issues. Besides the scale and speed benefits, combining 5G and edge help stores:

- **Inform immediate action.** 5G and edge computing offer easier ways to push relevant information to customers and employees. Scorecards might tie specific metrics to defined manager and associate tasks, with a focus on actions with the greatest impact on customer experience— for example, finding a specific item or responding to a cleanup request.

- **Integrate external data.** Combining 5G and edge can also allow you to integrate external devices and data, such as weather and location updates, that can positively impact product availability, shipping, and restocking decisions.

- **Expand predictive analytics.** 5G and edge computing also support expanded store-level analytics. AI and prescriptive ML, for example, can help alleviate data paralysis, transforming large volumes of data into actionable store-level routines such as stocking shelves, running real-time promotions, and assigning associate tasks.

- **Support innovation.** 5G also supports innovative use cases such as camera-vision monitoring to reduce merchandise shrinkage or AR mirrors that allow customers to virtually try on multiple outfits in seconds.

- **Increase precision.** Another game-changer is 5G's greater data precision. For example, pinpointing customers' and employees' exact locations within the store makes it possible for a retailer to push relevant real-time promotions, or reassign an associate to a new task based on in-the-moment demand.

- **Improve resiliency.** Advanced connectivity (using 5G and edge computing) allows you to mitigate the effects of potential cloud-related outages, increasing resiliency, protecting data, and continuing store operations even when things don't go according to plan.

Getting started with 5G and edge

Before making investments in advanced connectivity technologies, retailers need to understand how 5G and edge computing capabilities can support the long-term vision for their stores. The bottom line: How could these investments help the retailer use data to improve customers' in-store experience?

Building the technical foundation could entail a custom platform, moving existing and future workloads, buying off-the-shelf solutions, collaborating on an integration, or some combination of these options.

Learn more

To find out more about how advanced connectivity, 5G, and edge computing can help you transform your store operations into world-class customer-ready formats, contact us.

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