Drawing a Line on Checkout

Internet of Things technology helps improve the customer experience

by **M.V. GREENE**

A tell-tale sign that shoppers are ready to flood checkout lanes seems to be certain items beginning to fly off store shelves.

At a grocery store, those shelves might be in the dairy and frozen food aisles, as consumers tend to grab those items near the end of their shopping trip. Particularly during peak shopping periods — after work or Saturday mornings — retailers can be assured that checkout is going to get crowded when milk and frozen pizza shelves get lighter.

So why not prepare for the crowds ahead of the onslaught? To do otherwise is to incur the ire of loyal shoppers who don't want to spend even five minutes in line waiting to make purchases.

The solution emerging in today's retail environment is to optimize checkout by deploying Internet of Things technologies throughout the store, whether it be a big-box, supermarket, boutique shop or restaurant. IoT is

a base technology that comprises the foundation of sensor-based platforms to enhance the manner in which people interact with store environments through smart devices, while also generating key analytic business data.

In the instance of linking store shelves to impending checkout activity as a means to alleviate long lines, the solution would be weight-bearing sensors that calculate the rate at which items are being removed from shelves, says Shaun Kirby, director of the Internet business solutions group at Cisco Systems.

"We found that the rate at which milk is leaving the [shelf] is actually an indicator of imminent checkout," he says. "That's an important signal that retailers want to measure to predict demand for checkout accurately."

REDUCING 'FRICTION'

Cisco is trumpeting the connectivity of the Internet and smart devices, which it calls the "Internet of Everything." Cisco's role in the IoE paradigm for the retail industry, Kirby says, is connecting "data, processes and people" through the provisioning of components to increase systems intelligence for platforms deployed by its vendor partners.

Panera Bread sees the deployment of Internet connectivity systems as critical to its future growth. The St. Louis-based company operates about 1,900 restaurants, and plans to add 150 new locations in 2015.

John Meister, senior vice president

and chief information officer, says the chain is focused on reducing what it calls "friction" around the delivery of food. The company has initiated Panera 2.0, a Cisco IoE system involving mobile payment and digital ordering processes designed to reduce wait time and improve order accuracy.

One feature allows dine-in customers to seat themselves and order via a mobile app. Another enhancement allows for rapid pickup of to-go orders placed online via mobile app, kiosk or a cashier. Included is a dedicated seating area for to-go customers with an order-status monitor that provides real-time updates as orders are prepared and completed.

"We took a fully integrated approach that uses IoE-enabled technologies not only in the customer-facing areas, but also in our back-end operations to ensure that our product processes can handle the increased volume generated by the new ordering pathways," Meister says.

One enhancement is self-service ordering: Panera Bread has added more than 200 kiosks to its restaurants over the past two years.

"We're seeing customers get more comfortable with using the kiosks and also more comfortable with online and mobile ordering," Meister says. "During the busy lunch and dinner hours we see the digital usage being the highest, as customers are taking advantage of these other channels to order their food in advance and avoid waiting during peak demand [times]."
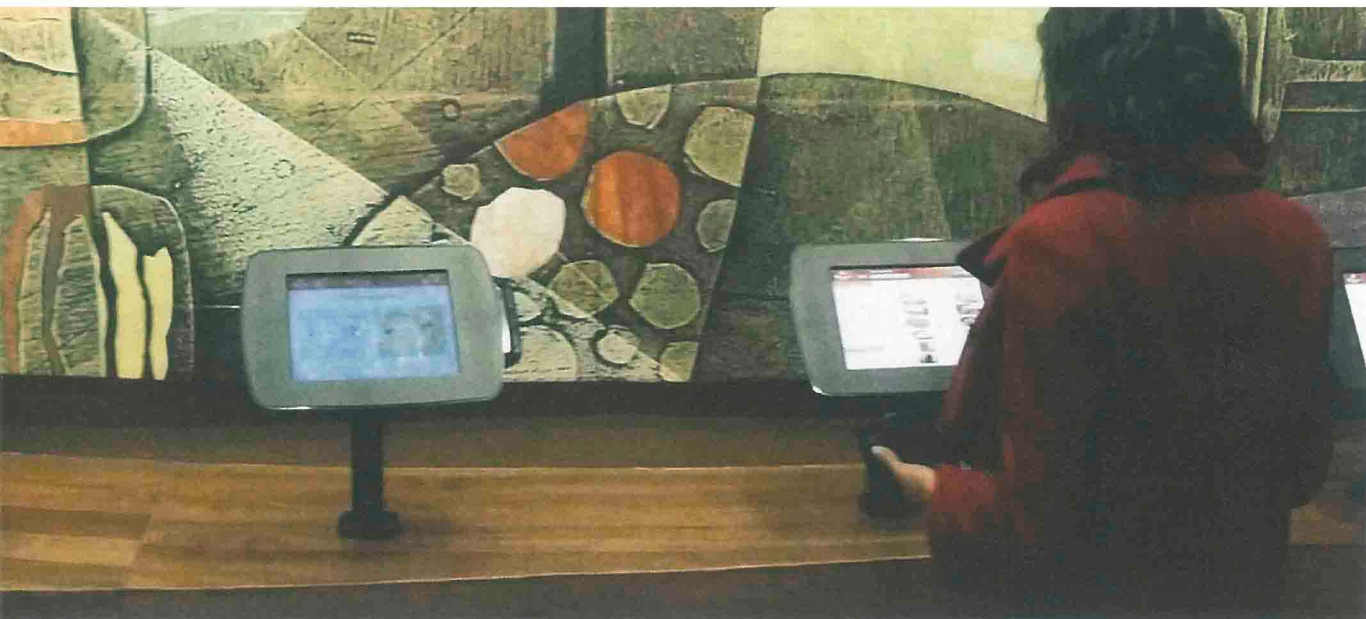
LEVERAGING EXISTING TOOLS

In addressing the World Economic Forum's annual meeting in January 2014, Cisco Chairman and CEO John Chambers envisioned 50 billion devices worldwide would be Internet-connected by 2020 — from the sophisticated to the mundane. "Garbage cans with sensors and network connections can alert maintenance staff when they are full, or let them know when they aren't full and don't need to be emptied," Chambers predicted.

The worldwide market for Internet-connected devices will grow from $655.8 billion at the end of 2014 to $1.7 trillion in 2020, according to research from IDC released in June.

Data, processes and people "are key to organizations in any industry getting the maximum value out of this new phenomenon of smart connected devices everywhere," Kirby says.

Retailers can leverage a number of technology tools in checkout optimization. Many legacy security video systems can be programmed to analyze shopper movement and predict where and when store traffic is going to increase. Kirby says that combining the power of analytic data with emerging IoE technologies gives retailers an opportunity to create a more compelling experience for their customers.

"We can use analytics and take that data to predict into the future," he says. "And by measuring these algorithms over time, we can help each retailer predict, according to its own unique retail formula, the best

estimate of how they will need to best staff for cashiering to optimize for that process."

Cisco surveyed 6,000 consumers worldwide for a January white paper and found that 77 percent of respondents would embrace retail checkout optimization as a means for increasing their efficiency in stores and decreasing wait times.

ENHANCING ENGAGEMENT

Checkout optimization represents one of a host of IoE-based technologies that are designed to get customers through stores quickly and efficiently. Other applications include scan-and-go platforms that link applications on shoppers' mobile phones and smart devices to radio frequency identification tags and sensors to track what shoppers put in their shopping carts and automatically bill them as they leave the store; navigation systems in cars to alert stores when a consumer will arrive in order to provide for curb-side pickup; "smart mannequins" embedded with sensors that allow shoppers to point their smartphones at the display to order an outfit and have it delivered to their home; and augmented reality to help shoppers locate items on their shopping list while in the store.

Jo Satili, North American sales manager for retail and hospitality solutions at Panasonic System Communications Co., a Cisco partner, says retailers are approaching the deployment of Internet-connected devices as a driver to

"enhance engagement levels to bring customers back in the store."

Satili says retailers must be open to multiple systems depending on the whims of the connected customer: Some still want traditional fixed point-of-sale systems, though they expect flexibility in POS approaches; others seek increased engagement on the sales floor, such as when store associates move about, consult with customers, check inventory and fulfill purchase transactions. Some customers prefer self-service checkout systems, such as kiosks that let them bypass store associates and still receive the benefits of in-store shopping.

"It's about choice," Satili says. "Not every customer that comes into the store is looking for the same experience, so retailers need to accommodate these differences." **STORES**

M.V. Greene is an independent writer and editor based in Owings Mills, Md., who covers business, technology and retail.