

# Grocery shopping is going high-tech

After decades of little change, stores are poised to make a leap.

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Like many grocery shoppers, Michele Ricketts dreads long checkout lines.

But lately, she's been breezing by the cash register at her neighborhood Ralphs even with the usual crowds at the store.

"In the last month, I have noticed it was faster," said Ricketts, 27, an actress from the Miracle Mile. "I thought I was dreaming."

She wasn't. To shave precious minutes off wait times, Ralphs has been installing technology to measure foot traffic in nearly all of its supermarkets.

Known as QueVision, the

system uses hidden infrared cameras with body heat trackers to figure out how many customers are shopping at any given time. Managers use that information to redeploy workers to the cash registers when things get busy.

It's already paying off. QueVision has trimmed the average time it takes to get to the front of the line to roughly 30 seconds from the national average of four minutes, a Ralphs spokeswoman said.

The checkout system is part of a long-overdue effort by traditional grocery chains to evolve and stay competitive through the use of technology.

The \$518-billion grocery store industry hasn't made a major leap forward since the bar code scanner was introduced in the 1970s. Thin profit margins have kept the

[See Groceries, A18]

[Groceries, from A1] shopping experience pretty much the same for decades: squeaky shopping carts, long checkout lines and aggravating scavenger hunts to find products.

"You have an industry that's been kind of stuck in time," said Scott Mushkin, a grocery retail analyst at Wolfe Research. "Grocers have to invest. Their business models have been under so much pressure, they're fighting for their lives."

Technologies that have recently made their way into supermarkets include digital signs that update prices and locations of products and offer promotions by time of day, such as coffee and granola bar specials for morning commuters. To speed up the checkout process, customers can pay via fingerprint scanners or use smartphone apps to scan bar codes themselves. A self-propelled "smart" shopping cart that can follow customers and lead them to items is being tested.

Grocery chains are finally spending the time and money to modernize because they are nervous about losing out to rivals.

Big-box retailers such as Target are beefing up their grocery sections, and Amazon.com has been aggressively rolling out its Amazon Fresh same-day grocery delivery service.

Grocery industry revenue shrank an average of 0.4% in each of the last five years, according to research firm IBISWorld. Companies were hit hard by the recession as high unemployment and low disposable income led consumers to cut back on premium products and rely instead on cheaper generic brands and discounts.

U.S. grocery stores are trailing behind their international counterparts when it comes to embracing technology.

British grocery giant Tesco, a pioneer of supermarket innovation, has more than 5,000 technologists in its Bangalore, India, development center working on new ideas to improve the company's stores. At a conference in March, Chief Executive Philip Clarke said "a new wave of creativity has been unleashed."

"Digital is now intrinsic to retail," he said. "That's why, in 2013, we will invest three-quarters of a billion U.S. dollars in technology, up threefold in three years."

In 2011, Tesco launched its futuristic Homeplus market at a Seoul subway stop. There's no food in



Photograph

**RALPHS HAS** adopted the QueVision system, using infrared cameras to monitor how many customers are in a store so managers can anticipate how many che



**A QUEVISION** screen shows checkout data. Other systems aim to make paying easier or lead customers to items they want.

this virtual grocery store, only interactive walls around the station that display photos of fruit, vegetables, milk and other grocery staples. Using their smartphones, commuters can buy these products by photographing QR codes printed on the images and paying through their phones. Tesco delivers the purchases to customers' homes the same day.

ASDA, another British grocery chain, recently introduced a checkout scanner tunnel. Consumers place their items on a conveyor belt, which whisks them through a 360-degree laser scanner. The tunnel reads the bar codes, which ASDA said is "so fast it can increase the speed of scanning your shopping by up to 300%." (Ralphs par-

ent Kroger is experimenting with similar technology.)

Grocery stores especially want to appeal to younger shoppers, many of whom tend to avoid traditional supermarkets because they consider them the place their parents shop. One way to woo smartphone-toting millennials is to make grocery shopping more tech-friendly, analysts said.

Midwest supermarket chain Hy-Vee, for instance, teamed up with AT&T to launch a mobile app with a voice-activated product locator.

Last year, Whole Foods lent one of its shopping carts to Austin, Texas, tech firm Chaotic Moon, which used it to develop the SmartCart, a grocery cart equipped



Photos by CHERYL A. GUERRERO Los Angeles Times

scanners to determine how many checkout lanes should be staffed.

with a tablet and Microsoft's Kinect device.

Users can transfer their shopping list and dietary restrictions and preferences from a smartphone to the cart. When a user places an item into the SmarterCart that conflicts with his or her diet — say, a box of pasta that isn't gluten-free — the self-propelled cart sends an alert and can lead the shopper to alternative products.

Chaotic Moon has also integrated real-time food safety information into the carts so that as soon as a recall is published, SmarterCarts can notify shoppers if they have recalled items in their carts.

Wal-Mart, the nation's largest grocery retailer, recently expanded its Scan & Go payment system to more than 200 stores. Customers use Wal-Mart's mobile app on their iPhones or Android devices to scan bar codes on products they plan to buy; to pay, they wirelessly transfer the contents of their mobile basket to an in-store self-checkout machine.

Other chains are introducing their own checkout timesavers.

Fingertip scanners were gaining traction in the U.S. before the company behind the technology pulled the plug on the Pay by Touch system and filed for bankruptcy during the financial crisis.

Shoppers paid for goods using fingertip scanners linked to their payment information.

"We had numerous customers signed up for it," West Seattle Thriftway owner Paul Kapioski said. "Several hundreds used it and liked it and it was a very convenient system."

Now tech firms are bringing fingerprint technology back. Pay-Tango, a Silicon Valley start-up, has developed finger pads to be installed in grocery stores and other retailers.

A separate fingerprint scanner was a hit during a six-month trial, which ended in March, involving France's Auchan and Leroy Merlin stores. Nearly 5,000 transactions occurred during the trial, according to Natural Security, the firm that developed the scanners. Afterward, 94% of participants said they were willing to use the payment option in the future.

Not too long ago, the idea of payments linked to fingerprints made many people uneasy. But in the age of social media and mobile computing, consumers are getting more comfortable handing over their personal information, said Andrew Wolf, an analyst with BB&T Capital Markets.

"You don't hear people moaning about it," he said. "It's a quid pro quo, a payoff on both sides. People seem comfortable with that."

But in an industry built on human interaction, too much tech too fast could become a death knell for overeager grocers. One early adopter turned fast failure was Fresh & Easy, the 6-year-old U.S. chain that was abandoned this spring by owner Tesco.

Patrons at the chain, which Tesco is now attempting to sell, complained about the dearth of smiling employees in the stores, which feature self-checkout machines only.

Consumers "found it a bit alien and saw it as an example of poor customer service," said Neil Saunders, managing director of retail research firm Conlumino.

So grocers need to incorporate tech in a way that isn't off-putting, he said:

"The bottom line is that to work in a supermarket context, technology can be useful, but it is not a replacement for the old-fashioned values of good prices, strong service and quality products."

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