

Grocers Imagine the Store of the Future; Straight from Kroger labs: customized ads, smart shelves, sensors that deploy cashiers

Haddon, Heather . Wall Street Journal (Online) ; New York, N.Y. [New York, N.Y.]16 Oct 2017: n/a.

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FULL TEXT

Food retailers are racing to leverage one of the most important weapons in their battle to keep people coming to grocery stores: data.

"Data is the new battleground," says Stuart Aitken, chief executive of 84.51 , Kroger Co.'s data-analytics unit, whose name derives from the longitude of the division's Cincinnati headquarters and because its 750 employees do so-called longitudinal studies, researching habits of customers over long periods.

Working from a small host of research facilities beyond the sleek downtown headquarters and a lab tucked away in a suburban strip mall, Kroger's app developers and data scientists are mining consumer information to devise the grocery store of the future. They are testing apps for shoppers' mobile devices that will highlight sales based on whether the customer eats meat or needs help finding recipes for chicken, for example. Want to make fish tacos tonight? Another app will populate a user's digital shopping list with the necessary ingredients available at the store.

For store managers, meanwhile, a program is in the works to allow them to literally see how products are selling in a given aisle, using augmented-reality apps on their phones that show the prices and sales figures for the products found there.

Whiteboard fever

"We play in a variety of spaces," says Matt Wiley, a developer at 84.51 , during a behind-the-scenes tour that wound continuously through groups of employees brainstorming ideas on white boards. The analytics unit also does consulting for such firms as Procter & Gamble Co., General Mills Inc. and PepsiCo Inc.

Kroger, the nation's largest supermarket chain by revenue and store count, competes with food-sellers such as Wal-Mart Stores Inc. and a growing cohort of online food-shopping rivals, chief among them Amazon.com Inc. The Seattle-based company is generally upending retail business with its competitive prices, quick deliveries and the data analytics it uses to target customers based on their buying and shopping habits.

Food industry executives know they have to be smarter and faster to compete. Kroger has invested billions over the past decade and a half to hire engineers out of leading universities and away from companies recruiting talent with the same kinds of specialized skills—including data analytics, logistics and app-development. Recent innovations developed in Kroger's labs include infrared sensors that monitor the number of customers in a store and automatically deploy checkout clerks as the number grows. This tool alone, Kroger says, has reduced wait times by several minutes across its stores.

In-house equipment at most Kroger locations remotely monitors the freshness of certain produce and notifies managers the second a cooler blows out. Set to roll out at stores next year: shelves with sensors designed to recognize and communicate with apps on the mobile devices of certain customers. The apps contain data about each customer's shopping habits, and the shelves, in response, display banner ads customized for them, for such products as gluten-free or nondairy products. Kroger also is rolling out a wireless scanning device it calls Scan, Bag, Go at 400 stores next year. Customers will use the device to ring up groceries as they shop, then pay for their

purchases through an app.

Other retailers are using similar devices and other technology to woo customers. At Wal-Mart's Sam's Club stores, members can scan goods on their mobile devices while they are still shopping and pay through an app as they exit the store. Wal-Mart, the biggest U.S. food seller by stores and sales, also has developed—but not yet deployed—a patented facial-recognition technology that it says could be used to detect dissatisfied customers and respond to their needs.

"We're going to make shopping with us faster, easier and more enjoyable," Wal-Mart Chief Executive Doug McMillon told investors and employees this summer.

Not all of the supermarket industry's tech-driven efforts are about increasing sales. Costco Wholesale Corp., for example, uses its ability to track every purchase to inform its customers of food-safety recalls. And at Wal-Mart, stores are using virtual-reality headsets to train employees to deal with situations from holiday-shopping crowds to spills in the beverage aisle.

Supermarkets increasingly need to woo shoppers to their stores. Only 47% of 2,145 grocery shoppers surveyed in February said they shopped for most of their food at one primary supermarket, down from 61% a decade earlier, according to Hartman Group Inc. research for the Food Marketing Institute. Food shoppers increasingly split their dollars between supermarkets, discounters, club stores, specialty shops and online food retailers, Hartman's research shows.

Mining customer data is increasingly seen as the key to maintaining market share for supermarkets. Large regional chains, such as Michigan-based Meijer Inc. and California's Raley's Supermarkets, are hiring consultants to harvest data from their customers.

Early start

But Kroger has a head start on many of its competitors. Wal-Mart's advance into the grocery business in the late 1990s prompted it to start a customer-loyalty program in part to keep closer tabs on its shoppers. Today Kroger uses 850 algorithms to personalize the coupons it mails to 12 million households. The company can use purchase data to determine whether someone has gone on a diet, had children or retired, and to market different products to those customers accordingly. Some Kroger coupons have a redemption rate of 65%, compared with a national average of about 5%, executives say.

"We know our customers better than anyone," Kroger Chief Executive Rodney McMullen told investors last month. Retail analysts say that Kroger and other grocery companies need to do even more to make their discounts and stores appealing to shoppers as Amazon ramps up its attempt to grab more of the \$800 billion U.S. grocery market. The e-commerce powerhouse, whose recent acquisition of the Whole Foods chain makes its ambitions in the food-retailing space even more plain, spends 12% of its sales on technology each year, compared with less than 3% at most grocers, according to estimates from the U.K.-based consumer-analytics firm Dunnhumby.

"Grocery companies need to think of themselves more like tech companies," says David Ciano, senior customer strategist at Dunnhumby.

Amazon declines to comment on its investments and grocery strategy.

Risky investment

Selling groceries is a low-margin business, meaning that big investments in technology can be risky. Sometimes companies invest in new features their customers don't want to use, says Michael Halula Jr., retail practice director for the Americas for Teradata, a database analytics firm. "Too often it is the 'Field of Dreams' scenario," Mr. Halula says.

Kroger's digital spending is weighing on profits, which is one reason the company recently lowered its financial outlook this year. The grocer's stock has lost more than a third of its value this year.

But executives insist that technology is critical to keeping Kroger competitive.

"This is the obsession," says Chris Hjelm, Kroger's chief information officer; it is "the customer experience in our stores and how technology can be a part of that."

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Credit: By Heather Haddon

DETAILS

Subject:	Grocery stores; Food; Investments; Employees; Sensors; Customers; Retail stores; Data analysis; Supermarkets; Shopping; Discount department stores; Competition
Location:	California
Company / organization:	Name: General Mills Inc; NAICS: 311230, 311511, 311824, 311991; Name: Procter & Gamble Co; NAICS: 311919, 322291, 325412, 325611, 325612, 325620; Name: PepsiCo Inc; NAICS: 312111; Name: Amazon.com Inc; NAICS: 454111, 518210; Name: Wal-Mart Stores Inc; NAICS: 452112, 452910
Publication title:	Wall Street Journal (Online); New York, N.Y.
Pages:	n/a
Publication year:	2017
Publication date:	Oct 16, 2017
Section:	Life
Publisher:	Dow Jones & Company Inc
Place of publication:	New York, N.Y.
Country of publication:	United States, New York, N.Y.
Publication subject:	Business And Economics
e-ISSN:	25749579

Source type:	Newspapers
Language of publication:	English
Document type:	News
ProQuest document ID:	1950994317
Document URL:	https://www.proquest.com/docview/1950994317?accountid=7098
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Last updated:	2017-11-24
Database:	ABI/INFORM Global

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