



## Today's Special: Technology

From food safety to mobile ordering to robot automation, foodservice tech continues to advance By Tammy Mastroberte

**AS CONVENIENCE STORE** operators invest more money, time and square footage in foodservice operations, many are turning to technology for faster service, automation and an improved bottom line. Whether it's online or mobile ordering, in-store kiosks, food safety technology or robots cooking in the kitchen, the latest advancements are allowing c-stores to keep up with the restaurant industry and better satisfy customers.

"Technology in foodservice is not a new concept, but we are starting to see more innovation. Because of the low unemployment rate and higher labor costs, there is a lot of automation technology being developed," said Amanda Topper, associate director of foodservice research at Mintel, based in Chicago. "Also, mobile ordering and delivery is coming about because we are seeing a shift of more consumers wanting to have off-location dining."

In fact, 57 percent of consumers said they planned to use mobile ordering and pickup in 2019, according to Mintel's *Dining Out in 2019* report, published in December 2018.

In the convenience channel, a few operators are testing the concept, including 7-Eleven Inc. with its 7Now mobile app. 7-Eleven also partnered with Postmates

on delivery a few years back, Topper noted.

In terms of online ordering and delivery at c-stores, Mintel's March 2019 *C-Store Foodservice Report* showed 23 percent of c-store foodservice customers want to see online ordering from a c-store and 21 percent want delivery options offered.

"We are seeing operators invest more in mobile and online ordering, and shifting to a store concept that meets the needs of consumers placing orders online," Topper explained. "Dunkin' has a few test stores with special pickup areas for online orders and a drive-thru lane just for people who ordered online. Chipotle is testing this concept, too."

Technology for training is another area ripe with innovation. Many operators are using iPads or other tablets in the kitchen to feature recipes and provide training videos for kitchen staff on how to prepare meals, according to Jessica Williams, founder and CEO of the consulting firm Food Forward Thinking LLC.

"With training, it's critical to replicate in-person training as much as possible, so video training through iPads or filming recipes in those quick clips people see on Instagram is something that is helping right now," Williams explained. "The digital training will also be key to offering consistent and accurate products across a chain."

Many employees working in foodservice today are millennials and Gen Zers and, because they are always using their phones and on social media, they respond better to videos like this, said Francine Shaw, president and CEO of Savvy Food Safety Inc., based in Hagerstown, Md.



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Shaw believes mini training sessions will be a game changer. With all of the information being stored electronically, there is a record of the data and this can minimize the time employees spend away from guests.

“Changing the way we work with our team members will likely achieve the results we are not currently getting within the industry,” Shaw stated.

Technology advances are leading to improvements in the way food is cooked and beverages are prepared, too. For instance, convection ovens and microwave ovens cook foods using infrared heat — not only to keep them warm, but also to retain quality. They can respond to the temperature and water amount in food and adjust accordingly, said Williams.

“It will adjust between crispy chicken tenders and mashed potatoes because of the different water content, and even for grilled vs. crispy chicken,” she added. “This is an important aspect of food safety and also food quality.”

### Food Safety Advances

Years ago, food safety was not the topic of much discussion in the foodservice industry. Then, everything changed in 1993 when the Jack in the Box E. coli outbreak left 732 people sick, four children dead and nearly 200 people with permanent disabilities, including kidney and brain damage, recalled Shaw.

“When I first began in the industry, our technology was a manual fry timer,” she said. “Now, everything is digital — employee schedules, electronic inventory and product orders, digital cooking equipment and digital thermometers that automatically log temperatures on temperature logs with a sensor to notify the person in charge if the temperature of a specific piece of equipment enters the danger zone.”

One area in particular that’s gaining traction in food safety technology is blockchain food traceability, which enables a customer to track the entire lifecycle of a food product by scanning its QR code. Blockchain covers every link of the supply chain, from raw materials to production to the final product on the shelf, Shaw explained. Blockchain also enables companies to track their own supply chain in a



secure and paperless way. Data that used to take seven days to collect can now be obtained in mere seconds.

“Blockchain will make tracking shipments much less complicated. Every logistical step of a product’s journey will have instantaneous information on who handled it, where and when, resulting in fewer stolen, lost or damaged goods. Suppliers could even trace the temperature and humidity throughout the shipping process,” Shaw said. “This will be extremely useful in locating unsafe products or the source of foodborne illnesses, thus preventing costly mass recalls.”

Blockchain technology can also help prevent massive amounts of unnecessary food waste and all of the related costs that go along with it, including labor, storage, disposal of contaminated or mislabeled product, and more, she added.

### Robot Automation

Compared to other industries, the food industry has been slower to adopt robotics. However, it is now being incorporated into all areas of the supply chain — including the kitchen.

In December 2018, Walmart announced it is testing a robot named Flippy by Miso Robotics at its headquarters; Flippy works as a fry cook. And Creator, a casual burger restaurant in San Francisco, has a fully automated kitchen and robotic system to prepare orders.

“The use of robotics in the back of house is growing and with labor costs continuing to go up and the low unemployment rate, a lot of restaurants are turning to robots to keep menu costs low,” Topper explained.

The Flippy robot first debuted at Caliburger’s Pasadena, Calif., location in March 2018, and can also be found

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at Levy's Chick 'n'Tots stand at Dodger Stadium.

The autonomous food assistant is NSF-certified and certified by the Department of Health for produce line use, according to David Zito, CEO of Miso Robotics.

"Flippy can cook burgers, and our frying capabilities can cook chicken tenders and tots. We also have mozzarella sticks in the works," Zito noted. "Flippy also has Bluetooth-connected thermometers and computer vision to help avoid food waste."

This robot does not replace human employees; it can operate tasks autonomously with humans working alongside it. It can free up kitchen staff to spend more time with customers, Zito pointed out. Over time, he expects that the company's robotic kitchen assistants will be able to chop onions, cut other vegetables and even clean up the kitchen.

"There are definitely a few niches where robots can be focused in foodservice, like making burgers or salads, like the salad robot Sally by Chowbotics," Topper

pointed out. "I can see both working well in a c-store."

Sally is a robot that creates made-to-order salads, snacks, breakfast bowls and grain bowls and only takes up three feet by three feet of space.

Another robot to hit the market recently is from Blendid and known as Chef B. This kiosk robot is capable of making up to 26 12-ounce smoothies in an hour and features refrigeration systems, blenders, robotic arms and 20 temperature-controlled dispensers. The first Chef B unit debuted in March 2019 at the Market Café on the University of San Francisco campus.

Even Postmates, the on-demand delivery service, has added robots to its lineup, partnering with NewDealDesign in San Francisco to create an autonomous bot called Serve, which can carry up to 50 pounds and travel 30 miles on a single charge, according to a report by *Fortune*.

"Robotics will benefit from the overall transformation to cloud kitchens, which will be increasingly possible thanks to remote networking software and 5G support in urban areas," explained Zito. "As these connected hubs merge with artificial intelligence, machine learning and IoT offerings, the ability to apply intelligent automation in the commercial kitchen will accelerate, freeing up workers to deliver more meaningful customer interactions." **CSN**



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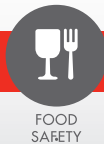
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