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Food And Beverage Industry Develops A Taste For Tech



Louis Biscotti Contributor

Food & Drink

National Leader, Food & Beverage Services Group, Marcum

Artificial flavors are nothing new, but Geneva-based Firmenich recently created what's being described as the world's first flavor made entirely with artificial intelligence (AI). If they're right, it'll also be something that tastes good.

The idea is to use data to develop flavors, better predicting and delivering what consumers want. Firmenich used consumer data, digital surveys and Microsoft's Azure cloud technologies to guide the creation of a lightly grilled beef flavor for meat substitutes, and it's testing additional AI flavors. Big data can be a big part of creating flavors, determining what consumers like rather than just tracking trends and personal tastes.

While AI is being tapped to develop flavors, F&B's futuristic outlook also includes robots joining the race to deliver food. At an otherwise ordinary Save Mart supermarket in Modesto, Calif., six-

wheeled, knee-high robots made by Starship Technologies are being filled with bags of groceries and sent to customers' homes. It's almost like R-2 D-2 has gone into the delivery business.

The future is now for the F&B industry. Tech is revolutionizing food and beverage as the COVID-19 crisis accelerates the pace of robotics and AI. Computers help manage supply chains and reduce waste, and software helps control costs, order inventory, and stock shelves.

When Amazon bought Whole Foods, some were surprised at the tech giant's interest. But food and beverage isn't as far from computers as it might seem. Silicon Valley's impact on the industry is only going to grow. Tech is becoming the secret sauce of profitable F&B companies.

AI, for instance, already is letting companies better predict sales and tailor inventory to demand, saving money and reducing waste, long a problem for the industry. AI also can help companies better manage their supply chains, making the process transparent and reducing time to market. COVID-19 supply chain disruption only made transparency matter more. AI - among the most important letters in the F&B industry - can even analyze data to predict shortages early, according to the Robotic Industries Association.

AI also can improve quality control, including sorting. Want to know which potatoes are best for chips and which for fries? Software, sensors, and cameras can sort raw materials based on their best final use. Tomra Systems, for instance, says its food sorting machinery can analyze the size, shape and color of french fries as well as the fat content of meat, according to Emerj Artificial Intelligence Research. Meanwhile, Key Technology says its laser sorter can use shape recognition technology to identify and remove foreign materials from fresh farm produce. Rockwell Automation says its software can analyze data to reduce energy consumption, improve quality, and increase efficiency.

Amazon isn't the only one hoping tech scores big in F&B. Silicon Valley is pumping millions into F&B robotics, going beyond contactless transactions. San Francisco-based Starship, launched in

2014 by Skype co-founders Ahti Heinla and Janus Friis, has raked in big investments, and big brands are testing new tech.

In the quick-serve world, White Castle is not just bracing for change due to COVID-19, but racing to the future. The company is planning a pilot with Miso Robotics' latest frying kitchen robot, Flipp, known as Robot-on-a-Rail or ROAR. Flipp uses robotics and sensors to automate the frying process, putting your burger in mechanical hands. White Castle CEO Lisa Ingram said she's trying "to bring the future into our kitchen" for what the company hopes could be "faster, fresher and delicious meals." The company says this can keep temperatures consistent and automate repetitive tasks like frying, so employees can be "redeployed to more customer experience-driven tasks."

Meanwhile, ghost kitchens are flourishing. Columbian startup RobinFood built a 50-"restaurant" chain in the cloud that it hopes to expand to 1,000 "cloud kitchens" over five years. Whether or not it does, ghost kitchens are becoming more visible, serving customers online only - and sometimes through takeout. Tech provides the front door without the high rent and costs of traditional brick-and-mortar. COVID-19 is likely to only increase the shift to the cloud. Expect more ghost kitchens—they won't go away after Halloween.

Could robots replace some delivery people as well? Maybe not so fast. Still, the fleet of robots made by Starship Technologies is taking first steps toward that. These robots travel a four-mile radius from a store with the words "Hungry? I can help." written on them, marketing while they deliver, but who doesn't? They travel at "pedestrian pace" with a bright orange flag to make them visible to walkers, cyclists and motorists. Starship Technologies is busy rolling out robots that can be tracked with customer cell phones that are used to open the containers and access the food.

Robots also may become more common in kitchens - call it "Robo-chef" - thanks to 3-D printed food prepared through automation as machines "assemble" meals. Cooking is creative, but inherently repetitive. Machines can be precise and handle repetitive tasks, which could turn

cooking into more of a science than an art. 3-D food printing could be the face of robotics in F&B, along with other variations of R-2 D-2 behind the scenes.

The global food robotics market was valued at \$1.5 billion in 2019 and is expected to reach nearly \$3 billion by 2027, according to Reports and Data. F&B is a huge sector and even a small market share amounts to a huge business. While Modesto's robots may stand out, there is an army of 293,000 industrial robots in factories in the United States, according to the World Robotics 2020 Industrial Robots report. A lot of that is in the automotive industry, although F&B is catching on, if not yet catching up. Automation is getting a shot of adrenaline from the pandemic, since machines can work longer and safer, taking over certain tasks.

Whether or not you like Star Wars, technology is transforming F&B. Still, companies in the tech space will not only have to produce or deliver food, but deliver savings and efficiency. Exactly what will the future of F&B look like? Don't be surprised to find a robot ringing your doorbell in the not-too-distant future.

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