

Automating the Commercial Kitchen

Labor efficiencies, food safety are top QSR priorities



Panelists (L to R): Chuck Guerin, Jim Kleva and Matt Toone



By Paul Hepperla
 Vice President, Solutions Strategy, Cold Chain
 Emerson

Earlier this year, Emerson hosted an E360 panel discussion on the topic of automating the commercial kitchen. The panel was comprised of a cross-section of industry stakeholders representing equipment manufacturers, restaurant end users and food safety device manufacturers. Each offered unique perspectives on the potential of automation and connectivity in commercial restaurants. Panelists included:

- Chuck Guerin, vice president for controls of the Middleby Corporation, a leading manufacturer of commercial cooking equipment
- Jim Kleva, director of equipment engineering of Wendy's, a global quick service restaurant (QSR) chain
- Matt Toone, general manager and vice president of Cooper-Atkins, an Emerson-owned global manufacturer of high-quality thermometers, timers and wireless monitoring solutions

The wide-ranging conversation yielded many insights into the current and potential future states of automation in the food-service industry — from producing very tangible improvements in restaurant operations to addressing myriad technical challenges related to connectivity. This article series will draw from the panel

discussion and bring these important issues to light, starting with the practical business objectives of improving process and employee efficiencies, possibly reducing staffing requirements, and ensuring food safety.

When exploring the potential of any emerging technology, it's sometimes easy to focus too much on the technical aspects and not the real-world applicability of its use. This panel was extremely fortunate to have Jim Kleva's end user perspective, because it helped keep the discussion grounded in terms of what's valuable to QSRs. Jim served as a constant reminder that this was not just a discussion of technology for technology's sake, but a primer about what matters most to QSR operations.

Labor efficiency, retention and reduction

The concept of automating the commercial kitchen is not a new one. Twenty years ago, the industry referred to it as *machine-to-machine*. More recently, it's been repositioned underneath an ever-expanding umbrella of internet of things (IoT) technologies. Depending on where you sit, the phrase *automating the kitchen* likely has different connotations; this was certainly true for our panelists, each of whom offered their own definition.

"The definition of 'automation' is to replace or enhance human labor with machines. In foodservice, we've done a great job of enhancing, but not replacing," said Kleva. He explained



“The future of automation in foodservice is replacing human labor, and that’s what we’re focused on. We don’t need to take 10 minutes out of a process. We need to take a body out.”

that the industry has steadily made enhancements to cooking equipment to help improve both efficiencies and food safety in commercial kitchens.

“We introduced a double-sided grill 15 years ago to help take potential safety concerns out of the hands of employees,” said Kleva. He pointed out that automation also enhances employees’ overall job satisfaction, citing examples such as self-cleaning ovens and sinks to limit manual cleaning tasks.

Kleva added that automation should also be focused on improving customer experiences. To that end, Wendy’s has introduced ordering kiosks and Coca-Cola Freestyle machines to automate processes and improve a customer’s visit to one of their restaurants.

It’s important to understand this context and the progression toward automation in commercial kitchens before considering the current and future potential of connected equipment and related technologies. In that respect, Kleva was clear about that potential.

“The future of automation in foodservice is replacing human

labor, and that’s what we’re focused on. We don’t need to take 10 minutes out of a process. We need to take a body out,” he said.

Chuck Guerin said that there were a lot of things that Middleby was working on to address future concerns, such as improving worker satisfaction, reducing the number of workers needed, and limiting food waste. Some of these can be accomplished by incentivizing tasks through processes commonly referred to as *game theory*.

“Automation can also help you to retain employees through rewards built into equipment that also serve as training systems — and this can be initiated at the control and through process automation in the restaurant as well,” Guerin said. He commented that Middleby was concentrating on automation initiatives that can connect not only the equipment, but also potentially integrate with various processes in the kitchen.

“Drive-through headsets and things like that are very important ways to potentially reduce the amount of time that it takes to complete a task, which could improve service speeds and eventually reduce the headcount,” Guerin said.

Focus on food safety

Because food safety is an ever-present concern for all restaurant retailers, automating the historically manual task of documenting food temperatures is a chief area of focus for Cooper-Atkins. Matt Toone reported that efforts along these lines are primarily focused on digital pyrometers to sample food temperatures, and

“Certainly, there’s an opportunity to connect devices and gain access to more data points in the kitchen, but without creating actionable events attached to that data, it’s all for nothing.”

automated monitoring devices used in cold storage areas such as walk-in freezers and under-counter drawers.

“Our goal is to capture the data necessary to ensure that food is safely stored, prepared and cooked. From a quality management standpoint, it’s important to make sure that these are easily repeatable processes,” Toone said.

In addition to protecting food safety, Toone said kitchen automation must also integrate refrigeration system monitoring, where smart alarms help operators drive efficiency and cost savings for businesses. This focus is one part of Emerson’s strategy to derive valuable business outcomes from all automation and connectivity initiatives.

“Certainly, there’s an opportunity to connect devices and gain access to more data points in the kitchen, but without creating actionable events attached to that data, it’s all for nothing,” Toone said.

The panel agreed that completely removing human interaction from food temperature monitoring was a challenging prospect. But according to Guerin, there are ways to design the equipment to make it more likely that employees are correctly performing these critical tasks.

“Automating food temperature monitoring is difficult to achieve. But we can utilize equipment and restaurant processes to change behavior by better understanding, tracking and rewarding the employees for doing these types of tasks correctly,” Guerin said.

Toone added that Cooper-Atkins is currently working with OEMs to explore the possibility of embedding temperature probes within equipment in hopes of limiting the human factor among these processes. “This is a future-state initiative. As of today, the industry is still using hand pyrometers,” he said.

Understanding QSR priorities

From a QSR’s perspective, kitchen automation must address both food safety and labor savings. Kleva said that among all the potential current and future benefits of automation, Wendy’s values labor savings above all else.

“Food safety is important, and while restaurants must achieve that, they can also continue doing that manually. If I present a business case for automation to leadership that doesn’t include labor savings, it won’t go anywhere,” Kleva said.

It’s clear that driving labor efficiencies and potential staff reduction top the list of priorities for QSRs today. We also know that protecting food safety is paramount, and that complying with the Food and Drug Administration’s Hazard Analysis and Critical Control Points (HACCP) requirements must be part of a restaurant’s food safety program.

Toone said that Cooper-Atkins’ solutions are designed to help assist these critical food safety initiatives by automating temperature monitoring throughout the cooking process to help ensure and preserve a franchise’s reputation. “For our customers, having access to three to four years of food safety data helps them ensure food quality and satisfy HACCP requirements,” he said.

The next article will delve deeper into the panel discussion highlights by exploring the business case of automating the commercial kitchen and cover the topics of IoT, data ownership, user interface impacts and service benefits.