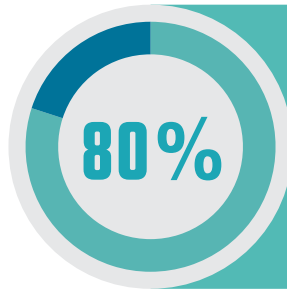


The Ultimate Guide to Kitchen Automation



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If there was any doubt about the role of automation in the commercial kitchen, the last few years and the global COVID-19 pandemic have cemented the future of technology: It's simple, get on board or be left behind.



“Over 80% of restaurants are turning to technology—like online ordering, reservation and industry apps, and restaurant analytics—now more than ever to help them run their business successfully and efficiently.”

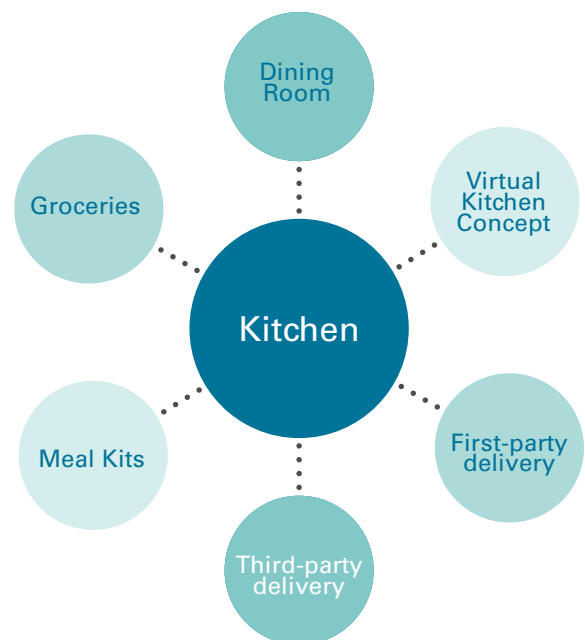
source: <https://upserve.com/restaurant-insider/industry-statistics/>

According to a [recent survey](#) of 500 restaurateurs and 1,000 consumers, 91% of U.S. restaurants have or will invest in kitchen automation technology this year alone. In addition:

- 3 out of 4 restaurants plan to offer contactless ordering and payment options - 61% of those utilize contactless payments on-site.
- 62% of revenue for restaurants using online ordering for delivery and takeout is expected to come through online channels.
- 67% of consumers prefer to use a restaurant’s website or app for food delivery.
- 92% of restaurant owners and managers are willing to experiment with their menu.

Those staggering statistics are a direct result of the changing consumer landscape. While delivery used to be only for city dwellers, nowadays, nearly every zip code is serviced by at least two delivery companies. Currently, 60% of U.S. consumers order delivery or takeout once a week, according to [data released earlier this year](#). Additionally, the shutdown of dining rooms, shortages of labor, food, and supplies, caused by the pandemic also required restaurants to adapt quickly and think outside of the box to remain afloat. Ultimately, what has developed is a hub-and-spoke model where the kitchen is at the center, allowing the changing demands to become new spokes as the restaurant ably adjusts to trends, including meal kits, increased delivery, curbside pickup, dining-in, etc.

The focus on automation is also a way to improve speed and accuracy for restaurant operators, specifically taking slow, labor-intensive, manual processes and making them as fast and efficient as possible. Removing those tedious processes from the role of kitchen staff can prompt a slight shift in labor to focus more on customer experience.





Restaurant kitchen automation: Is it necessary?

The short answer, according to Carlos Benavides, Restaurant Technologies, Inc. National Account Manager for Jack in the Box, is yes.

“I think a lot of restaurants are willing to make the investment in automation because they need to mitigate the labor shortage,” he said.

Currently, restaurants are having to pay a premium price for the labor they are attracting, in addition to the steep challenge of sourcing crew labor. Investment in commercial kitchen automation can help address both of these issues. While investments in technology can sometimes take years to pay back, in the current environment addressing the labor shortage with automation and offsetting escalating labor costs means those returns can be seen quickly.

Other factors including cost, safety and compliance, and the overall guest experience are also common reasons restaurants are turning towards automation.

Automated systems, including point of sale (POS) that automatically manage food inventory, can help promote cost savings while eliminating waste. In addition, Smart Menus can prompt customers to order their usual menu items, simplifying the ordering process while increasing speed of service and improving guest satisfaction.

According to Benavides, nearly 90% of people have a favorite order that they repeat. With the right technology, the ordering process can be simplified for consumers to select that repeat order while helping operators accelerate through-put and increasing revenues by as much as 10-20%.

Implementing things like a high-tech automatic hood cleaning system can also reduce the risk of fires and ensure you meet the NFPA standards for commercial cooking operations. At the same time, technologies including HVAC monitors can safeguard the quality of the food by keeping it at the right temperature and avoid contamination.

“ [Restaurant kitchen automation] helps you work smarter,” according to Tina Swanson, VP of Sales at Restaurant Technologies, Inc. “Automation allows for a shift in labor. If I can automate more of my kitchen equipment, for example, I can shift that labor from the back of the house to the front of the house and shrink drive-through times, or to focus specifically on the guest experience to drive repeat customers.”

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What kitchen equipment should I automate?

While each restaurant will have slightly different automation needs, there are several areas to consider when looking at commercial kitchen automation.

Data and analytics

One of the biggest benefits to automating parts of your kitchen is the added bonus of data collection which often accompanies restaurant management software, POS software or delivery/takeout software. Companies including [POSist](#), and [Zenput](#) help restaurant operators become more efficient and ultimately grow their business by providing analytics and direction that can quickly impact the bottom line.

The data collected can help predict consumer behavior and track things like time spent fulfilling an order by each shift, person, menu item, etc. With this information, managers and owners can quickly and easily pinpoint and address problems.

Another area data capture can help with is labor scheduling. Software including [7shifts](#) uses historical scheduling data, an understanding of how kitchens operate, and when the restaurant is busiest or slowest, to automatically adjust schedules to meet demands. This not only can help with labor costs but also significantly impacts guest satisfaction.



Safety

Safety in the kitchen can be simplified into two broad areas: keeping your staff safe from injury and keeping your food safe for customers. Both of these focuses can be automated in today's kitchens.

Automated cleaning systems like a hood cleaning system from [Restaurant Technologies](#) can clean your kitchen exhaust system daily without shutting down your cooking operations. Not only does this eliminate one of the less desirable parts of restaurant ownership - third-party hood cleaning - it also prevents grease build-up from your kitchen exhaust system, which can be a fire hazard.

Automated oil management systems can also play a critical role in kitchen safety. Instead of having employees lift the heavy oil jugs and risk burns by emptying hot oil, an oil management system eliminates the manual handling of oil and removes the propensity for an injury on the job. In a job market that is so tough, these automated systems can help attract and retain employees.

When thinking about food safety, temperature is king. Automated HVAC monitoring systems including [Monnit](#) and [Zen HQ](#) ensure the quality of food by keeping it at the appropriate temperature and can help with air temperature as well. Appliances such as refrigerated prep tables can also be added to your kitchen to track and manage food temperatures.

Customer experience

Convenience reigns supreme when it comes to hungry customers, and automation is making a huge impact. Ordering online and knowing when to pick-up your food, or driving to your favorite restaurant and having someone run your order out to the car, are just a few simple ways that automation improves customer experience. Instead of having to wait in line at the bar to grab a beer, customers can choose their own brew from a pour-your-own wall of options, offered by companies like [iPourIt](#), or [PourMyBeer](#). Not only does this cut down on wait time, it frees up bartenders to make cocktails, and it increases the volume of beer sold.

QR codes like [scanour.menu](#) or [Presto](#) that offer customers the ability to view a menu before being greeted by a server, or pay a bill without having to wave a server down, are also improving the customer experience. During COVID-19, technology such as those QR codes also increases customer and staff safety by limiting in-person contact.

Yet, while there are many positives for automation and improved customer experience, this may also be the one area where arguments against automation could play a role. While many QSR or quick casual restaurants can benefit and thrive by using automation in the front and back of the house without impacting customer experience, sometimes customers are looking for a more human touch.

There are two specific areas where food industry insiders are seeing some push-back.

First, the iPad ordering experience; people either really like it, or they really dislike it. This can correlate to different demographics, most often the generation of customers.

Second, the fine dining segment is often filled with customers who don't want their food made with robotics.

"In a QSR world where you can make Egg McMuffins in an automated fashion, that is perfectly fine," Swanson said. "But there's certainly certain circumstances where the actual preparation of the food should not be automated."

Supply chain management

If the goal is to improve the speed and accuracy of your restaurant by automating the slow, labor-intensive, and manual processes, there is no better place to start than the stockroom. Inventory accuracy - making sure you have enough product but not too much is essential to eliminating extra costs and eliminating the need for laborious and tedious days of inventory.

Did you know that 10% of all food waste in the U.S. is at a retail level?

That means 43 billion pounds of food is wasted each year costing more than \$46.7 billion annually. According to the [USDA Economic Research Service](#), the majority of the waste comes from excessive or insufficient heat, inadequate storage, or storage technical malfunctions. Nowadays, supply chain systems can connect directly to POS systems to automatically talk to each other and tell when a food item is getting low. That can prompt an order for when you need the food product.

However, we aren't just talking about the basics when it comes to maintaining accurate food inventory, which can be found in many restaurant management softwares. Instead, restaurant inventory management and purchasing automation must meet several standards including: maintaining current records of inventory, digitizing purchasing paperwork, balancing cost of ingredients vs. revenue, and organizing supplier information. Several companies provide this option including [POSist](#), [Craftable](#), [Restaurant365](#), and [MarketMan](#). By going those few more steps, your restaurant could eliminate waste and run more efficiently than ever before.



Trends in kitchen equipment automation

In the ever-changing arena of robots and automation in the food industry, some of the current trends are things that weren't even imagined a few years ago.

- **Robotic kitchen** - A kitchen without any human employees, can you imagine? Well, some fast-casual restaurants have taken the leap, and in those kitchens, all of the food is cooked by robots in the store after a guest orders them on a kiosk. One of the first kitchens to do this was [Spyce Kitchen](#). The food is prepped off-site by a small human staff, and there are a few employees on-site to provide customer service.
- **Robots making specific food and beverage** - Burgers, pizza, and cocktails, oh my! All of these and many more menu items can be made 100% by machines. Here are a few on the market now:
 - **Sally** - the salad making robot
 - **Cecilia.ai** - the interactive robot bartender
 - **Picnic Pizza System** - automatic pizza maker
 - **Mini Bakery** - automated system to make bread
 - **Flippy** - the burger flipping, french fry making robot
 - **Kitchen Robotics** - a robot that can be programmed to make any type of dish
 - **Solato** - a gelato making robot
 - **Makr Shkr** - a robotic bartender
- **Ghost kitchens** - A trend that skyrocketed during the pandemic is the appearance of ghost kitchens. Built as facilities solely for food preparation and cooking, they produce delivery-only meals. They don't have a storefront or indoor seating and frequently provide food for more than one restaurant. [Middleby](#) provides an entire setup for this approach.
- **Kitchens controlled by the Internet of Things (IoT)** - Technology, including sensors, timers, and Wi-Fi enabled kitchen equipment, allows cooking equipment to communicate, self-regulate and collect data. This means refrigerators and freezers can automatically adjust their temperatures to ensure the food stays fresh longer, or HVAC systems can automatically adjust if certain kitchen areas are too hot or too cold. [Swift Sensors](#) is one company that provides this service.

Not all automation is as extreme as those listed above. In fact, many kitchens have been using automation to help streamline their processes and increase their efficiency for years.

One of the more common technologies used is the RFID technology, like [Fly-Thru Drive-Thru](#), which can help create contactless transactions and allow a fast-food chain to address things at the drive-thru window like speed, convenience, and order accuracy. POS kiosks that allow people to order, such as [Toast](#) or [Revel Systems](#), are also a version of automation that has been used for more than a decade, increasing customer convenience, and known to generate orders up to 30% higher.



I want to automate, now what?

In restaurant segments from hotels to casinos, and higher education to QSR chains the industry has seen nothing but support for technology advances in the kitchen.

“ I have not experienced any foodservice segments that are not pushing for and very accepting of automation,” Swanson said. “I think of all the different industries that we serve, they are implementing automation, and it is positively impacting the financials and the customer experience. ”

There happens to be one exception, however, when it comes to the addition of robots in the kitchen: fine dining. Since a large portion of the fine dining experience is to eat food made by a well-known or well-loved chef, people expect that experience to have resources in the form of people, not automation.

If you are looking at automation implementation for your restaurant, there are four essential things to consider.

1. Phased implementation

While it may be tempting to give your entire kitchen an automation overhaul, transitioning in phases is a better tactic. By focusing on individual pieces and then building on them, it allows for workers to acclimate to the new processes, and can help to establish appropriate sequencing.

For example, a restaurant wouldn't want to set up a mobile kitchen before it had an online delivery system. By phasing in automation, restaurants can determine what works best for them and find the products which meet those goals.

2. Standard operating procedures

In order to have a successful implementation, you have to start with a strong foundation of basics.

This is where a standard operating procedure or SOP can make all the difference. If you have the appropriate processes in place to manage the task you are automating, the kitchen equipment will know how to actually perform the process and do it well.

If, for example, you plan to fully automate your oil management, you should have an SOP that breaks down and optimizes each step. How are you cleaning your oil? How often are you filtering? When do you test your oil for quality? How often? When do you change the oil? How does the oil get changed?

The answers to all of the questions can then be easily entered into the device to automate your oil management and ensure it executes the process appropriately.

3. Making your processes “dummy-proof”

The food industry is known for its turnover, especially in challenging times like these. So, to save yourself and your staff time from constantly having to teach new hires the automation, making it “dummy-proof” can save you time and money.

Constantly having to teach new hires how to use automation can become a bottleneck which can defeat the purpose, or decrease the efficiency, of automation.

Without a supply chain ordering system, a POS system would still require a person to take the information from the POS and order inventory. Constantly having to train a person for that role is not optimal. Instead, work on sequencing the next step of automation, supply chain automation, so the system can automate ordering based on the data from the POS system.

4. Finding the right vendor partner

There are many vendors to choose from when it comes to automated kitchen equipment, which means there are a lot of opportunities to find one who fits your restaurant best. A partner who will stay with you during the implementation, and beyond.

Here are a few key things to consider when you are vetting vendors:

- Will the vendor teach my staff how to use the automated equipment?
- Will they provide ongoing support?
- Is there someone who can help me interpret the data and reports the automated system is gathering?
- Does the vendor track alerts on any pending or predicted malfunctions?
- Will the vendor service the equipment quickly if it malfunctions?
- How will the vendor make sure the equipment stays up and running appropriately for a long time?



Kitchen automation is the present and future of the restaurant industry, and investment in this technology isn't only a trend, it's good business. "Food Service Employers need to invest in things that are going to help retain employees, which, frankly, is technology and automation," Swanson said.

"Smart kitchens really do help attract and retain talent because those workers aren't stuck doing mundane, repetitive, and potentially dangerous jobs. Instead, they can do the things they want to do in a kitchen, like preparing the food and interacting with guests."

Restaurant Technologies offers kitchen automation solutions for oil management and hood and flue cleaning. Contact Restaurant Technologies' Customer Care Team today to set up a free consultation at 888-796-4997.

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