



By Mark Kelnhofer, CFBE, CTA, MBA

Robotics & AI In The Restaurant Industry

Every year when attending the National Restaurant Association (NRA) Show at the McCormick Center in Chicago, one can view the steady rise in robotics and AI displays as they enter into the marketplace. In the past we have seen robotics in automated dishwashers, beverage dispensing, and even some robotics now that can replace a human person or persons on certain tasks. With every new technology, there are pros and cons to all of them. We may see an increase in certain areas where robotics and AI may exist, but we certainly should keep in our minds the true picture of what it would mean by the implementation of these new advancements.

Miso Robotics Kitchen Assistant Flippy. As an example, Flippy, the world's first autonomous cooking kitchen assistant came to light on social media, news channels, and eventually appeared at the NRA Show. One can search YouTube to see Flippy in action at CaliBurger. Flippy is a robot that has been implemented to place raw hamburger patties on the grill service, be able to detect the proper temperature to flip the burgers, and read the temperature again to finish and remove the burger from the grill. Miso Robotics Kitchen Assistants (misorobotics.com) can be programmed to flip 200 patties per hour and can also be programmed for cleaning support (i.e. grill scraping) in between cooking. Flippy can also handle the duties of four fryer bays ensuring proper temperature and quality.

Moley Robotics Kitchen Chef. Another amazing video is from Moley Robotics which shows arms coming out from above executing a more complex recipe. The automated chef is very ambidextrous and is showing more intense skill sets above and beyond Flippy (i.e. knife skills, mixing, etc.). It even shows the robot

cleaning up the prep area after. Overall it is an amazing video. One has to question about the reality and true cost of implementation. To be implemented at a fast casual or fine dining restaurant, there may be some customization that is required since recipes are proprietary and corporate chefs may have their own flair to incorporate. Higher customization translates to higher costs.

The Pros. As one can imagine, there can be a variety of benefits to implementing robotics like Flippy. First that many go to is the human elements of cost reductions. Flippy is dependable, never calls off work, has no associated benefit costs, does not complain to management, has no vacations or sick days, and does not need training (or re-training for that matter). Technically, Flippy can replace hourly employees and be able to provide a consistent, quality product. At a time where dependable hourly workers are hard to recruit and retain robotics may seem to be a great alternative. On the surface, Flippy seems to have a large amount of cost reduction advantages as compared to the industry's hourly work staff.

The Cons. One of the immediate cons is understanding the cost benefit. Initially, you need to understand the cost of acquiring a new fixed asset and the estimated cost related to bringing a fixed asset in. In the case of Flippy, the initial cost is excess of \$100,000. The technology cannot operate forever, so understanding the estimated useful life with the initial amount of cash invested in obtaining the robot is a critical set of numbers. Although the technology may not point there will be periodic repairs identify as part of your cost benefit humans can do that a robot cannot. flavor or cannot view the item to be said for having a quality human food.

“There is something to be said for having a quality human when dealing with the processing of food.”

call in sick or take vacation, at some and maintenance, a cost you need to analysis. Other cons to consider what For example, the robot cannot detect ensure quality. There is something to when dealing with the processing of

Limitations. In most cases, where robotics is actually being implemented is with quick service restaurants where the complexity of recipes is low. Mass produced and relatively easy to execute recipes (i.e. flipping burgers) robots may have a role within our industry. I do not think that fast casual or fine dining is ready to hand over food production to a robot regardless of cost savings. Corporate and Executive Chefs are paid to ensure the flavor profile, presentation, and quality are at its highest level. It would be hard to imagine where a robot can effectively determine those aspects of food production.



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