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Eateries with zero manpower interaction, 3D printing of food, meal kit subscription boxes with ingredients - these are all but a taste of what is to come. ST PHOTO: ZAINAL YAHYA

Singapore

EATERIES with zero manpower interaction, 3D printing of food, meal kit subscription boxes with ingredients - these are all but a taste of what is to come.

These concepts may not be in the mainstream here yet, but it is a matter of time before Singapore moves in that direction, according to industry players.

What was considered revolutionary previously such as vending machine hot food and ready-to-eat meals are no longer so novel. Developments in the areas of food services and manufacturing are progressing at a breakneck pace, as food and beverage (F&B) companies increasingly tap technology and automation to compete.

In the last few years, institutes of higher learning and consultancies such as the Singapore Productivity Centre have seen a surge in companies seeking their assistance to transform their F&B businesses.

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Just in the last year, Singapore Polytechnic's Food Innovation & Resource Centre (FIRC) has seen an increase of about 20 per cent of companies asking for help.

Loong Mann Na, centre director of FIRC, says: "Some of these companies are looking at setting up central kitchens, while others are exploring creating new products or improving existing products in terms of quality and shelf life."

Nanyang Polytechnic's Asian Culinary Institute has also seen a "healthy" increase in F&B businesses wanting to work with them in areas such as workflow processes, manpower capability development, adoption of new business models, and automation solutions.

It can also be attributed to greater awareness on the need for innovation, as the Food Services and Food Manufacturing Industry Transformation Maps were rolled out last year. Led by Spring Singapore, the roadmaps aim to go beyond technology improvements to revamp business models as well.

Michael Tan, CEO of Singapore Productivity Centre, believes that more enterprises now see the urgency to become more manpower-lean, especially small and medium

enterprises, as they grapple with intense competition, rising costs and a sluggish economy.

As to the belief that automation would cause workers to lose their jobs, industry specialists say that that is a misconception.

Explains Mr Tan: "Many F&B businesses today still face constraints on manpower and we have yet to see any displaced workers on the technology and automation projects that we worked on."

In fact, the manhours saved from automation relieves the worker to do other tasks which often leads to higher value contribution per worker.

New advances in technology and changing lifestyle trends have opened up a world of possibilities for the Singapore consumer, where the world is indeed their oyster.

Trends that were once foreign are now becoming more common; dining formats such as ready-to-eat and grab-and-go meals are increasingly found in convenience stores and supermarkets. At the back end, there has also been an increased adoption in efficient cooking methods such as sous vide and cook-chilled foods.

Technology advances also have made it possible for food manufacturers to extend shelf-life for up to a year, such as through the high pressure processing (HPP) technique.

Some up and coming trends such as 3D printing which uses edible ingredients are still in the exploratory stage for food companies in Singapore, which has the potential to shake things up. For example, FIRC is designing and developing 3D printed meal solutions for the silver generation to maintain balanced physiological functions such as mobility, visual or brain health.

Another trend that is likely to hit is the meal-kit concept, says Mr Tan.

He recently visited Blue Apron in New York as part of a study mission in collaboration with the Culinary Institute of America. He was amazed by the meal kit evolution there where elderly couples, family members or friends can bond over a meal kit delivered to their home with all the necessary and sometimes unique ingredients to cook from scratch by simply following the recipe to whip up a finished product.

Alternative dining formats with minimal manpower interaction such as the US fast food restaurant chain Eatsa may also be a possibility here in the future, which might suit the busy executive during lunch hour or the working parent rushing back home.

Food innovation is not limited to just what is edible - solutions for food wastage are also likely to grow.

Tan Jek Min, director of ACI, says that he sees a growing interest in food manufacturers looking to recycle downstream food by-products and reduce food wastage. New products are being produced through such means.

Recently, Nanyang Polytechnic collaborated with a research team from Agri-Food and Veterinary Authority of Singapore to develop a mussel sauce which is made using leftover broth from steaming mussels.

Even as innovations in the food industry continue to take place, one key challenge for businesses to overcome is the receptiveness of staff.

ACI's Mr Tan says that there is a need to change the mindset of staff to embrace these changes and to allay their job fears. This is on top of ensuring that workers are trained to use new equipment and technology.

But no matter how advanced technology has become, he says, there will always be a need for the "human touch" in F&B businesses. "Machines can replace the laborious and manual work but you need the chef's creativity and passion to create new, wonderful recipes, and service staff who provide excellent service will always be in demand . . . Machines are enablers but will not fully replace all aspects needed to run an F&B business."

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