

COMMENTARY SERIES ON INDUSTRY TRANSFORMATION MAPS

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You've heard about the Industry Transformation Maps, but not sure how you or your company can be part of the transformation journey? A series of commentary pieces penned by industry representatives will offer interesting insights on industry trends, and share experiences about how they have overcome challenges and captured opportunities to transform themselves and be future-ready.

In the second part of this series, we cast the spotlight on the food manufacturing industry. Dr Christine Lee, Director, Shiro Corporation Pte Ltd and Kay Lee Pte Ltd Asia shares how companies in this thriving industry can innovate to keep up with changing consumer preferences, as well as tap on automation and technology to improve productivity. She also highlights the importance of partnerships with tertiary and research institutes in helping businesses capture new markets and better compete in the global arena. Read more below for the article.

COMMENTARY: CAN SINGAPORE MAKE MAKAN GREAT AGAIN

By Christine Lee (first published on CNA Online on 28 May 2017)

SINGAPORE: Compared to just ten years ago, our hectic pace of life in Singapore is changing how and what we eat. On the one hand, working professionals like myself want something quick, with little or no queues, and easy to eat for lunch; often we dabao.

On the other hand, when we sit down with family and friends, we want food that is nutritious and high quality, partially because we want to savour the moment of friendship and family time, and probably because we think eating good food will enhance the quality of our interaction with each other.

At the same, as we become more affluent, our taste buds also evolve to appreciate finer cuisine.

Whatever the reason, a key question is – can your food keep up with your changing expectations? And do you even know what you want?

A FRUIT JUICE STORY

One trend we've picked up is more Singaporeans consuming fruit juices, in lieu of soft drinks, with increasing awareness of the health benefits and nutritional value of the liquids they consume.

Some are even shunning fruit concentrates to purchase those made from real pulp or probiotic fruit juices that have digestive benefits – especially consumers who are lactose intolerant.



Shiro's new probiotic fruit juices are a result of intense research and development by NUS and with aid from the capability Development Grant. (Photo: Shiro)

The challenge for food manufacturers is how to keep pace with consumer preferences to give you what you want, before you realise you want something. Fortunately, at Shiro Corporation, we received support from SPRING Singapore - through the Capability Development Grant and Automation Support Package - for the research and development (R&D) of probiotic fruit juice to work out a safe and nutritious formula and were able to bring this to market quickly.

Shiro also worked with students from tertiary institutions in its development. They helped select suitable fruits for fermentation and identify which probiotic strains to use, as well as figured out how to make food taste better and improve their shelf life. They also offered new ideas and fresh insights that improve processes.

It is amazing what work behind the scenes is required just to put this bottle of probiotic fruit juice on supermarket shelves.

Financial support is always helpful, particularly for SMEs looking to embark on new ventures, but we have found that collaboration between industry and institutions is an important growth strategy.

HUGE ADVANCES IN FOOD MANUFACTURING

Of course, automation is key in food manufacturing, a sector that has to be manpower-lean. Many of our processes along the value chain are automated. For instance, with an automatic stir-frying machine, we only need one person to produce a 150kg batch of stir-fried black pepper chicken. This process in the past used to require the efforts of three people.



An automatic sauce-packing machine (left) and a stir-frying machine (right) help to automate many processes in the food manufacturing value chain. (Photo: Shiro)

Ready-to-eat food has also seen something of a comeback, as busy families with dual-income parents pick up meals that can be reheated easily.

And this is a sector in Singapore that is thriving. Shiro has developed a whole range of ready-to-eat products, across a total of 11 different dishes ranging from black pepper chicken, herbal chicken soup and even the famous Kay Lee dark char siew.

Consumers only need to thaw the product, place the vacuum bag into the boiling water for about 20 to 30 minutes, and the dishes are ready to eat. It's just like having a chef at home.

When I tell my friends about how research centres are helping to bring about innovation in food manufacturing, many express surprise. The impression that academic institutions work solely on high-tech projects to create modern machinery like advanced weapon systems or driverless cars is strong.

Yet we are also working closely with NUS to develop tropical fruit wine. Through alcoholic fermentation, we are able to extend the shelf life of tropical fruits and increase the value of the products, now that these are infused with alcohol. The yeast we use also help to enhance the flavours in the wine, especially the floral and fruity notes.

I think all this surprise over how advanced the food manufacturing sector, is frankly quite puzzling to me, as a Singaporean.

For a country steeped in culinary traditions, where we take our food seriously, why shouldn't we put our best minds to work in food manufacturing? Don't we want to make makan great again?

FOOD PROCESSING TECHNOLOGY AS SHARED RESOURCE

As a society, we talk a lot about the sharing economy, but in food manufacturing, that talk has become reality. A high-pressure processing (HPP) tolling facility is being built in Jurong and will be unveiled in Q4 of 2017. This process helps extend the shelf life of products like juices, pastes, ready-to-eat meals and ready-to-cook items without using heat, therefore preserving the nutritional value and quality of food products.



A high-pressure processing tolling machine can cost S\$2.5 million. (Photo: MTI)

The average cost of a 300 litre HPP machine is about S\$2.5 million. On its own, I doubt any food manufacturing company will be able to afford such an advanced and expensive piece of equipment. But as a shared resource, the sector is given a huge boost.

Food companies can also tap on the Food Innovation Resource Centre (FIRC), launched in 2007 by Singapore Polytechnic and SPRING Singapore, to develop new and innovative products quickly in response to emerging global food consumption trends. At the FIRC, test-bedding and pilot programmes are the norm.

The FIRC has dedicated pilot plants, application laboratories, and a test kitchen among other facilities which are helmed by a core team of full-time, experienced professionals. They provide food manufacturers with much needed technical expertise in product and process development including packaging, shelf life evaluation and market testing.

A lot has been done over the past few years to boost technology adoption and capability development in the food manufacturing sector.

But my sense is that education to help SMEs in this sector understand and value new advances in technology and show them how to further boost their product offerings can be useful.

For instance, when Jurong Frog Farm learnt about the potential demand for hashima, they turned their operations around to focus on producing this Asian elixir, to much success.



The Food Innovation Resource Centre helps to test-bed and pilot new methods in food manufacturing. (Photo: FIRC)

Imagine what else our SMEs in food manufacturing are capable of, if they had help to redevelop and market their products?

Perhaps families can have ready-to-eat fried carrot cake for breakfast, or working professionals in the CBD can grab a packet of piping hot chicken rice in a box for a quick lunch.

With continued innovation in food manufacturing, I am confident that our food manufacturing sector will also be able to capture new markets and better compete in the global arena.

We have so much to give when it comes to food, Singapore.

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