

Microwave Packaging

Design Business Case Study



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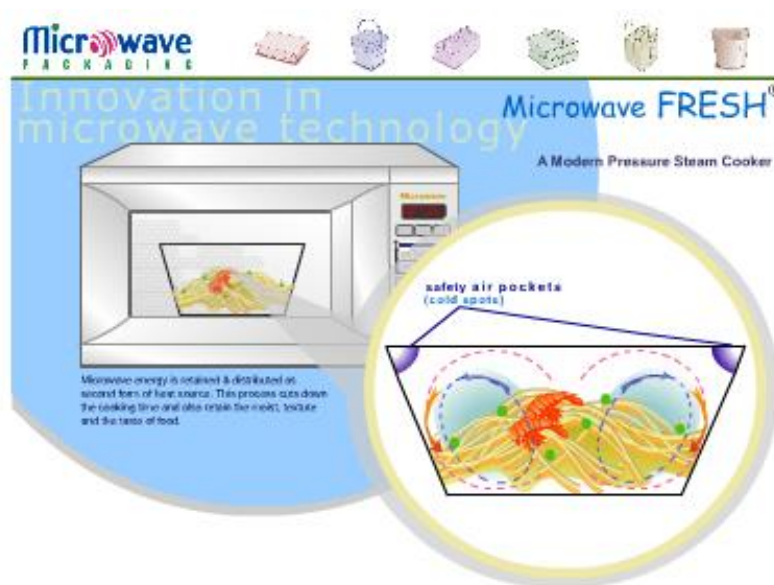
1. The Food Packaging Industry

Back in the kampong days, most takeaway food in Singapore was packed using leaves - with banana leaf, opeh leaf and pandan leaf being the most commonly used types of leaves. With rapid industrialisation and urbanisation, this practice was slowly replaced by brown waxed paper during the 1960s. As packaging technology improved over the years, the food packaging industry witnessed the development of various systems and equipment which can produce packaging boxes that offer better food quality assurance and convenience. With that, plastic containers and styrofoam boxes became popular with foodservice providers as these packaging allowed ease of handling and could keep the food warm for a longer period of time.

Today, the food packaging industry has developed beyond the designing and manufacturing of simple containers with basic functionality. Besides only meeting functionality requirements, food packaging manufacturers have become more sophisticated by increasingly incorporating both product and graphic designs in these food containers to ensure that their products stand out, and are able to offer unique value proposition(s) to their customers. All the above would also need to be achieved in a cost effective manner. It is only with the ability to value-add beyond simply manufacturing food packaging that manufacturers today are able to differentiate themselves from those market players who typically compete on prices. However, a key factor which continues to deter these manufacturers from adopting design as a business strategy is the rather weak support for Singapore-designed products by the local consumers, compared to those imported from overseas. This is,

in part, due to the fact that local consumers typically perceive products designed overseas to be promises of better quality and performance.

Despite these challenges, a homegrown packaging manufacturer, Microwave Packaging, was still determined to take up the challenge by injecting innovation and technology into the design of its packaging box, and differentiate itself from the rest of the industry.



2. The Microwave Packaging Story

2.1 History and Evolution

Microwave Packaging was founded by its Managing Director, Mr. Leonard Lau, who has more than 35 years of experience in the packaging industry. He started his own

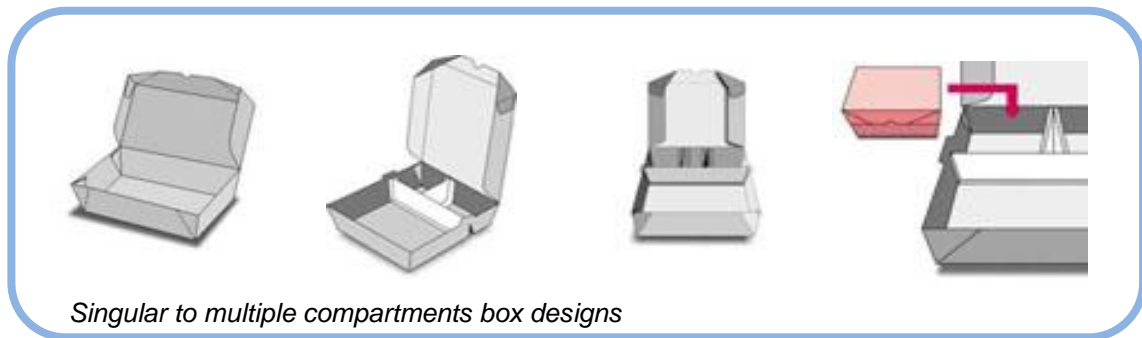
packaging business about 30 years ago, and was mainly involved in the packaging of non-food products, such as electronic equipment.

Over the years, due to the changing lifestyle of many Singapore consumers, the culture of 'eating on the go', compared to formal dining, have been increasing. Correspondingly, this has led to an increased demand for food packaging boxes by the foodservice industry. Observing such consumer trend, Mr. Lau then saw the potential business opportunity in the food packaging business. As food packaging designs are conventionally monotonous with basic features, Mr. Lau looked upon the new business line as a challenge and took the additional effort to develop food packages which are not only different aesthetically, but functionally more superior through the adoption of technology.

From then on, in continuing his commitment for design excellence and end-user satisfaction, Mr. Lau then spent a period of almost 10 years in his research and design (R&D) efforts, to develop its core product, the *TicTob*[®] Healthy Pack[®]. As the package is in-between plastic and paper packaging, Mr. Lau had to design the machinery for the production as no existing machine was available at the time to manufacture such product.

He patented the design of the box in 1999 and began his business expansion into the foodservice industry. Consequently in 2004, it achieved its first major breakthrough when it was awarded a contract by the Singapore Armed Forces (SAF)

to supply the *TicTob*[®] boxes for out-ration meals. The award of this contract is especially significant, as it is a clear recognition of the quality of products manufactured by Microwave Packaging. In particular, given that these food packaging boxes will be used by the Singapore military for all its soldiers, the client would hence not compromise on the quality of these food packaging boxes, and would only select the best quality food containers



2.2 Stepping Up to Innovations and Design Excellence

According to Mr. Lau, design is a mandatory element in every business. However, a company should be creative in managing its design phase to stay differentiated. In this respect, while package design and development are often considered as an integral part of the new product development process, the development of a package can also be a separate process where the design of the packaging can be sufficiently flexible such that it allows for further customisation based on the product to be packaged.

To this end, Microwave Packaging adopted the latter more flexible approach, and developed packages which are “not just packaging, but packaging which can serve as many functions as possible”. Mr. Lau believes that design is beyond just the physical appearance of the product, but to also incorporate various elements such as the adoption of technology, value-added functions, etc., for the product to stand out from the conventional ones. Additionally, like most other products, food packaging should also take into consideration the market and industry trends particularly in areas such as environmental-friendliness, technology, end-user needs, etc.

Nevertheless, Mr. Lau also emphasised the need to adopt a balanced approach where “it (design) has to be practical in terms of manufacturing and its usage.” He believes that “the spirit, the motivation and the purpose of design is about idea, guts and stamina”. To this end, Mr. Lau shared that because of his strong belief in his product, he had taken great financial risks and had spent a substantial period of time to make constant improvements on his designs to ensure that the final product is multi-functional, user-friendly, cost effective and, at the same time, feasible to be manufactured.

Ultimately, Mr. Lau aims to provide foodservice providers with more superior food packages that can offer user-friendly features, such as ease of storage and disposal, and value-added features such as platforms for advertisements, to both its clients in the foodservice industry and end-users. With the technology developed, it will then

allow for the kitchen to be brought to the office or home of the customers in a more convenient and cost effective manner.



TicTob[®] boxes stacked and nested

3. One Box Serves All: The TicTob[®] Healthy Pack[®]

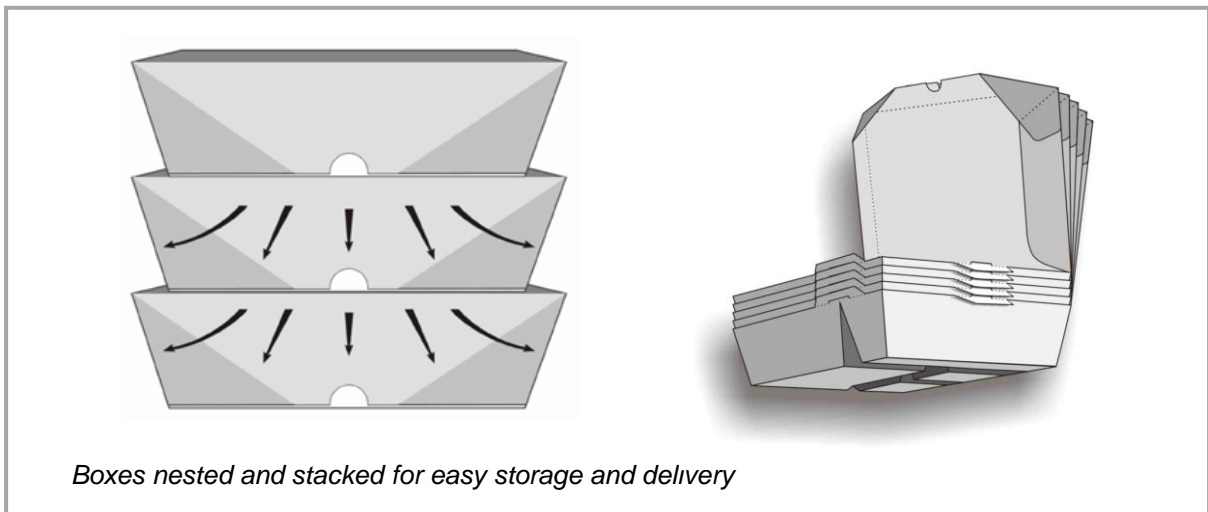
3.1 Key Elements of the Innovation

The 3 key distinctive features of the TicTob[®] box which differentiate it from the other packaging boxes are:

- Ready to Eat: Takeaway meals from food vendors can be kept warm for a longer period of time due to its unique design.
- Ready to Serve: Mass-catered meals will not turn soggy even before it is being delivered, with the compression strength of the box allowing for ease of transportation.
- Ready to Cook: Microwave-ready meals can now be refrigerated and microwaved in the same box.

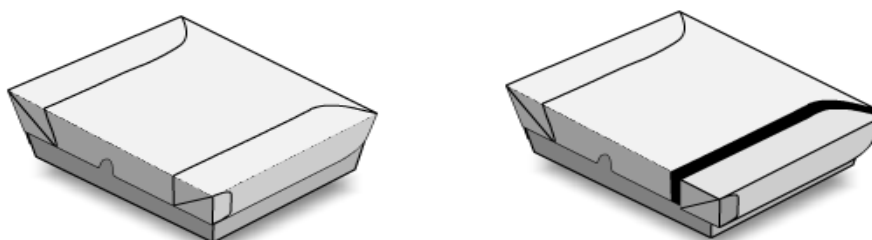
Using its patented technology – Microwave Fresh Technology also known as Steam + Wave[®] Technology which enables food to be steamed and microwaved concurrently,

the steam emitted is entrapped and effectively distributed within the trapezium-shaped box. This hence allows the microwaved food to retain its taste without compromising on its moisture and texture. Additionally, the specially-designed packaging box also helps to save space as it can be nested and stacked. With maximum compression strength of 35kg, the design allows for many of such boxes to be stacked for easy storage and delivery.



Boxes nested and stacked for easy storage and delivery

Beyond the physical structure of the *TicTob*[®] box, Microwave Packaging also had in mind the convenience of the end-user when developing the design of the packaging box. With detachable cutlery (i.e. fork, spoon and knife) included as part of the packaging box (as shown in the following diagram), the *TicTob*[®] box appeals to many in the foodservice industry as well as end-users. .



The detachable cutlery section of the TicTob[®] box

3.2 The Road to Designs – Challenges to Success

In its early days, as a local enterprise in Singapore, Microwave Packaging had to first develop the interest and convince his local customers to recognise that locally-designed products are as good as, or even better than their counterparts which are designed overseas. In this respect, Mr. Lau strongly believes that a more integrated approach can be developed to support Singapore designers, particularly in changing the fundamental mindsets of the local consumers in Singapore.

According to Mr. Lau, Microwave Packaging struggled, in its earlier days, to keep its products on the shelves. Furthermore, due to the low volumes manufactured, it was not cost effective for the company. The challenge faced by Microwave Packaging was not because it was launching a new product in Singapore, but more so to convince its potential local customers why they should show equal, if not more, support for a locally-designed product. In overcoming the challenge, Mr. Lau had sunk much investment in developing the product and keeping them in the market in order to keep the business going. The motivation and perseverance to continue the business came from his personal strong belief in the product, particularly in its quality and functionality.

His unwavering pursue subsequently paid off when the products offered by Microwave Packaging began to receive recognition as it attained several awards including the World Star Packaging Award from the World Packaging Organisation in 1999. With support from the various media promotion of its product, many interested

companies started to approach Microwave Packaging to better understand the functionalities of the packaging and how it can benefit their customers.



Samples of Microwave Packaging products

As a result, many foodservice providers and large organisations in recognising the benefits which the *TicTob*[®] box can offer, as compared to the conventional styrofoam box available in the market, began to place their orders with Microwave Packaging. The extent of the company's market reach in Singapore can be demonstrated through its contract with the SAF where out-ration meal packaging boxes used to be styrofoam boxes. Moreover, the SAF contract secured has since given rise to many smaller ones. Due to the quality and design of the food packaging that was provided to SAF, some National Servicemen who started their own food business after completing their national service, even remembered Microwave Packaging and are now its customers. In this regard, with its unique design and award-winning features, the *TicTob*[®] box has gradually gained recognition, and has subsequently gained some market share in the local food packaging industry.

Furthermore, many customers who have switched to Microwave Packaging products, have seen their businesses increase up to three-fold in the few years after they have switched product. With its ability for takeaway meals to be kept warmed, refrigerated and microwaved in the same box, Microwave Packaging products offer convenience and quality assurance to end-users, enhancing the appeal of the product as well as end-user satisfaction, which in turn supported these foodservice customers to increase their sales - making their food product the preferred choice of the end-users.

With its products gaining popularity, Mr. Lau is now able to further invest in R&D to strengthen its environmental commitment by incorporating eco-friendly and green innovations in its design, e.g. using green-labeled and recyclable materials for the packaging. It has also added re-usable feature, which allow end-users to re-use the food containers, in the design of the new ranges of products.

4. Sustaining the Design Efforts

Forging ahead, in order to maintain the design efforts of the local designers, Mr. Lau pointed out that a more integrated approach is necessary. With regard to hardware, Singapore has put in place an excellent intellectual property (IP) regime where Microwave Packaging has greatly benefited as new invention(s) such as those from his company, are well-protected under the law. To this end, as his products were gaining popularity, he made sure that those designs would remain proprietary to Microwave Packaging by applying for patents – concept patent and product patent. The product patent allows the box design and its specifications to be protected from

undesired plagiarism and duplications. On the other hand, the concept patent, in this case, is the design idea of using product as a publicity tool for the purpose of advertisement. The concept patent has thus allowed for an additional function as an advertising and media tool e.g. sharing of information, publicity of events, etc. Through such innovative concepts, food vendors may potentially increase its source of revenue through advertisement, resulting in reduced cost for its customers as they are now being subsidised by third party advertisers.

Nevertheless, to encourage local companies to take up design as one of its business strategies, it is equally important that, on the demand side, local consumers must also learn to appreciate and support locally-designed products. “Singapore is not a small market, and we have many affluent people here”, Mr. Lau exclaimed. In this regard, Mr. Lau emphasised that there is still much work to be done particularly in managing software issues such as changing the fundamental mindset of most consumers in Singapore.



Advertisements and publicity of public events printed on the TicTob[®] boxes

In the longer term, for design efforts to remain sustainable, both companies and consumers have important roles to play, because without the support of each other, most companies may then choose the less challenging strategy by simply continuing to compete based on prices.

“The spirit, the motivation and the purpose of design is to make the whole design process holistic...” – Mr. Leonard Lau, Managing Director of Microwave Packaging
