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A Business Report on Development Strategic of Impossible Foods Inc. in Hong Kong

1. Introduction

Bill Gates, the co-founder of Microsoft and co-chair of the Bill and Melinda Gates Foundation and chair of the investment fund Breakthrough Energy Ventures, described, "All rich countries will move to synthetic beef. Foodies and gourmets would get used to the new meats which will be tasted even better over time" (James Temple, 2021; Beef Central, 2021). "Impossible meats were designed to compete in the 1.7 trillion global meat and dairy market in which eaters want to eat meat weekly and even daily," said David Lee, the CFO of *Impossible Foods Inc.* (David Lee and Joshua Katz, 2019). These two quotes illustrated the business of the technology-based Silicon Valley unicorn.

After entering the model era, the food system of human society has accounted for a significant part of climate change. Livestock solely is responsible for 14.5% of global greenhouse gas emissions (Kowitt Beth, 2017). In these few decades, the food industry has applied technological innovation to evolve agriculture, food manufacturing, and food processing towards higher levels of food safety, quality, and environmental sustainability (Tziva, M. *et al.*, 2020). In the Silicon Valley of the San Francisco Bay Area, technologists believe only technological breakthroughs can help tackle the issues. They have worked on the new term *meatmaking* to evolve the meat food market, whose market value is over US\$200 billion, solely counting the US (Kowitt Beth, 2017). This case studies the business expansion strategies of one of the pioneers, *Impossible Foods*, in Hong Kong.

2. Company Background

In 2011, Patrick O'Reilly Brown, a biochemical scholar at Stanford University in US California, established *Impossible Foods Inc.* with the idea "to make a product that current consumers of meat and dairy prefer to what they are getting now" (Sally Ho, 2021; Deshong, A., 2019). Before entering the field of technology-based meatmaking, Prof Brown was a genes expert who participated in developing the DNA microarrays and founding of Public Library of Science for cancer. In 2009, Prof Brown organised an academic conference to promote awareness and reductions in meat consumption. Unfortunately, such an academic approach made little noise, let alone accountable impact, in neither the industries nor society. This result pushed Brown to commit to science and technology to productise plant-based meats and found *Impossible Foods* (Deshong, A., 2019).

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"We started out by basically asking how does meat do what it does – how does meat work... It is the same way we did in biomedical research, but not the mindset in the food world at all," said Brown in an interview with Fortune (Kowitt Beth, 2017).

Unconventionally, *Impossible Foods*, as a food company, started with gas chromatography and mass spectrometry to study the components contributing to the taste, smell, mouthfeel and outlooking of beef (Deshong, A., 2019). *Impossible Foods* developed its key ingredient, heme, the iron-rich, soy-derived compound meat protein. It is also the molecule accounting for the 'bleed' look and feel. The *Impossible meats* (Louis Chan, 2020). The company demanded huge funding to fuel the lengthy research and development. By 2014, they raised US\$75 million from venture capital funds. By 2016, heme was affirmed by the US Food and Drug Administration (FDA). Their first product, the *Impossible Burger*, was first launched in 2016 and began mass-production in California in 2017 (Deshong, A., 2019). *Impossible Foods* positions itself as a food manufacturer and, more importantly, a Sustainable Development Goals (SDG) focused company to reduce natural resource consumption and greenhouse gas emissions to make the global food system sustainable (Impossible Foods Inc., 2020). Nowadays, *Impossible Foods*' plant-based meat products are available in over 30,000 restaurants around the world (Heidi Nam & Invest HK, 2021). Market research reports *Impossible Foods* recorded US\$148 million in revenue and 500 employees in 2019, which are four times and six times the figures in 2014, respectively. The company has filed 36 patents since 2019 to provide its innovations (IncFact, 2022).

	Milestones
2011	Patrick O'Reilly Brown founded <i>Impossible Foods Inc.</i>
2014	<i>Impossible Foods</i> raised US\$75 million in venture capital funds from <i>Khosla Ventures</i>, <i>Google Ventures</i>, Bill Gates's <i>Gates Venture</i>, Hong Kong tycoon Li Ka-shing and his <i>Horizons Ventures</i>.
2015	<i>Impossible Foods</i> refused Google's attempt to acquire in a reported amount of US\$300 million. <i>Impossible Foods</i> raised another venture capital investment of US\$108 million.
2016	<i>Impossible Foods</i> first productised plant-based meat, the <i>Impossible Burger</i>, was served in the Manhattan restaurant Momofuku Nishi and later on in the Jardiniere and Cockscomb restaurants in San Francisco and Crossroads in Los Angeles

2017	• Impossible Foods started the large scale production plant in Oakland, California US. • The company's annual revenue reached US\$100 million.
2018	• The FDA passed Impossible Foods' heme ingredient as "generally recognised as safe". • Impossible Foods submitted a thousand-page long comprehensive report to the FDA, which eventually reaffirmed the safety of the heme ingredient. • Impossible Foods set up its first Asian office in Hong Kong, and later on Singapore.
2020	• A measure of the financial traction, <i>Impossible Foods</i> raised another US\$500 million

Fig 1: Summarising Key Milestone of the *Impossible Foods* (Deshong, A., 2019; Louis Chan, 2020)

3. Company Internal Analysis Using Value Chain Analysis

Scholars in Harvard Business School proposed the Value Chain Analysis model (VCA), as a tool to audit the internal activities of a business (Harvard Business School). The term value chain illustrates the way of analysis that a business is viewed in the form of a chain of activities transforming inputs of the business process into outputs that customers value. The VCA describes how individual activities or processes in a business chain up and contribute together to create and deliver value to customers, in terms of products with differentiated features, at lower prices and/or meeting the customer needs in a shorter time. The tool allows us to identify the business's internal strengths and weaknesses by going into the business. Each event happens in the business rather than looking at certain organisational dividing lines or financial records (Pearce, J.A. & Robinson, R.B., 2003).

The first step in carrying out a VCA is identifying the activities in the business, which are classified into two major groups supporting activities and primary activities. Following the conventional VCA model, we audit Impossible Foods' supporting activities in terms of general administration, human resource management, technology development and procurement. The studies are the primary activities, logistics, operations, marketing and sales, and service. Fig 2 summarises the analysis.

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General Administration - Strong passion and commitment to environmentally sustainable issues (Deshong, A., 2019) - Targeting human behaviour on the choice of food to create the blue ocean for their product (David Lee, Joshua Katz. 2019; Deshong, A., 2019; Megan Poiniski, 2020) - Strong corporate image as a scientific innovation for the better good of the environment and human health (Deshong, A., 2019) - The science-based solution for tackling food and environmental issues attracts high-quality investors and creates a snowball effect (Deshong, A., 2019)				M A R G I N
Human Resource Management - Its Science-based yet idealistic business plan and operation are highly attractive for scientists to join the team (Deshong, A., 2019; Megan Poiniski, 2020)) - The scientists-led company build a strong motivation among staff for achieving innovations that they do 100 prototypes a week (David Lee, Joshua Katz. 2019) - Demonstrating commitments to the workplace with diversity and inclusion, knowledge sharing and open dialogue (Impossible Foods Inc. 2021) - Established the Employee Resources Groups, which is a long term practice to implement employee-driven campaigns in the company or the community (Impossible Foods Inc. 2021, Impossible Foods Inc. 2020)				
Technology Development - Using Science-based technology in creating the unique formula for plant-based meats, which truly captured the taste and texture of real meat (Deshong, A., 2019) - Filed 36 patents (IncFact, 2022) - Strong internal investment in product research and development (Deshong, A., 2019; IncFact, 2022)				
Procurements - Strong ability in attracting investors and suppliers, especially who suffered from the giants in the conventional meat industry (Deshong, A., 2019) - With the bargaining power and alternative resources network to reduce the production costs continuously in parallel to the growth of the market demands (David Lee, Joshua Katz. 2019)				
Operations - Patented molecular biology techniques to increase the production efficiency and cut the costs of the plant-based heme gene (Deshong, A., 2019) - Able to scale up the workforce and manufacturing plants on time to meet new demands (Deshong, A., 2019) - Zero-waste manufacturing processes (Impossible Foods Inc. 2021)	Outbound Logistics - A developed nationwide network of distribution centres (Deshong, A., 2019) - An established effective network of infrastructure and pick-ups system as a critical component in achieving zero waste manufacturing (Impossible Foods Inc. 2021)	Marketing and Sales - The gimmicky but practical innovation attracts huge media coverage (David Lee, Joshua Katz. 2019; Deshong, A., 2019) - Sales channels cover grocery stores, supermarkets, fast food stores and classy restaurants (Deshong, A., 2019; Louis Chan, 2020;) - Tailor-making sales approach in different geographic markets (Heidi Nam <i>et al.</i>, 2021) - Positioning the products as good and safe for personal and environmental health (Heidi Nam <i>et al.</i>, 2021; David Lee, Joshua Katz. 2019) - Continued to cut wholesale prices upon the building up of economies of scale (Impossible Foods Inc. 2020; Heidi Nam <i>et al.</i>, 2021)	Service - Launched the <i>Impossible™: The Cookbook</i> featuring 40 dishes from top culinary trendsetters using Impossible™ product (Impossible Foods Inc. 2020) - Organised various social activities which promoted social and SDG values while educating the customers on choosing and cooking Impossible™ products (Impossible Foods Inc. 2020) - Publishing annual Impact Reports instead of conventional business annual reports (Impossible Foods Inc. 2020)	M A R G I N

Fig 2: VCA Analysis of Impossible Food Inc

3.1 Corporate Image Development

David Lee, Chief Financial Officer of *Impossible Food*, described his most significant gain in the company as the notion of breaking the rules against a big mission (David Lee, Joshua Katz. 2019). The company has been working out breakthroughs to achieve its mission of converting human beings' consumption of meat using animals to using plants. This represents, in addition to the development of technology to transform plants into meat, *Impossible Food's* job includes the delivery of plant-based meat to the consumers with satisfied quality and experience at an affordable price. The company has been called the top environmental startup (Impossible Foods Inc. 2021). *Impossible Food* positioned itself as a company focusing on the better good of the environment and human health instead of a simple food manufacturer. In interviews and speeches of Patrick Brown, David Lee and other executives, they emphasises the environmental impact that Impossible Burger uses 95 per cent less land area, decreases 74 percent water depletion, turns aquatic eutrophication down 57%, reduces 87 percent greenhouse gas emissions and achieves zero waste manufacturing (Impossible Foods Inc. 2020; Deshong, A., 2019; David Lee, Joshua Katz. 2019). The features of the products and advancements in technologies go afterwards. This approach of packaging meat substitution as a sustainable innovation successfully differentiated *ImpossibleTM Burger* from the former generations of man-made meats, which targeted vegetarians and vegan consumers (Tziva, M., *et al.* 2020). This value of innovating for the environment and society is also successfully shared among the 500 employees. The company has the routine program *Employee Resources Groups* to support the company or the community staff-initiated campaigns, which are mostly for the better good of the environment and society. For instance, the *ImpossibleTM Bergers* tackling food and life quality of the Black community, *ImpossibleTM Pride* for improving the work environment and business processes, *Women at Impossible* for empowering women and *Los Impossibles* for promoting social diversity (Impossible Foods Inc. 2020; Impossible Foods Inc. 2021).

Technological development and scientific advancement are other core components of the company. The company illustrates a strong passion and commitment toward science and implementing innovation in a practice business committing to sustainability. The science-based yet idealistic business is highly attractive for big-name venture capitalists, such as Bill Gates, Li Ka-shing and Google Ventures (Deshong, A., 2019). This support for sustaining long term research and development is crucial for attracting new investments and, more importantly, attracting scientists to join the team to evolve production and product development. *Impossible Foods'* research and development team has been recorded delivering over 100 prototypes in a week (David Lee, Joshua Katz. 2019)

Impossible Foods successfully build up the corporate image and corporate citizenship, then make effective use of the image to identify the new-product market opportunities, achieve corporate objectives, attract investments, build up relation with interest groups, establish the corporate competency, culture the internal commonly-shared corporate value, and create the employee motivation and job satisfaction to support the continuous growth. The image and positioning have empowered the company to create the blue ocean for their products by changing the robotic purchasing behaviour of the consumers (Megan Poiniski, 2020; Deshong, A., 2019; David Lee, Joshua Katz. 2019).

3.2 Product Development

The science- and technology-enabled products are the foundation of the business of *Impossible Foods*. The company has built up a strong group of innovators working on research and development, who achieve efficient product advancement (100 prototypes a week) and high-quality goods, which have been described as truly capturing the taste and texture of real meat (Deshong, A., 2019). Scholars discussed that *Impossible Foods takes on meat's story* and remediates it for audiences through their semiotic practices (Muhlhauser, P. et al., 2021). *Impossible Foods* has raised over US\$1.43 billion in funding to support product development with its convincing science and technology foundation and achievement. The company recorded 36 patent filings as of February 2022 (IncFact, 2022). In addition to the in house development, the company has utilised the support from the players in the value chain in the food industry, who suffered from the conventional giants. This built up the bargaining power and alternative resources network to eliminate the product development and manufacturing costs to meet the market demands, notwithstanding the COVID pandemics in 2020 (David Lee, Joshua Katz. 2019; Megan Poiniski. 2020). Being entitled the Innovator of 2020, *Impossible Foods* announced their Impossible Milk prototype and launched a recruitment initiative to double up the research and development teams in late 2020 (Megan Poiniski. 2020) to reinforce their commitment to developing the stage of art products.

3.3 Operation and Distribution

On top of the science of inventing new products, *Impossible Foods* has also worked on technology to enhance business operation. On the productivity side, the company has patented numerous molecular biological technologies to increase the production yield and cut down costs for planting the heme gene, the key ingredient of *Impossible Burgers*. On the sustainability side, echoing the corporate image, the company has developed and introduced new technologies and techniques to achieve zero waste manufacturing processes. For instance, the adoption of the reverse osmosis method in reusing water in production; the Heme Water scheme to track water footprint in heme production to balance

out the water footprint of using cattle to produce meat; and the Zero Waste scheme to reduce landfill waste resulting from the manufacturing, logistics and business operation. Moreover, Impossible Foods has established a system in scaling up the workforces and production plants and streamlined an influential network of logistics infrastructure and goods pick-up to meet the rapid increase in market demands (Impossible Foods Inc. 2020; Impossible Foods Inc. 2021).

3.4 Marketing, Sales and Consumer Experience

In parallel to the corporate image, Impossible Foods has successfully shaped the Impossible Burger and other new coming products to be gimmicky but green, tasty and healthy. Despite the groundbreaking product invention by nature, the company packaged their announcements into engaging media stories. The broad collaborations with grocery stores, supermarkets, fast food stores and classy restaurants made these business actions close to the consumers (David Lee, Joshua Katz. 2019). The announcements of cutting down wholesale prices upon the establishment of economies of scale have projected corporate social responsibility in parallel to attracting the attention of new customers. The company tailor-made sales approach in different geographic markets. To open up their Hong Kong market, they have partnered with local cooks and chefs to make traditional local meat dishes with Impossible meats (Heidi Nam et al., 2021). Besides, actions like launching the *ImpossibleTM: The Cookbook*, presentations of annual reports as impact reports, and organisation of social activities have brought the company close to the local community (Impossible Foods Inc. 2020; Impossible Foods Inc. 2021). Patrick Brown reported that seven out of ten customers are repeat consumers of Impossible Food (Megan Poinski. 2020), which supports the company's value has been converted to the customers. The marketing campaigns have been valuable and effective in penetrating the innovative products to the market and getting the market response directly. "The business model of Impossible Food is they have viewed retail and direct to consumer as one of the main models. The go-to-market strategy means they started directly with consumers. They have set a new bar for how food companies can get their products to consumers, but it has also inspired the next generation of startups", Market analyst Harini Venkataraman remarked (Megan Poinski. 2020).

4. Environment Analysis with STEEP Model

Scholars discussed that the *Impossible Burger* and its competitors, like *Beyond Meat* and *Omni Food*, are the third generation of meat substitutes, which are much more mature and welcomed by the market than before (Tziva, M. et al. 2020; Friend, T.P. 2019). Apart from the internal capacity and structure, a host of external factors influence the companies. Here the general environment drivers determining the development of the plant-based meat industry are quickly analysed with the STEEP Model.

Society • Industrial animal agriculture has been exploited to meet the ever-growing protein demand with the growth of the world population (Choudhury D. <i>et al.</i>, 2020) • Increased consumer concern about healthier and green food options (Choudhury D. <i>et al.</i>, 2020; Tziva, M. <i>et al.</i> 2020) • Increased consumer acceptance of meat alternatives in Asia (Choudhury D. <i>et al.</i>, 2020) • Worry about genetically modified foods (Friend, T.P. 2019) • COVID pandemic (Impossible Foods Inc. 2021)
Technology • Advancement of technology in replicating the taste, texture, colour and nutritional profile of meat (James Temple, 2021; Beef Central, 2021; Choudhury D. <i>et al.</i>, 2020) • Cell growing technology (Choudhury, D. <i>et al.</i> 2020) • Climate-smart technologies for sustainable agriculture (Khatri-Chhetri, A. <i>et al.</i>, 2017) • Advanced transportation and global supply chain (Jokiniemi T., <i>et al.</i>, 2016)
Environment • Over-consuming of natural resources in animal agriculture (Choudhury, D. <i>et al.</i> 2020; Impossible Foods Inc. 2020; Friend, T.P. 2019) • Controllable and sustainable production to reduce waste, greenhouse gas emissions (Deshong, A., 2019; Friend, T.P. 2019)
Economy • Exponential growth in international venture capital investment (Khofiz Shakhidi, 2021) • Exponential growth in plant-based meat market (Choudhury, D. <i>et al.</i> 2020) • Increased social investment in research and development and patents (Lap-chee Tsui, <i>et al.</i>, 2020)
Politics • Food safety regulation of government authorities on novel foods, e.g. US FDA, Singapore Food Agent, EU (Deshong, A., 2019; Choudhury, D. <i>et al.</i> 2020) • The argument of plant-based ingredients vs chemical additives (Choudhury D. <i>et al.</i>, 2020) • Eco-organisations' increased influences on sustainability-related regulation on agriculture (Friend, T.P. 2019)

Fig 3: STEEP Analysis of Drivers of Plant-based Meat Industry

In recent years, rising societal factors have accelerated the development of meat substitutes or plant-based meat products. The early generations of meat substitutes specifically served the vegetarians and vegan consumers market, who purchased the products as a commitment to their notions of no meat or no killing. They created a very niche market, an experimental site for building up the scientific and economic foundation for plant-based meats. After the livestock supply chain crisis in the early 2000s, an increasing number of policymakers and scientists brought in the concept that the wider diffusion of plant-based meat can impact environmental sustainability (Tziva, M. *et al.*, 2020). More and more consumers are concerned about personal and environmental health issues in their food choice. Adding the pressure of the growing world population on protein demand and the worry of genetically modified technology boosting animal agriculture's productivity, scientists and investors have increased their commitments and contributions to the plant-based meat market (Choudhury, D. *et al.* 2020; Friend, T.P. 2019).

Technology advancement has also accelerated the market penetration of plant-based meats. The storage, transportation and Internet of Things technologies enable the speedy distribution of the products from the production plant to everywhere around the world with real-time monitored delivery conditions (Jokiniemi T. *et al.*, 2016). The highly automated process has advantages in production, storage and distribution over conventional animal agriculture and food production, even under the COVID19 pandemic (Impossible Foods Inc., 2021). On the other hand, new technological inventions and scientific discoveries have enabled manufacturers to replicate animal meats' taste, texture, and colours (James Temple, 2021; Beef Central, 2021; Choudhury D. *et al.*, 2020). Plant-based meats contain nutritional profiles, like vitamin B₁₂ and zinc, in amounts equal to or even more significant than red meat and poultry. These nutrients can hardly appear in a pure plant meal (E. Gelsomin, 2019). This added value has helped gain consumers' acceptance, especially in the Asian market. Simultaneously, the growth of cell-growing technology and climate-smart technology for sustainable agriculture have created a new competition for plant-based meats.

There are other general environmental factors favouring plant-based meat development. For instance, the fact of over-consuming of natural resources, government policies and community heat in waste and greenhouse gas reduction (Friend, T.P. 2019; Deshong, A., 2019; Choudhury, D. *et al.* 2020). Animal agriculture has been disadvantaged. Moreover, venture capital activities recorded exponential growth in the last decade. Solely in the US, the venture capital investment value increased from US\$26 billion in 2010 to over US\$130 billion in 2020 (Khofiz Shakhidi, 2021). Solely the plant-based meat market accounted for US\$2.1 billion of investment in 2020 (Abirami Durai, 2021). In parallel, social investment in research and development, technology invention, and patent filing are highly active worldwide (Lap-chee Tsui, *et al.*, 2020). These two factors have strongly boosted plant-based meat development, as it is valuable both scientifically and economically.

There are politics resisting, or safe-guiding, plant-based meat. Authorities have been argued that the new ingredients in plant-based meat, such as the heme in *Impossible Burger*, should be natural elements for food or chemical additives (Choudhury D. *et al.*, 2020). Most authorities, like the US FDA, Singapore Food Agency and European Commission, set up new food safety regulation specific for these novel food (Deshong, A., 2019; Choudhury D. *et al.*, 2020). The Novel Food Regulations dictate very expensive and time-consuming authorisation procedures for the introduction of foods and ingredients into the markets (Tziva M., *et al.*, 2020). Even in small countries and regions in Asia markets where there may not be a dedicated set of regulations, the authorities would mainly require

the food suppliers to be qualified in US FDA and EU systems. The regulations have built up a formidable barrier to the development of meat substitutes.

5. Industry Analysis with Porter's 5 Force Framework

This part of the report would zoom in on the industry environment issues impacting *Impossible Foods'* development in the Hong Kong market by adopting the concept of Michael Porter's 5-Force Framework.

5.1 Threat of New Entry

Impossible Foods has a strong resistance against new entries. The entry barrier of the plant-based food industry is high in terms of the research and development investment to make the products launched. *Impossible Foods* raised US\$750 million, valued at US\$2 billion, in May 2019 after the Series E round of investment (Sally Ho, 2021). Afterwards, they received two more investments with total value of US\$700 million in 2020. Analysers have measured 71% of *Impossible Foods'* US\$148 million revenue went to the cost of goods sold, with the majority contributed to the Research and Development (IncFact, 2022). Its rival *Beyond Meat* raised US\$140 million and went IPO in 2019 as a way to support product development (Sally Ho, 2021). Besides, the products of plant-based meats are highly expert- and knowledge-based. The products are built on the founder Prof Patrick Brown's live-long scientific science of biochemistry. *Impossible Foods* have well protected its intellectual properties with trademarks and patents. The company has filed 59 trademarks and 36 patents worldwide. These figures and scales can hardly be achieved by newcomers, especially in the Asia markets. When zooming in on the Hong Kong, *Impossible Foods* has developed its brand preferences with its international branding of innovation and the Hong Kong tycoon Mr Li Ka Shing as one of the angle investors (Louis Chan, 2020).

5.2 Threat of Substitution

As a substitution of conventional animal-based protein, *Impossible Foods'* product also faces the threat of substitution. One group is the other plant-based meat companies. *Beyond Meat*, *Impossible Foods'* rival also from California US entered the Hong Kong market earlier in 2015 under the introduction of one of the investors David Yeung. *Beyond Meat* Products have been sold in Yeung's Hong Kong plant-based grocery store and cafe *Green Common* since then (Ryan Swift, 2019). In terms of nutrition content, *Impossible Burger* and *Beyond Burger* are very similar. In a serving size of 113g, *Impossible Burger* accounts 240 Calories, 14g fat, 370 mg Sodium, 19g protein; *Beyond*

Burger 250 Calories, 18g fat, 390 mg Sodium, 20g protein. The retail prices on a major supermarket's online store in Hong Kong are HK\$5.5 per oz and HK\$ 6.2 per oz for Impossible Burger and Beyond Burger. The retail prices per unit weight are reported to be the same, US\$0.749 per oz, for both plant-based burgers (Sally Ho, 2021). *OmniFoods* is another significant competitor in the market. The *OmniFoods* is founder by David Yeung of Green Monday. The vegan meat products are more localised to the Chinese market. The company is selling six types of vegan meats in Hong Kong, and the *OmniPork* was reported as the most popular plant-based protein in Asia markets (Sonalie Figueiras, 2021). All *Impossible Foods*, *Beyond Meat* and *Omni Foods* have partnered strategically with local restaurants and retail stores in Hong Kong to serve the markets in the form of dashes on the restaurant menu and recipe ingredients. The cost of change for consumers is low.

5.3 Bargaining Power of Suppliers

The key raw material for *Impossible Foods* is soybean. In the global soybean market, US and Brazil together supply 80% of soybean. The US soybean export to China accounted for 31% of the country's production volume. After the tariff in 2018, the soybean suppliers in the US had to solicit new customers for the unsold production. This value was reported 12,102,000 metric tons of soybean in year 2019 by the US Department of Agriculture. The report also described the tariff that made soybean prices in the global market drop by 7%. When comparing to the prices at US\$500–\$600/metric ton in 2007, prices at the US Gulf ports fell to below \$350 per metric ton in 2019 (Fred Gale, *et al.*, 2019).

5.4 Bargaining Power of Consumers

Section 5.2 discussed the alternative goods of *Impossible Foods*' vegan meat available in the market. The objective measurements of the meat substitutes showed no significant differences. In Hong Kong, there is not a dominating product in the plant-based meat market. The cost of change for consumers is low, and the market still has plenty of room for development. Consumers are highly sensitive to prices, especially when plant-based meats are still new to the market. Consumers are willing to try (Victoria Oei, 2020). As the primary consumers are highly health concerned, they are sensitive to nutrient contents. In comparison with *Beyond Burger*, *Impossible Burger* contains various minerals and vitamin B₁₂ which are absent in its competitor.

5.5 Competitive Rivalry

Hong Kong is a city as the gate to the Greater Bay Area and Greater China. It is an effective place to introduce, experiment and show off novice products. There is an excellent potential for plant-based meat substitutes and an effective springboard for expanding the market to nearby lucrative areas. *Together with the rivals Beyond Meats and Omni Foods, Impossible Foods* are the major plant-based meats currently available in the Hong Kong market (C. Yuen, A. Hernandex, 2020). There are over 600 supermarkets, 1,500 grocery stores and 16,000 restaurants serving the 7 million population in Hong Kong (CSD, 2022; MingPao, 2021; Sindy Wong, 2021). The switching costs among these three companies' products are not high, as people can freely change their food choice daily or even meal-ly. There are no noticeable differences in the nutrient contents of meatless protein foods. Vitamin B₁₂ and minerals content is the advantage of *Impossible Food*, but it uses GMO soybean to produce the key ingredient heme (Lana Bandoim, 2019; Sully Barrett, 2020). Besides, pork is the most preferred and most commonly used meat choice in Chinese cuisine and with the most tremendous potential in Hong Kong, but *Impossible Foods* has not yet launched its *Impossible Pork* in the city (C. Yuen, A. Hernandex, 2020; Anon, 2020). These are the shorts of *Impossible Foods* with the rivals in the Hong Kong market.

6. Strategy Generation and Selection for Impossible Food in Hong Kong

Plant-based meat companies have selected Hong Kong as their first Asian or even the first overseas market (C. Yuen, A. Hernandex, 2020). *Beyond Burger* was launched in Hong Kong in 2015. *Impossible Burger* came late in 2018. On top of the discussed internal and external factors, this part of the business report analyses the generation of feasible strategies and recommendations of strategies for *Impossible Foods* to expand its market share in Hong Kong.

6.1 SWOT Analysis for Impossible Foods in Hong Kong

Strengths, Weaknesses, Opportunities and Threats – SWOT Analysis has been adopted in strategy planning to investigate multiple scenarios for a long. The SWOT Analysis integrates internal and external factors and helps management develop SO strategies, WO strategies, ST strategies and WT strategies, and pinpoint the one(s) that would best fit the company's current scenario.

Strengths Company Size and Competency The company size is larger than average. The company policies and brand image attract talents to join the team. Strong Capital and Attractiveness to Investors The company raised US\$1.5 billion in a few years and kept the trend which indicates investors believe in the company's strong growth potential. Growth The company keeps growing in revenue, market size and product lines. Intellectual Properties The company has filed 59 trademarks and 36 patents. Marketing Strategy The company has built up a strong and positive image as an innovator for the betterment of humans and the environment. Product Quality The company products contain vitamin B₁₂ and minerals that are rarely found in other synthetic meats.	Weaknesses Potential Health Risk Science research show potential linkage between plant-based protein to disease, like osteopenia, anaemia, pancreatic insufficiency, gall bladder malfunction, lactose intolerance, etc. (Thakur, A. 2019). The ambition to replicate hamburgers' red juicy centre and meaty taste resulted in heavily processed and high saturated fat in the meatless burger (E. Gelsomin, 2019). Unfilled Gap with Animal Meats The company's technology makes the meat substitutes close to meats but with exactly the same taste and texture (Thakur, A. 2019). Pricing The prices of <i>Impossible Foods's</i> products are still higher than some of its competitors, e.g. OmniFoods (C. Yuen, A. Hernandex, 2020), let alone meat products (Piper, Kelsey. 2020).
Opportunities Large market opportunity Annual restaurant receipts in Hong Kong are US\$16 billion (Sindy Wong, 2021) Government Policies The Chinese government announced new dietary guidelines to encourage the restriction of meat consumption by the year 2030 (Thakur, A. 2019) Traditional Vegetarian Culture of Chinese There is a common tradition for Chinese in Hong Kong to be vegetarians on particular calendar dates, e.g. the 1st and 7th of each month of the Chinese calendar	Threats New Entrants Apart from <i>Beyond Meats</i> and <i>Omni Foods</i>, there are new joiners to the synthetic food market, including startups and well-established firms (Thakur, A. 2019; Victoria Oei, 2020). This indicates that the entry barrier is not sufficiently high to keep competition low. Anti-GMO Campaigns The production of heme is based on soybean plants, of which about 95% in the US are genetically engineered. The company can hardly get rid of GMO soybean, but the impact of GMO food on humans and the environment is still being debated (Sully Barrett, 2020).

Fig 4: SWOT Analysis of Impossible Foods in the Hong Kong Market

The former sections discussed the internal strength of *Impossible Foods*. It successfully built up a strong company profile regarding company size, competency, capital and growth projection. The company developed a science-based product line with intellectual properties protected by trademarks and patents. The unique and original formula of heme has brought advantage to the nutrition facts of the *Impossible Burger* and other products. The high-tech and environment concerning brand image has benefited the sales and marketing of products and created attractiveness to talents and investors.

However, the longer *Impossible Foods* has been established and *Impossible Burger* has been launched in the market, the more weaknesses of the company have been pointed out. Soy allergy has inhibited

the growth of the synthetic meat market. Research has also described the potential linkage of plant-based protein to several diseases, including osteopenia, anaemia, pancreatic insufficiency, gall bladder malfunction, lactose intolerance and vitamin deficiencies (Thakur, A. 2019). Scholars at Harvard Medical School explained synthetic meats contain significant amounts of protective plant compounds, i.e. high saturated fat content (E.Gelsomin, 2019).

Although the reported retail and wholesale prices of *Impossible Burger* are similar to *Beyond Meat*, Market research has indicated that *OmniFoods* gets a significant advantage on prices in Hong Kong (C. Yuen, A. Hernandex, 2020; Sally Ho, 2021). In 2020, *Omni Pork* is ever cheaper than freshly slaughtered pork in Hong Kong, while *Impossible Burger* is more expensive than meat products (C. Yuen, A. Hernandex, 2020; Piper, Kelsey. 2020). In addition to the prices, there is still an unfilled gap between Impossible Burger and animal meats (Thakur, A. 2019). This is the downside for *Impossible Burger* when competing with animal meat products.

Thanks to its international food service profile, open-minded consumers and popularity among tourists, Hong Kong has been called the culinary capital of Asia for decades. Foodies and residents of the city stick to the Chinese cuisines and also look forward to overseas innovations. The city has been recorded with 11 of Asia's 50 Best Restaurants and 69 Michelin starred restaurants in 2021, among its 17,000 food and beverage providers. Before the COVID pandemic, restaurant receipts reached US\$1.6 billion per year (Sindy Wong, 2021). By mid-2020, *Impossible Foods* was available in only 450 restaurants in Hong Kong plus its neighbour Macao (Louis Chan, 2020). Research by *DuPont Nutrition & Biosciences* (Victoria Oei, 2020) described that 75% of consumers in the Asia Pacific regions are willing to choose plant-based protein when paying similar prices to meat. The research also projects a 25% increase in the plant-based meat's market value over 2021-2025, on average number of cities in Asia Pacific, while celebrity endorsement would further boost the growth. On the policy side, the government of mainland China announced new dietary guidelines to encourage the restriction of meat consumption by the year 2030 (Thakur, A. 2019). Integrating the trend that the Chinese increasingly intend to consume plant-based meat under the concern of health and sustainability (Victoria Oei, 2020) and as a forced option on the traditional vegetarian calendar dates, the market potential in Hong Kong is huge as the first overseas market for many synthetic meats.

More newcomers are joining the plant-based protein market. Apart from the US rival *Beyond Meat* and Thai-made *OmniFoods*, there are synthetics meat options from South Korea, Singapore and Sweden. Like Schouten Europe and DuPont Danisco, big names have not yet but are planning to

enter the Asian market with Hong Kong as a strategic market (Victoeria Oei, 2020; Thakur, A. 2019). The entry barrier is not high sufficient to keep competition low. Startups are also on the way to the market, for instance, *Hong Chichi* from China, *EVO Foods* from India, *DevotionFoods* from South Korea and *Ento* from Malaysia (Yue Wang, 2021). Moreover, Anti-GMO (Genetically modified organisms) campaign would be another threat to *Impossible Foods*. The US synthesising and manufacturing processes of heme in Impossible Burger are highly dependent on the local soybean supplier, which is about 95% genetically engineered (Sully Barrett, 2020). Although the debate is still ongoing on the impact of GMO food on humans and the environment, this would be a factor pushing consumers to the various alternatives in the market.

6.2 SO Strategies

The strong company profile is the greatest asset and competitive advantage against its rivals. Finance analysis illustrated that *Impossible Foods* was close to a raise of another US\$500 million in late 2021 to early 2022. By then, it would value at US\$7 billion and overtake *Beyond Meat* (John Reynolds, 2021). Choudhury D. *et al.* 2020 described that nutritional value, intellectual property, marketing, and branding play significant roles in the value chain mapping of plant-based meat alternatives. These are the strengths of Impossible Foods. The company should make good use of these advantages to open and gain the potential market in Hong Kong. The large capital size of the company would enable it to conduct marketing campaigns on a large scale to educate the market. The US-developed technology with investment endorsement of the local tycoon Mr Li Ka-shing would help attract the trust of consumers in the Hong Kong market, which would significantly influence consumers' choice of products. Besides, *Impossible Foods* should form strategic partnerships with chain-store restaurants and fast-food stores. The US brands can be good partners, such as the US burger brand *Five Guys*, which are planning to expand its business in Hong Kong after opening their first two stores in the last quarter in 2019 (Sindy Wong, 2021). Its close partner in the US, the Burger King, has not established a promising network in Hong Kong. Strategic partnership can be a win-win collaboration, especially facing the rival alliance of McDonalds and OmniFood, and Green Monday and Beyond Meat.

6.3 WO Strategies

Consumers are commonly sensitive to prices in their decisions on trying new products of meat alternatives (Victoeria Oei, 2020; Piper, Kelsey 2020). *When compared with its alternatives in prices, Impossible Burger is in a disadvantage. Impossible Foods* cut down its wholesale price by 15% in

early 2017 (Kowitth Beth, 2017) and March 2020 (Heidi Nam & Invest HK. 2021), respectively, and would be managed further reduction upon achieving economies of scale (Anon, 2020; Kowitth Beth, 2017). Management of numerous plant-based meatmakers agreed that the price is closed linked to scale (Kowitth Beth, 2017). The speedy development of the market would be crucial for *Impossible Foods* to build up its scale in Hong Kong. The positive reputation would easily radiate to the Greater Bay Areas and greater China. In such a developing market, the faster the action can generate a higher market share. *Impossible Foods* should launch its *Impossible Pork* in Hong Kong as soon as possible, as pork is the most popular and commonly preferred choice of meat in Chinese cuisine (Caroline Yuen, Alicia Hernandez, 2020). In recent years, the retail price of freshly slaughtered pork in Hong Kong has been recorded a hefty increase because of African swine fever, poor supply from mainland China and panic purchase under pandemic (L. Lew, E. Cheung, 2019; L.K. Sum 2020; S.Zhao, 2022). An on-time launch of *Impossible Pork* as an alternative at a reasonable price would be easily favoured among consumers in the market and lock the market share, especially under the current pandemic and upcoming post-pandemic economic situations.

6.4 ST Strategies

One of the most significant threats to Impossible Foods in the Hong Kong market is the newcomers to the markets. Impossible Foods can acquire its upcoming competitors to secure its market position, add new resources, and acquire new products and innovations. Microsoft is an example that has adopted such strategies and acquired 111 companies for the enhancement of their product lineup and research and development capability in these ten years (Microsoft Corp, 2022). Given the capital size, image and attractiveness to investors, horizontally *Impossible Foods* can merge small plant-based meatmakers to rapidly strengthen its product lines and eliminate new entrants to the industry. Vertically, as a longer-term strategy, it can acquire a soybean farm to produce non-GMO soybean plants to support its heme production.

6.5 WT Strategies

Impossible Foods is a technology-based company selling scientific innovations. It should also utilise a scientific strategy to reduce internal weaknesses and defend against external threats. It can leverage its internal research and development to conduct scientific research on defending the linkage between Impossible Foods products and GMO soybean with potential health risks. In a longer term, it can formalise a partnership with local universities and research institutions to carry out continuous strategic research partnerships, in terms of research sponsorship, scholarship and even establishment

of research laboratories. In order to quickly respond to the market, it can be a very similar approach to their annual Impact Reports and Employee Resources Groups discussed in section 3 of this report, which packages the soft sale of the company's concept, image and products as social caretaking and education campaigns. The company can carry out social campaigns in healthcare to project the positive impact of Impossible products on human body. To be better accepted by the Hong Kong Chinese consumers, the company can engage Chinese medicine practitioners to support the effect of its product on body health, especially those related to the diseases of affluence like Cardiovascular diseases, diabetes and asthma.

7. Barriers Resisting the Implementation of the Strategies

Strategy implementation is the action phase of the strategic management process, after audits and strategy formulation and analysis. Strategies have to be translated into guidelines and be incorporated into the daily operation. Scholars illustrated that management and organisational realities and strategies integration approaches are two critical factors for strategy implementation (Trigeorgis, L. & Reuer, J.J., 2017).

7.1 Management and Organisational Realities Barriers

The SWOT analysis in Section 6 discussed that *Impossible Foods is the leader in the plant-based meatmaker industries regarding company value*. It has the required capital, capacity and competency to open and secure a sizeable portal of the Hong Kong market, which can later be radiated to the greater Chinese market in the Asian Pacific area. The keyword is "speed" to win the partnership and loyalty of distributors and buying habits of consumers. Speedy action can be rendered as the commitment to the action, which can be presented as a dollar sign in investment. *Impossible Food* is still a private company that the shareholders and early investors have enjoyed huge profits thanks to the successful growth of the business. They are doing well in the primary US market. Their willingness and commitment to invest in new geographical markets are in doubt. Besides, the private company is reported to list on the stock market in the US within the year 2022 (Anirban Sen, Joshua Franklin, 2021; John Reynolds, 2021). The personal interests of shareholders, influence from strategic investors, and competition between the US and China government would affect *Impossible Foods'* commitment and speed of action in taking up the market share in Hong Kong. The company management should have a clear projection that Hong Kong is a small market in terms of geographical size, but it is the gateway to the China market and showcase facing the entire Asia Pacific market.

Such vision and profit projection would help union the shareholders' commitments to the strategies in developing the Hong Kong market.

Besides, *Impossible Foods'* office in Hong Kong should not be only focused on promotion and sales. The strategies mentioned in section 6 are mostly science-based and partnership-based. The company should set up an organisational structure of research and development in Asia, market communication and partnership development. Such an approach would help reduce the potential false decisions because of cultural differences and win the trust of local consumers with localised proofs of product quality.

7.2 Strategies Integration Barriers

Educating the market and the general public is the conventional approach of *Impossible Foods*. The WT strategies advised in section 6.5 require a similar approach for implementation. However, the rise of the concept of the betterment of human health is added to the traditional environmental impact focusing method. This is not easy to share the newly added company value among the entire employee group. *Impossible Foods* can split a dedicated unit to coordinate the internal promotion and external partnership development on healthcare focuses. A new chapter for healthcare impact should be included in its annual Impact Report. A new sponsorship theme should be added to the Employee Resources Groups. Additional health factors should also be a new direction for the research and development works.

8. Conclusions and Limitations

Impossible Foods is a fast-growing company in an emerging industry. This report's strategic internal and external audit concludes the company successfully built up a strong profile in terms of competency, technological know-how, capital, and reputation. *Impossible Foods* has been desirable for investors and professionals since its establishment. The enterprise's well-established foundation is science-based products of plant-based meat and a corporate image of being highly environment caring. *Impossible Foods* is highly successful in the primary US market, but it entered the Asia market later than its neighbouring rival *Beyond Meat*. These two giants and numerous smaller synthetic meat companies entered Hong Kong as their first market in the Asia Pacific. This report recommends *Impossible Foods'* strategies to be a dominator of plant-based protein in Hong Kong as a point to open the great Chinese market. The strategies cover product selection, brand image refinement, distribution and research partnership, which are localised to the Hong Kong market and can be commonly shared in other markets of Chinese.

The main limitation of this report is that *Impossible Foods* is a private company, that no corporate annual report is available. The financial data is limited for detailed analysis. Besides, the information about prices of plant-based meat products in Hong Kong were collected from one of the biggest supermarket group in a single time point. The prices may vary from different stores and promotional campaigns. Besides, given the limitation of time and resources, neither primary interviews nor data collections were possible. There were no sizeable reports and surveys found on the tasting tests of the plant-based meat products in the market in Hong Kong. Therefore, the taste and texture of the products were not discussed in detail in their report.

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