

Sustaining a First Mover Advantage in a Fast-Growing Meat Substitute Market

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Abstract

With the demographic and social changes, and increasing concern for animals and sustainability of planet earth, there has been great interest in consumption of non-meat (and fish) products in the U.S. The coronavirus that impacted U.S. in Spring of 2020 and advances in delivery technology in service sectors has also accelerated the demand and market of plant-based “meats.” Beyond Meat is a first mover in the meat substitute (plant-based) market. This paper analyses whether the sustainability of first mover advantages of Beyond Meat is feasible using two frameworks. One framework shows that based on fast changes in market and technological evolutions, Beyond Meat is unlikely to sustain its first mover advantage. The second framework analysis using first mover advantage as proxy for competitive advantage comes to the same conclusion. In the long run, if managed properly Beyond Meat is likely to find itself in a duopoly market structure with Impossible Foods.

Introduction

Recently the U.S. Department of Justice started investigation of the \$213 billion meat industry for price fixing and anti-competitive practices.¹ These investigations bring to fore intense competition and fast paced changes in the meat industry. The growing size and the profitability potential of this industry has attracted another group of firms. These firms are in the so-called meat substitute market. Products in meat substitute market are commonly known as vegan, vegetarian and meat like products. The strong demand for these meat-like products have been driven primarily by four factors:² (a) desire for healthy eating, (ii) reduction in greenhouse gas emission, (iii) changing taste preferences of consumers, and (iv) desire for better animal welfare. Additionally, since the coronavirus in first quarter of 2020 allegedly originated in the wet markets of Wuhan, China, there is likely to be a growing

desire for many to avoid meats and meat products altogether.³ Some plant-based meat promoters have also opined that medical community advises that plant-based diet is integral to reducing coronavirus chronic conditions such as obesity, diabetes, and cardiovascular diseases.⁴ The coronavirus pandemic also disrupted the production of meats which allowed the plant-based meat companies to fill in some of the demand for meat. Essentially, the pandemic added to the existing demand for products that are non-meat based with the caveat that the plant-based meats have taste and texture like animal meat. Thus, in the food industry the big winners of the coronavirus are likely to be firms that produce meat substitutes. The stated and desired benefits of eating meat substitute products are: (i) to provide the health benefits of eating meat (such as protein) without the high cholesterol, (ii) prevent cruelty to or killing of animals, and (iii) reduction of greenhouse gas emissions.⁵

In the United States, Beyond Meat's Beyond Burger is ranked first in terms of sales among all plant-based meat products and considered the leading firm in the meat substitute market.⁶ At its initial public offering in mid-2019, Beyond Meat shares opened at \$66.79 and traded at \$162.46 a year later.⁷ The 143% increase in stock price is quite impressive given that the S&P 500 return was 9.7% during the same period. Indeed, the stock price of Beyond Meat has done exceedingly well and reflective of stock market's vote of confidence in the meat substitute market and in Beyond Meat's business model. However, as of now Beyond Meat is the only pure meat substitute company that is publicly listed; a privately held rival--Impossible Foods-- is likely to give Beyond Meat a stiff competition.⁸

In this paper, I will discuss and analyze whether Beyond Meat--the first mover in the plant-based meat market--is likely to retain its first mover advantage in the long run. An entity attains first mover advantage by being the first with a new product in a new market. Being a first mover bestows competitive advantage in terms of having a monopoly power in the market.⁹ A first mover can be a part of a firm's business or corporate (depending on the size of the firm) strategy since it is a calculated determination to enter a new market/industry before others do.¹⁰ Tesla is an example of a successful first mover in the fully-electric vehicle market. Being a first mover's biggest advantage is the monopoly power, which allows it to price its product without the competitive pressures from a rival. Although this may be harmful to consumers, the monopoly power for the first mover is needed since the first mover spends considerable amount of time and resources in creating and introducing its product in the market. While this is beneficial for the first mover and leads to short-term benefits, there is no certainty that the first mover shall continue its hold on monopoly power for long.¹¹

Substitute Meat Market

Characterization or definition of meat substitute market is not necessarily succinct and somewhat fluid. The market is defined by the customers and the products itself. On the demand side, there are three types of non-meat-eating consumers: vegan, vegetarian, and meat-eating consumers wishing to eat less meats or wanting to become completely non-meat eating. Vegans do not eat any animal meat including fish and do not consume any animal derived product such as eggs, milk, cheese, honey and so on. Vegetarians do not eat any animals including fish but consume other animal derived products such as milk and cheeses. The third type of consumer is one who eats meat (and fish) and simultaneously wants to reduce consumption for various reasons and is not anathema to meat like taste. The meat substitute market is most interested in getting these latter customers to purchase their offerings. While vegetarian offerings have existed for a long period of time; what has changed recently is the plant-based offerings that are meant to taste like meat. The plant-based meat like products are made of up of soybean, soymilk, soybean oil, beans, lentils, chickpeas, mushrooms, pea, wheat gluten, buckwheat, quinoa and tend to be rich in protein and amino acids.¹²

Another variant of the alternative and meat substitute is the laboratory grown meats from real animal cells. The benefits of lab grown meats is the reduction in greenhouse gas emissions (responsible for 14% of greenhouse-gas emissions worldwide), and reduction in slaughter and cramped cage like conditions associated with growing animals and livestock.¹³ The laboratory grown meat is a win-win for the meat-eaters, since the consumer gets the health benefits of protein without any of the drawbacks associated with animal meats. The startups who are leading the research and development (R&D) in animal-based laboratory grown meats are overwhelmingly based in California, Holland, Israel, and Japan and lead by JUST—a Silicon Valley startup (privately held) valued at approximately \$1 billion.¹⁴

It is to be noted that the meat substitutes are not necessarily healthier than the real meats (and fish) due to the high degree of processing required to make their taste and texture acceptable to the meat substitute customers. High sugar, salt, saturated fats, and processing of ingredients tend to reduce the health and environmental benefits of meat substitutes.¹⁵

The global meat market is worth about \$1.8 trillion and demand for it continues to increase. This is due to increasing urbanization and worldwide population growth. Interestingly, as people in countries such as China and India uplift themselves to middle-class, they aspire to consume western diets which are meat based.^{16,17} The meat substitute market is expected to grow to \$9.25 billion by 2023 and the compound annual growth rate in plant-based meat globally is expected to be 14.8% by 2026.¹⁸ The plant-based protein

industry is expected to grow from \$14 billion to \$140 billion in the next nine years.¹⁹ Thus, with the possibility of great profits, the competition and number of firms in this industry is increasing. In 2019, following brands (with numbers of consumers in millions) were major players in the industry: MorningStar Farms (22.73), Boca (12.52), Gardenburger (10.28), Amy's Kitchen (10.28), Gardenin (7.72), Tofurky (6.49), Lightlife (6.2), Quorn (4.78), Yves (4.21) and others (46.08).²⁰ Another source lists Tyson Foods, Kellogg's (owner of MorningStar Farms brand), Kroger, Nestle, Conagra Brands, and Hormel Foods as the notable participants in this industry.

Beyond Meat

Overall, Beyond Meat and Impossible Foods are the two notable, and aggressive trailblazers in this industry.²¹ Beyond Meat's products are available in major outlets such as Walmart, Target, Giant, Safeway Publix, Shoprite, TGI Fridays, Ingles, Dunkin, and del Taco, which makes it arguably the first mover in the plant-based meat substitute market.²² Naturally, being the first and only publicly traded firm in this market generates tremendous publicity and media coverage. However, Impossible Foods (privately held with valuation of \$2 billion) is a worthy competitor.²³ Impossible Foods has chosen to focus on selling its products to restaurants first (while Beyond Meat focused on retail stores) and had a splashy marketing blitz with well-known chefs.²⁴ The other differences between the two are that Impossible Foods' products have GMO, while Beyond Meats does not; Impossible Foods focuses on high end meat products such as beefsteak, while Beyond Meat's focus is on Chicken and getting its pricing to be closer to general meat prices or slightly lower; and Impossible Foods is still behind in scaling its products for customers like McDonald's, while Beyond Meat is close to or able to meet large demand.²⁵ One could argue that Impossible Foods is as well-known as Beyond Meat in this industry. Since Beyond Meat is publicly listed, I have chosen to analyze whether Beyond Meat will continue to benefit from being the first to market in the plant-based meat substitute market.

Beyond Meat sells its plant-based offerings through approximately 77,000 stores and restaurants, foodservice outlets, direct to consumer, and schools in over 65 countries.²⁶ While its flagship product is Beyond Burger, it also sells Beyond Breakfast Sausage (classic and spicy), Beyond Beef, Beyond Sausage (Brat Original and Hot Italian), Beyond Beef Crumbles (Feisty and Beefy), Beyond Fried Chicken, and Beyond Meatball. According to Beyond Meat, plant-based protein, fat, minerals, carbohydrates and water are its building blocks for its products. Protein is derived from pea, moong and fava beans, and brown rice. Fat is derived from coconut butter, coconut oil, sunflower oil and canola oil. Minerals are derived from calcium, iron, salt,

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and potassium chloride. Flavors and colors are derived from beet juice extract, apple extract, and natural flavors. Carbohydrates are derived from potato starch and plant fiber derivatives (methylcellulose).

First Mover Advantage Generally

A first mover business strategy can be very beneficial and even more so if it is long-lasting. Some of the advantages are:^{27,28}

- (i) Standard Setting—firm sets the technical industry wide standards with its novel product.
- (ii) Locks in first time user and prevents them from switching to competitor products.
- (iii) Brand Reputation—customers associate the firm with the product.
- (iv) Preemption—firm prevents or slows potential competitor's entry in the market by signing contracts in the supply chain.
- (v) Scale advantages occur in the long-term once the firm scales up its manufacturing resulting in reduced per unit cost and better deals with suppliers.
- (vi) Knowledge base increases as the firm continues to refine its methods and learns from its experience with the product.
- (vii) Network—as customers start using the firm's products, their friends and family start using the product and preempt use of a competitor's product.

There are some downsides of being a first mover also. The extensive amount of cost and time expended on R&D and marketing, investments in related product ecosystems, and the opportunity cost of not working on other products are significant risks or disadvantages of being the first mover. Often, if a product has some defect or is primitive in its design or function, it can lead to negative publicity and damage the first mover's brand in the marketplace. The missteps may put the first mover back for many years and sometimes forever.²⁹ Thus, it is imperative to analyze whether Beyond Meat's first mover advantage is sustainable. I use two sets of frameworks for this analysis.

Suarez and Lanzolla Framework

The first framework for this analysis is formulated by Suarez and Lanzolla.³⁰ Sustained success of a first mover depends on two factors: (i) pace of technological evolution, and (ii) pace of market evolution.

Pace of Technological Evolution in Meat Substitute Market

The pace of technological evolution in the plant-based meat market is high. Product innovation is crucial for a product or service provider. A first

mover's ability to innovate can be the difference between life and death. In this industry it is crucial to understand the similarities and differences between animal based and plant-based equivalents. Even more challenging is how one can make foods on large scale from plant-based ingredients that tastes like meat and its non-meat (plant) equivalents. At present there are six areas in plant-based technology evolution.³¹

- Better fat adipose tissue and saturated fat mimics: research in new materials and technologies capable of mimicking saturated fat in terms of texture and appearance, but without the nutritional drawbacks of saturated fat.
- Alternative functional proteins: new non-animal proteins that add function to food products, including native proteins that can denature during cooking, protein binders and protein emulsifying agents and proteins.
- Additional connective tissue equivalents: materials and methods to introduce additional cartilaginous-like materials and heterogeneity in the form of both texture and appearance in food products.
- Encapsulation materials and technology: materials and technologies to expand the scope of controlled-release delivery systems in food products to delivering flavor, color and texturizing agents.
- Materials and technologies to support flavor and texture development: non-GMO enzymes that can assist with protein enzymolysis as it relates to flavor reactions.

Beyond Meat affirms that the key element of its growth strategy is to develop and market new products and improvements to its existing products which is heavily depended on the customer preferences. Naturally, development of new and or improvements to existing products requires substantial R&D and marketing expenditures. Industry watchers state that there is “fast paced innovation in fledgling category” and the sector boasts an “accelerated pace of innovation.”^{32,33} There continues to be an extensive amount of R&D in soy, pea, and wheat. It can be concluded that Beyond Meat's industry is in the *fast* pace of technological evolution.

Pace of Market Evolution in Meat Substitute Market

I find that Beyond Meat's industry is also in *fast* pace of market evolution. For example, Accenture reports that the food market shake-up is based on direct to consumer and concierge model.³⁴ This model essentially cuts out the middleman. Beyond Meat plans to sell directly to customers sometime in summer 2020³⁵ while Impossible Foods has already launched direct to customer service.³⁶ These changes are due to: customers visiting different sources to get their food instead of the traditional one stop shopping, new

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breed of investors with deep pockets (such as private equity, venture capital, traditional grocers) providing funds for innovation and experimentation, use of wi-fi and camera to replenish a customer's refrigerator, and automatic ordering (similar to just-in-time ordering). There will be increasing use of alternative protein derived from pea, algae, yeast, and insects. Thus, it can be surmised that there will be fast pace of market evolution in the plant-based meat industry. I find that Beyond Meat is in the "rough waters" quadrant since it faces fast pace of technological evolution and fast pace of market evolution. The coronavirus pandemic adds an additional amount of uncertainty to the industry specially for Impossible Foods since it is focused on restaurants. Restaurants and businesses where customers congregate in close spaces have been shut down or have only take-out/curbside service. Suarez and Lanzolla state that firms that are in the "rough waters" are unlikely to maintain their long-term first mover advantage. The reason for this is that when technology is changing rapidly, the products are likely to become obsolete and the new entrants can enter the industry because new entrants don't have to make major investments in the prior technology. Thus, new entrants can join in the industry easily. Moreover, a rapidly increasing market attracts new entrants for the potential for above average profits. Furthermore, the first mover is also unable to meet the product or service needs of a growing number of consumers and the new entrant steps in to meet the additional demand.

One of the reasons for Beyond Meat's high profile is that it was the first to go public. However, the financial markets and experts in the field note that Beyond Meat's high stock market valuation will go down along with stiff competition from Impossible Foods.³⁷ Additionally, there are brands such as MorningStar Farms (owned by Kellogg's), Gardein (owned by Conagra), Nestle, Boca, Lightlife, and Quorn with similar products as Beyond Meat.³⁸ The firms behind these brands have many years of experience in the food industry and likely to provide additional competition.

Despite the large amount of costs involved in becoming a first mover, a first mover is expected to receive large profits in the short run. An adept first mover should use these profits to strengthen functional areas such as marketing, large scale production and distribution, and R&D to bolster its ecosystem and maintain its momentum to stay ahead of competitors.³⁹

VRIN Framework

VRIN is another framework which can be employed to determine whether a competitive advantage of being a first mover will be sustainable.⁴⁰ There are four tests that comprise a VRIN analysis. First test is whether the firm's resources or capabilities are valuable? This test determines whether the

customer perceives they are getting value for the product. The lower the price of the product (commensurate with lower cost of producing and making that product available), the higher the perceived value of the product by the customer. Since Beyond Meat's net revenue in 2019 was \$298 million (239% higher compared to 2018), it can be concluded that their product is valuable since customers are willing to spend money on Beyond Meat's products. The second test is whether the resources and capabilities used to produce the products are rare? There are many players in the market with similar products, with Impossible Foods being a direct competitor, I conclude that Beyond Meat's resources or capabilities are not rare. The third test is whether the resources or capabilities are inimitable (difficult to be copied or imitated)? Since the competitors are already making similar products and have similar distribution and marketing channels, Beyond Meat's resources or capabilities can be duplicated by a financially strong competitor. The fourth and final test is whether the resources or capabilities are non-substitutable? The answer to this question is unclear since "assessing the availability of substitutes is the most difficult of all the tests since substitutes are harder to recognize" and plant-based meat itself is a meat substitute.⁴¹ Overall, for now the resources or capabilities are non-substitutable except for when the laboratory-based firms create meats derived from animal cells that are equivalent in taste and texture and economically viable in comparison to plant-based meats. Thus, in the short run this capability is non-substitutable but in long run there is a good probability that there will be substitutes.

In summary, there are two factors (resources being valuable and non-substitutable in short-term) that seem to support sustainability of competitive advantage, while the other two factors (resources not being rare and imitable) are clearly not supportive of sustainable competitive advantage. Thus, Beyond Meat's competitive advantage is not sustainable based on VRIN analysis.

This may not be a bad thing for Beyond Meat. As of now this market seems to have two major players—Beyond Meat and Impossible Foods—along with some smaller firms specially in the U.S. Instead of having a monopoly led by Beyond Meat, the plant-based industry seems to be in the initial phase of a duopoly market structure.⁴² This is a good thing for consumers and the firms themselves.⁴³ As long as both firms compete freely (competition based on quantity not pricing and without any collusion), the consumers will benefit from a non-monopoly pricing and the firms will be on guard from complacency. These firms will compete against themselves with newer and improved products and higher customer service to gain market share. There will be investments in developing more plant-based products and machines and technologies to gain efficiencies in supply chain which will

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result in reduced cost. Another benefit is that for both firms as long as the firms are managed properly, the likelihood of financial emergencies (bankruptcy) are likely to be low. Usually when the market is fragmented among many players, firm consolidations are likely to be high. The duopoly structure has functioned well for the firms and consumers in many industries over the years. There are many well-known duopolies in various industries. Home Depot and Lowe's (home improvement), Dunkin' and Starbucks (breakfast beverage), Amazon and Microsoft (cloud storage), Netflix and Amazon Prime (video streaming), Uber and Lyft (automobile mobility), and Apple and Samsung (in mobile phones) are examples of some of the successful firms in a duopoly market structure. Thus, two major firms--first mover and the follower--can succeed and thrive in a duopoly.⁴⁴

Conclusion

The lesson for business leaders and founders of unicorns (startups valued at a billion dollar or more) is that even if one starts out first and fast, the real challenge is to adapt and learn from customers and competitors, and invest in R&D in order to be successful long-term. If Beyond Meat is to retain its first mover advantages, it must be adept at product and process innovations using technologies based on customer preferences while continuing to provide environmental sustainability benefits.

It is worthwhile to note that in 2019, meat substitute market was only 1.52% of the meat market (\$760 million versus \$50 billion).⁴⁵ For Beyond Meat, there is plenty of room to grow and maintain its first mover advantages.

Author

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