THE IMPOSSIBLE BURGER

CONSUMER INSIGHTS
While every effort has been made to ensure the information in this publication is accurate, the Ministry for Primary Industries does not accept any responsibility or liability for error of fact, omission, interpretation or opinion that may be present, nor for the consequences of any decision based on this information.
What is the Impossible Burger?

The Impossible Burger, developed by Impossible Foods is a patty developed to replicate the taste, texture and smell of beef. The burger made significant steps to meet this goal with the development of heme, a product designed to replicate the properties of blood and make the product have a meat like taste.

Beef replacement companies are receiving significant funding

Two companies Beyond Meat and Impossible Foods displayed large capital flows of US$95.9 million and US$273.5 million respectively. These products have the potential to cause a level of disruption to the US beef market. The New Zealand beef sector adds $2.9 billion of value to the New Zealand economy. 44% of New Zealand’s beef exports went to the US.

Our survey of residents of California and analysis of social media and online data found:

- Consumers are most likely to be in their 30s or 40s, with access to higher disposable income, living in a large city with ready access to the product.
- Of those who tried it, 30% will eat it regularly, 20% did not like it.
- People who have tried the Impossible Burger like it most for its environmental credentials.
- Most consumers (95%) have never heard of the Impossible Burger and less than 2% of respondents have tried the burger.
- Low tolerances in the cooking process mean the final product quality can vary.
- Many vegan and vegetarians do not like the product as they do not want meat substitutes.
- Impossible Foods are grappling with perception around GMO status which is important to maintain the environmental credentials of the product.
OUR APPROACH

OBJECTIVE

1. Identifying Dynamic and Open Markets
   - Identifying the most engaged and relevant markets will inform our decision on what countries to investigate and research.

2. New Product Analysis
   - Comparing retail product attributes: Attributes of the Impossible Burger were assessed by online sentiments on social media.

3. Understanding Consumer Preferences
   - Understanding consumer preferences and demographics will determine if there are market gaps forming in key market segments.
   - Analysing the disruption of new product developments in selected countries identify the high performing products and ‘second movers’ for both current and future plant protein products.

4. Implications and Next Steps
   - Having an in-depth understanding of alternative protein products will inform future decisions on New Zealand’s production and export portfolio, and where New Zealand needs to position itself to be best placed in markets.

Implications:
Quantifications of the attributes of the Impossible Burger were put forward to help inform strategic considerations in the primary sectors with regards to plant protein.

New Product Analysis

Understanding Consumer Preferences

Implications and Next Steps
THE IMPOSSIBLE BURGER

MARKET RESEARCH
US BEEF MARKET IS CRITICAL TO NEW ZEALAND’S WELLBEING

A snapshot of the US

The United States is the 3rd largest importer of meat in the world. Importing from Canada, Australia, New Zealand and Mexico. These countries make up 84% of its total imports, at 30%, 26%, 14%, and 14% respectively.

Downward changes in US meat consumption trends pose a significant risk due to the heavy reliance the US places on New Zealand for its beef. 68% of New Zealand’s 2017 meat and wool exports to the US were in mince beef.

14% Of total US Meat imports are from New Zealand

New Zealand’s increasing reliance on China and the US poses a risk. If both China and the United States reduced their meat imports by just 1% it would reduce global meat imports by NZ$134 million and NZ$113 million. This would reduce New Zealand’s exports by NZ$29 million dollars, which is NZ$9 million more than the 2017 operating profit of Alliance Meats, one of the countries largest meat processors.
A CONCENTRATION OF CAPITAL IS FLOWING TO INNOVATIVE COMPANIES SEEKING TO REPLACE BEEF

Beyond Meat and Impossible Foods seek to disrupt the US beef sector

Two companies, Impossible Foods and Beyond Meat, are attracting significant capital for investment when compared to other global companies attempting to achieve plant based replacement products.

Both these products are using this capital to fund innovative products and processes, that can replace traditional beef. These innovations require significant capital but also promise the greatest prospect of wide spread replication of beef in the near term.

Due to their significant funding and the relevance of the market these companies operate in they were analysed further.
**BEYOND MEAT**

**Founders**
Ethan Brown

**Founded**
2009

**Employees**
51 – 100

**Products:**
Beyond Burger (Non-GMO No Soy or Gluten), Beast Burger (Non-GMO Pea Protein), Beyond Chicken Strips (Non-GMO Soy and Pea Protein), Beyond Beef Crumble (Non-GMO Pea Protein)

**Retail Supermarkets, currently expanding to food services.**

**Partnering with large meat processors (e.g. Tyson Foods) and distributors (e.g. Sysco) to leverage supply chain and market experience to expand market share.**

**The ultimate aim of the company is to be on the menu of major fast-food chains (e.g. McDonald’s and Burger King) in five years. With its new distribution partnerships the supply chain challenges of meeting food-service requirements may be easier.**

**The company has taken a traditional marketing approach, targeting those consumers looking to make healthier choices, and giving them an easy and affordable pathway.**

---

**Funding**

<table>
<thead>
<tr>
<th>Funding Round</th>
<th>Amount Raised (USD)</th>
<th>Notable Investors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary series (A – C)</td>
<td>$22 Million</td>
<td>Closed Loop Capital</td>
</tr>
<tr>
<td>Secondary series (D – F)</td>
<td>$65.4 Million</td>
<td>Bill Gates General Mills Tyson Foods</td>
</tr>
<tr>
<td>Convertible Note</td>
<td>$8.4 Million</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$95.8 Million</strong></td>
<td></td>
</tr>
</tbody>
</table>

See page 33 for a full breakdown of funding amounts, timelines and investor profiles. Funding data obtained October 2017.
**IMPOSSIBLE FOODS**

**Founders:**
- Patrick O. Brown

**Founded:**
- 2011

**Employees:**
- 101 – 250

**Products:**
- Impossible Burger (Beef-like patty)

---

**Market:**
- Restaurant and Burger chains across the US

**Short-term Strategy:**
- Expand presence in burger chains across the US, targeting higher-end chains. A new factory has begun production of up to one million pounds of burger product per month. No plans to sell burgers in supermarkets or directly to consumers.

**Long-term Strategy:**
- Develop expanded range of meat and dairy products, continue targeting restaurants and food-service. With prototypes developed Impossible Foods is considering which product to commercialise next. Chicken is a likely choice as it is the most consumed protein in the US and therefore the largest market.

**Engagement Strategy:**
- Aggressive focus on getting news articles printed about the company and product. Targets scientifically literate, tech savvy, and environmental ethical segments.

---

**Funding**

<table>
<thead>
<tr>
<th>Funding Round</th>
<th>Amount Raised (USD)</th>
<th>Notable Investors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary series (A – C)</td>
<td>$74 Million</td>
<td>Khosla Ventures</td>
</tr>
<tr>
<td>Secondary series (D – F)</td>
<td>$124.5 Million</td>
<td>Horizons Ventures</td>
</tr>
<tr>
<td>Convertible Note</td>
<td>$75 Million</td>
<td>Bill Gates</td>
</tr>
<tr>
<td>Total</td>
<td>$273.5+ Million</td>
<td>Li Ka-shing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temasek Holdings</td>
</tr>
</tbody>
</table>

*Funding data obtained October 2017. See page 29 for a full breakdown of funding amounts, timelines and investor profiles.*
THE IMPOSSIBLE BURGER

PRODUCT OVERVIEW
Impressive Foods has been successful in turning capital into a commercial product.

**IMPOSSIBLE FOODS HAS BEEN SUCCESSFUL IN TURNING CAPITAL INTO A COMMERCIAL PRODUCT**

Impossible Foods have demonstrated that as each funding round has been received, they have continued on developing the product and delivering results.

**Key milestones for Impossible Foods**

1. Product leghaemoglobin (heme) is developed and continually refined over this time and continues to be refined.
2. Initial funding rounds to continue research and development of plant-based products that taste like meat.
3. Reportedly turned down a US$300 million offer to purchase the company.
4. Raised over US$100 million to help fund the company as it begins to release more product into market.
5. Impossible Foods released the Impossible Burger to market via the Momofuku Nishi restaurant in New York.
6. Received US$75 million in funding after meeting key milestone of attaining patents for the use of heme in plant-based meat.
7. Begin production of burgers in large-scale plant in Oakland, CA.
The Impossible Burger is one of the new generation products that attempts to overcome the consumer taste and experience barrier to conventional meat substitutes, such as tofu and soy, which have not been able to convert large numbers away from eating meat.

Launched in 2011. The product is sold directly to selected restaurants in order to control consumer experience. The product targeted at consumers who are looking for more ethical and environmentally friendly products yet are not willing to compromise on attributes such as the taste and texture of meat.

The patty is made from:
- Wheat protein
- Coconut oil
- Potato protein
- Heme

Growing convenience as reach grows to:
- 95 Locations*
- 10 States*
- $9-18 Price*

*As at Oct, 2017

Making plants bleed, the role of heme:
Legoglobin is a key component of what makes meat have a slightly metallic taste, smell and bleeding texture. Without this component in a burger it will fail to draw the comparisons to a meat burger.

Fortunately, this property is also found in plants such as soy, but in very low quantities to be viable.

Impossible Foods use a fermentation process where yeast are imprinted with the gene code for soy leghaemoglobin, which they then produce in large quantities when fed sugar and minerals.

This product called heme is what gives the meat flavour and smell that the product is known for.
THE IMPOSSIBLE BURGER DELIVERS ON MANY ENVIRONMENTAL CREDENTIALS

The Impossible Burger has made significant developments in reducing the environmental footprint of a burger.

The typical burger requires an intensive farming of livestock for meat, livestock requires natural land, water, energy, and results in contaminated waterways, leached soil, and methane emissions.

These negative environmental impacts have been increasingly under the spotlight with calls for change in the industry.

As the Impossible Burger does not use an animal product as its primary ingredient, the environmental footprint is significantly less than that of an animal based product.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Regular Burger</th>
<th>Impossible Burger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land (m²)</td>
<td>7</td>
<td>0.4 Saving 6.6m²</td>
</tr>
<tr>
<td>Water (L)</td>
<td>200</td>
<td>50 Saving 150L</td>
</tr>
<tr>
<td>Energy (kwh)</td>
<td>0.3</td>
<td>0.04 Saving 0.26 kwh</td>
</tr>
</tbody>
</table>

34% liked environmental credentials

Those consumers who would buy it again say they would do so primarily for it’s environmental and health credentials.

72% Consumers aged between 15-20 are willing to pay more for products and services that come from companies committed to positive social and environmental impact (Nielsen, 2015).
FOOD CHANNELS ARE PREPARING THE BURGER AS A HIGH QUALITY PRODUCT

Restaurants:
Restaurants selling the Impossible Burger focus on high-quality ingredients and sustainable values. Most of the locations are operated by burger chains such as Umami and BareBurger. There are also several iconic locations such as Momofuku in New York.

Patty presentation:
The Impossible Burger was originally made as a thick patty, but recently more outlets serve it as a thin patty, most likely to simplify the cooking process and improve quality control.

Burger style:
The burgers are usually made in a classic style with lettuce, tomato, cheese, pickles and sauce. Some locations allow the Impossible Burger patty to be substituted in any of their regular burgers.

Our research has shown that the Impossible Burgers quality and taste is sensitive to the skill of the cook, with an appearance that can vary significantly.

Impossible Foods controls the quality by choosing restaurants that can prepare the burger. This results in a high standard product delivered onto the consumers plate.

As the company grows the number of restaurants Impossible Foods sells to will increase. This will constrain their current model to ensure quality.
THE IMPOSSIBLE BURGER

CONSUMER RESEARCH
This report wanted to explore what people were saying about the Impossible Burger on social media across the US. Gathering data on this helped in understanding how people were receiving the product and the experience they had while eating the burger. This insight allowed conclusions to be drawn on the success of the Impossible Burger.

The report used a survey to ask some in-depth questions from people who had tried the Impossible Burger. Doing this allowed us to dive deeper into people’s motivations for trying the plant based burger.

The media used in this report included social media platforms and online newspaper outlets.

Social media platforms were observed to see who was talking about the Impossible Burger. After a large enough sample was collected we began comparing what people were saying, what restaurants they had been to and how they felt about the product.

The survey was conducted online, with 10,000 initial participants, 500 of which met criteria for further questioning. Among the questions, people were asked about their reasons for purchasing the Impossible Burger and their thoughts on the product.
CRITICAL RECEPTION OF THE BURGER HAS BEEN MIXED

Chatter

Reception

Opinions of online reviewers range from very positive to very negative.

A number of paid reviews gave glowing reports of how the product was indistinguishable from ground beef.

Smaller publications and bloggers indicate that the product was not perfect.

Reviewers were more impressed by the appearance than the taste.

Some of the reviewers had negative experiences when the burger was not cooked properly. This clearly has a major effect on taste, texture, presentation, and overall experience. The example here shows one reviewer who had a very bad experience with one of the newer outlets in Houston TX. The reviewer commented that:

...their texture was so soft and squishy that there was none of the tension between juicy interior and snappy crust so vital to the burger experience. Instead, the patties mooshed right out of the sandwich margins, falling apart into a dispirited heap. They didn’t “bleed”; they squashed.

Two separate reviews from momofuku NYC

With the traditional fixings and an extremely pillowy house-made potato bun from Nishi, I would have never guessed that this wasn’t animal meat.

I’m just looking at the amazing pictures Jane took, and, honestly, they make the burger look a lot better than it tasted. It’s very photogenic!
SOCIAL MEDIA COMMENTS
ARE GENERALLY POSITIVE

The majority of online chatter stems from people posting in three categories:

1. Posting about trying the burger
2. Posting about wanting to try the burger
3. Posting articles and links about the science and innovation

Less frequently, but importantly consumers sometimes offer direct feedback such as:

Posts from people trying the burger were generic, and often included a photo of the burger with a positive comment.
And consumer chatter is steady

Online chatter relating to the Impossible Burger has been fairly steady, with spikes relating to major or controversial events. Over 30 days in September and October 2017, there was one major spike resulting from multiple news outlets announcing the release of the Impossible Burger in Boston, Detroit and Chicago restaurants.

An article from Boston Magazine, generated several hundred comments of angry debate around the use of GMOs, organics and other such topics, despite the original article being brief and neutral.

The comments caused a dip in the otherwise very positive opinion towards the Impossible Burger, despite being largely unrelated to the Impossible Burger itself. Overall, the sentiment of the product remains extremely high. This is due to the highly engaged Public Relations efforts of Impossible Foods and a willingness to front foot contentious issues that related to the product such as the use of GMO’s.

Heme in the Impossible Burger is genetically engineered and could make it less appealing to some consumers.

New generation products often have additives to maintain colour, shelf-life and quality, yet consumers prefer natural ingredients.

20% of products released in 2015 claim no additives or preservatives (Mintel, 2016).
IMPOSSIBLE FOODS WORKS HARD TO MITIGATE GMO AND FOOD SAFETY CONCERNS

Following difficulty with the FDA and a critical New York Times article, Impossible Foods has attracted criticism from environmentalists and animal rights activists about the transparency of its scientific development. The company is actively working to combat any perception shifts, but has not been able to address the concerns raised by the FDA as yet.
It is still a niche product relative to established players

Impossible Burger locations
Relative to the populations where the Impossible Burger is available the availability of the product is still limited.

California was assessed as a state to study further as it has a large affluent population, with many locations of both Impossible Burger and traditional burger outlets and access to good data sources to conduct research.

Adoption in California will require time
There were over 69,000 food and drink restaurants in California in 2015. In 2017 the Impossible Burger was stocked in only 36 Californian restaurants.

This indicates that despite rapidly increasing the rate of restaurants stocking the Impossible Burger, there are still far more venues offering traditional products.

Survey
It took over 10,000 Californians in our survey request to find a sample of 500 people who have heard of the Impossible Burger. Of those who knew of the burger only 31 percent had tried it. The survey looked at consumer response to the Impossible Burger and the reasons behind purchasing it.
SURVEY RESULTS INDICATES THE PRODUCT HAS SHALLOW MARKET PENETRATION

Survey

Relative to the populations where the Impossible Burger is available the availability of the product is still limited.

- In order to get 500 respondents who had heard of Impossible Burger we had to survey more than 10,000 Californians.
- Among respondents who have heard of Impossible Burger, 31% have tried the product.
- This suggests that people who are interested in the product had gone out of their way to try it.
- All participants from Los Angeles and San Francisco had heard of the Impossible Burger, indicating that residents of cities where the burger is available are more aware of its existence.
- Around 40% of San Francisco respondents had tried it.

---

Q1: Do you know what the Impossible Burger is?

- Yes: 5%
- No: 71%
- Don’t know: 23%

Q2: Have you tried the Impossible Burger?

- Yes: 31%
- No: 63%
- Don’t know: 6%

This chart shows respondents who answered yes to question 1.
THE AMOUNT OF PEOPLE WHO WOULD EAT IT AGAIN IS MIXED

Among consumers who had tried the burger, there was a fairly even split between those who expect it to become a regular feature of their diet (29%) and those who do not (28%).

Comparing between Los Angeles and San Francisco indicates that LA consumers were considerably more likely to eat the burger regularly.

Overall men are around 30% more likely to say they would eat the burger regularly.

Survey

This chart shows respondents who answered yes to question 2, indicating they have actually tried the burger.
AND APPEALS TO CONSUMERS WITH HEALTH AND WELLNESS CONCERNS

Survey

For the consumers who had tried the burger, the most liked feature was that the Impossible Burger was good for the environment, followed by its health credentials. Around one fifth of respondents who tried the burger did not like it.

Between Los Angeles and San Francisco, consumers in Los Angeles were more likely to cite health benefits as a reason to like the burger.

Overall the differences between Los Angeles and San Francisco indicate that there are some fundamental differences between consumers in these areas. San Francisco consumers are more likely to have tried the burger out of curiosity and don’t see it as a replacement for meat in their diet. Alternatively, Los Angeles consumers are more inclined to see it as a health product that should be incorporated into their diet.

What do you like most about Impossible Burgers?

- I don’t like them: 19%
- They’re new & exciting: 15%
- They’re healthy: 28%
- They’re good for the environment: 34%
- Probably Not: 4%
THE IMPOSSIBLE BURGER

APPENDICES
COMPANY PROFILES:
IMPOSSIBLE FOODS

Products:
Impossible Burger (Beef-like patty)

Developing a chicken product and cheese substitute. They have developed prototypes of steak, chicken, fish, and cheese.

Restaurant and Burger chains across the US.

Engagement Strategy:
Aggressive focus on getting news articles printed about the company and product. Hold workshops and demos for large groups of journalists to get their message across. Especially targeting scientifically literate, tech savvy, environmental and ethical segments. Product-level promotion is picked up by the chains selling product and is largely independent of Impossible Foods.

Short-term Strategy:
Expand presence in burger chains across the US, mainly targeting higher-end chains selling burgers for $10 – $15 each. A new factory has begun production of up to 1 million pounds of burger product per month. No plans to sell burgers in supermarkets or direct to consumers.

Long-term Strategy:
Develop expanded range of meat and dairy products, continue targeting restaurants and food-service. With prototypes developed the company is trying to determine which product to commercialise next. Chicken is a likely choice as it is the most consumed protein in the US and therefore the largest market.
Khosla Ventures
Venture capital firm started in 2004 by Vinod Khosla, Co-Founder of Sun Microsystems. The firm focuses on environmentally friendly technologies in addition to the traditional venture areas such as the Internet, computing, mobile and silicon technology arenas.

GV
Launched as Google Ventures in 2009, GV is the venture capital arm of Alphabet, Inc. They’ve invested in more than 300 companies in the fields of life science, healthcare, artificial intelligence, robotics, transportation, cyber security, and agriculture.

Horizons Ventures
Horizons Ventures Limited, based in Hong Kong, funds especially disruptive and technology-focused start-ups. Some of the latest exits are Skype, Siri, Facebook, Summly, and Waze.

Temasek Holdings
Incorporated in 1974, Temasek is an investment company based in Singapore, with a US$180 billion portfolio as at 31 March 2016. Temasek’s portfolio covers a broad spectrum of sectors: telecommunications, media and technology; financial services; transportation and industrials; consumer and real estate; life sciences and agriculture; energy and resources.

Trinity Capital Investment
Founded in 2008 as a provider of venture loans and leases for emerging growth start-up companies seeking access to capital while preserving equity.
COMPANY PROFILES:
IMPOSSIBLE FOODS

Investor Profiles

UBS
UBS is a leading global wealth manager, a leading, global investment banking and securities firm, and one of the largest global asset managers. They were the lead investor in Impossible Foods Series D funding round.

Li Ka-shing
Li Ka-shing is a Hong Kong business magnate, investor, and philanthropist. He is one of the wealthiest people in Asia, with an estimated net worth of US$34.4 billion. Prior to retirement in early 2018, he was the chairman of CK Hutchison Holdings.

Bill Gates
Founder, technology advisor and board member of Microsoft Corporation. Has privately invested in 21 companies including Beyond Meats and Memphis Meats, as well as renewables and social change companies.

Viking Global Investors
Viking Global Investors LP is a global investment firm managing more than $20 billion in capital across long-short equity and long-only strategies. The firm was established in 1999 and has offices in Greenwich, New York City, Hong Kong, and London.

Innovative Fund
Innovative Fund is a sister-fund to the Collaborative Fund, initiated by NXC – the holdings company of Nexon Corporation. They invest in entrepreneurs looking to create world-scale impacts. They are also investors in Beyond Meat, and Exo Protein Bars (Cricket Flour).
### COMPANY PROFILES:
**IMPOSSIBLE FOODS**

<table>
<thead>
<tr>
<th>Date</th>
<th>Type</th>
<th>Investors</th>
<th>Money Raised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 2017</td>
<td>Convertible Note</td>
<td>Khosla Ventures, Temasek Holdings, Horizon Ventures, Bill Gates</td>
<td>$75 m</td>
</tr>
<tr>
<td>May 2016</td>
<td>Debt Financing</td>
<td>Trinity Capital Investment</td>
<td>$16.5 m</td>
</tr>
<tr>
<td>Sep 2015</td>
<td>Series D</td>
<td>Khosla Ventures, Horizon Ventures, Bill Gates, UBS, Viking Global Investors, Li Ka-shing, Innovative Fund</td>
<td>$108 m</td>
</tr>
<tr>
<td>June 2014</td>
<td>Series C</td>
<td>GV, Horizons Ventures</td>
<td>$40 m</td>
</tr>
<tr>
<td>Jul 2013</td>
<td>Series B</td>
<td>Bill Gates</td>
<td>$25 m</td>
</tr>
<tr>
<td>Jul 2011</td>
<td>Series A</td>
<td>Khosla Ventures</td>
<td>$9 m</td>
</tr>
</tbody>
</table>
COMPANY PROFILES:
BEYOND MEAT

**Founders:** Ethan Brown

**Founded:** 2009

**Employees:** 51 – 100

**Products:**
- Beyond Burger (Non-GMO No Soy or Gluten)
- Beast Burger (Non-GMO Pea Protein)
- Beyond Chicken Strips (Non-GMO Soy and Pea Protein)
- Beyond Beef Crumble (Non-GMO Pea Protein)

**Product Pipeline:**
Probably more focused on expanding current products and innovating around format rather than developing new products.

**Market:**
Retail Supermarkets, currently expanding to restaurants.

**Engagement Strategy:**
The company has taken a more traditional marketing approach, targeting those consumers looking to make healthier choices, and giving them an easy and affordable pathway.

**Short-term Strategy:**
Partnering with large meat processors (e.g., Tyson) and distributors (e.g., Sysco) to leverage supply chain and market experience to expand market share.

**Long-term Strategy:**
The ultimate aim of the company is to be on the menu of major fast-food chains (McDonald's and Burger King) in 5 years. With its new distribution partnerships the supply chain challenges of meeting food-service requirements may be easier.
COMPANY PROFILES:

**BEYOND MEAT**

**Investor Profiles**

**US Humane Society**
A non-profit animal protection organization that fights for the protection of all animals through advocacy, education, and hands-on programs.

**Tyson Foods**
Tyson Foods, Inc. (NYSE: TSN), founded in 1935 with headquarters in Springdale, Arkansas, is one of the world’s largest processors and marketers of chicken, beef, and pork, as well as prepared foods. Tyson employs 115,000 people at more than 400 facilities and offices in the U.S. and around the world.

**General Mills**
General Mills is one of the world’s largest food companies, marketing in more than 100 countries. Its US Retail arm includes seven divisions that market brands such as Cheerios, Yoplait yogurt, Pillsbury refrigerated dough and Betty Crocker baking products. In 2017 it also invested into an organic and vegan food company, Purely Elizabeth.

**GreatPoint Ventures**
A Venture Capital firm focusing on Health and Biomedical investment. They are very low-profile investors.

**New Crop Capital**
A specialized private venture capital fund investing in products or services to replace foods derived from conventional animal agriculture. They are invested in more than 15 food companies including Memphis Meats, GoodCatch (Plant-based seafood), and the Purple Carrot (Plant-based food delivery).
COMPANY PROFILES:

BEYOND MEAT

Investor Profiles

Closed Loop Capital
An early-stage venture capital platform investing in agricultural entrepreneurs. They have invested in MycoTechnology (fungi based food-processing), Inocucor Technologies (biological products), and Zipongo (healthy eating apps).

Kleiner Perkins Caufield and Byers
A well known Silicon Valley venture capital firm, due in large part to their past success. They were early investors in many significant companies, including Amazon, AOL, Compaq, Electronic Arts, Google, Intuit, Macromedia, Netscape, Segway, and Sun Microsystems.

Bill Gates
Founder, technology advisor and board member of Microsoft Corporation. Has privately invested in 21 companies including Beyond Meats and Memphis Meats, as well as renewables and social change companies.

S2G Ventures
A multi-stage venture fund focused on investments in food and agriculture industries. Food companies they have invested in include Ripple Foods (dairy-free milk replacement), FishPeople Seafood (sustainable seafood products), and MycoTechnology (fungi based food-processing)

Obvious Ventures
A VC firm with a focus on world improvement. They have invested in over 43 companies in health, energy and food. Their food investments include Miyoko's Kitchen (vegan cheese) and Good Eggs (grocery delivery)

Innovative Fund
Innovative Fund is a sister-fund to the Collaborative Fund, initiated by NXC – the holdings company of Nexon Corporation. They invest in entrepreneurs looking to create world-scale impacts. They are also investors in Beyond Meat, and Exo Protein Bars (Cricket Flour).

Bill Gates
Founder, technology advisor and board member of Microsoft Corporation. Has privately invested in 21 companies including Beyond Meats and Memphis Meats, as well as renewables and social change companies.

S2G Ventures
A multi-stage venture fund focused on investments in food and agriculture industries. Food companies they have invested in include Ripple Foods (dairy-free milk replacement), FishPeople Seafood (sustainable seafood products), and MycoTechnology (fungi based food-processing)

Obvious Ventures
A VC firm with a focus on world improvement. They have invested in over 43 companies in health, energy and food. Their food investments include Miyoko's Kitchen (vegan cheese) and Good Eggs (grocery delivery)

Innovative Fund
Innovative Fund is a sister-fund to the Collaborative Fund, initiated by NXC – the holdings company of Nexon Corporation. They invest in entrepreneurs looking to create world-scale impacts. They are also investors in Beyond Meat, and Exo Protein Bars (Cricket Flour).
### COMPANY PROFILES: BEYOND MEAT

<table>
<thead>
<tr>
<th>Date</th>
<th>Type</th>
<th>Investors</th>
<th>Money Raised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 2017</td>
<td>Convertible Note</td>
<td>Unknown</td>
<td>$8.41m</td>
</tr>
<tr>
<td>May 2016</td>
<td>Series F</td>
<td>General Mills, Tyson Foods, US Humane Society</td>
<td>$23.46m</td>
</tr>
<tr>
<td>Sep 2015</td>
<td>Series E</td>
<td>Kleiner Perkins Caufield and Byers, Obvious Ventures, Bill Gates, S2G Ventures, Closed Loop Capital, Innovative Fund</td>
<td>$17m</td>
</tr>
<tr>
<td>June 2014</td>
<td>Series D</td>
<td>Obvious Ventures</td>
<td>$25m</td>
</tr>
<tr>
<td>Jul 2013</td>
<td>Series C</td>
<td>Closed Loop Capital</td>
<td>$15m</td>
</tr>
<tr>
<td>Jul 2011</td>
<td>Series B</td>
<td>Unknown</td>
<td>$5m</td>
</tr>
<tr>
<td>April 2011</td>
<td>Series A</td>
<td>Unknown</td>
<td>$2m</td>
</tr>
</tbody>
</table>

**Total Funding to date**

- $23.46m (May 2016)
- $17m (Sep 2015)
- $25m (June 2014)
- $15m (Jul 2013)
- $5m (Jul 2011)
- $2m (April 2011)
- $8.41m (Aug 2017)

**Total Funding to date:** $61.48m
I've now had Impossible Burgers at 5 different places in California: Jardinière and Cockscomb in San Francisco, Crossroads in Los Angeles, and 3 Umami Burger locations (LA, Santa Monica, Costa Mesa). Here's what I've learned:

Impossible Burger does not cook exactly like beef. It needs to be grilled at a lower temperature. It gets a nice caramelized crisp on it faster than beef burgers, so cooks sometimes seem to gauge its interior doneness by how it looks outside. Too many of my Impossible Burgers have been served rare to medium rare, and it doesn't hold together well at that level of under-doneness—it doesn't have enough bite, and soft chunks fall out onto your plate. Cooks may want to emphasize how meaty it looks with a lot of visible hemery redness to—as you can see in many publicity photos of the burger.

But what I consider salient about Impossible Burger is: it must be cooked medium for optimal perfection of both flavor and texture. When underdone, the burger is too mushy and while still flavorful, it lacks the richly cooked umami of a more thoroughly cooked version and the texture just doesn't work for me. On the other hand, when it's well-done (I ordered it well-done at Umami Burger in Santa Monica), they get so crispy and hard that they're almost inedible. What I'm saying is that the product is not very forgiving. It's not like beef burgers that can be cooked to different doneness levels to suit the individual. After trying a lot of them, I recommend requesting that your Impossible Burger be cooked until the red is just barely there or just gone.

When cooked at a lower temperature like this until it's medium on the inside and outside—and without too much added seasoning—Impossible Burger hits a sweet spot that can win over meat lovers. But it's got to be right there. I've had them cooked to perfection at Cockscomb in SF and at the Costa Mesa Umami Burger, but not every time at either location. I'm curious to hear feedback from others who've been enjoying Impossible Burgers about this issue of optimal doneness.

(Attached images: the process at Cockscomb. And Impossible Burgers I've scarfed throughout the Golden State)
CONSUMER CHATTER EXAMPLES

I tried meat for the first time in my life last night. 😊
(Well, kind of. I ate the Impossible Foods "bleeding" burger, which is uniquely engineered to smell, sizzle, bleed, and taste identical to meat, which confirmed it legitimately did.)
It...uh...did not go very well.

Tried it last night. I got one and of the party I was with, two got veggie burgers (Burgatory's veggie burger is awesome) and two got regular beef burgers. Also we got another Impossible Burger for the table to split. I was definitely impressed. Cheeseburgers are one of my favorite foods, I just don't eat meat anymore. I thought the meat was a little "loose" but overall it was very good. The table agreed that it was good. One of the meat eaters was slightly grossed out by it, the veg heads said they would probably stick to the veggie burger but would maybe get one occasionally. IMO it has a really good taste and general consistency for someone looking for alternatives to meat. I will definitely get one as an occasional treat if they stick around.
KEY MESSAGES FROM RESEARCH

Impossible Burger Survey
To obtain a picture of Impossible Burger consumers, we surveyed residents of California to identify who has purchased the burger, why they like it, and whether they will regularly purchase them in future.

This survey found that:
- Consumers are most likely to be in their 30s or 40s, with access to higher disposable income and living in a large city with ready access to the product.
- Less than 2% of respondents have tried the burger.
- Of those who tried it around:
  - 30% will eat them regularly
  - 20% didn’t like it
- People who have tried the burger like it most for its environmental credentials, and to a lesser extent because its healthy.
- Around 40% of people who have tried the burger don’t expect it to be a regular item in their diet.
- Most consumers (95%) have never heard of it.

Social Media Analysis
Social media and online data is generally positive. Because the burger is “trendy”, many use online posts with the burger as a kind of status symbol. Filtering these posts, we determined key constraints to increased uptake.

- The marketing strategy to primarily target meat-eating consumers has been quite successful.
- The major question is whether the trend for high-end burgers continues in future and whether the Impossible Burger can consistently beat the experience of traditional burgers.
- Low tolerances in the cooking process mean the final product quality can vary greatly.
- Many vegan and vegetarians do not like the product as they do not want meat substitutes.
- Impossible Foods faces a challenge that to satisfy the FDA of the product’s safety they must carry out animal testing, causing PR issues.
- They are also grappling with issues around GMO status which are important to maintain the environmental credentials of the product – a major drawcard for consumers.
THE GROWTH OF IMPOSSIBLE FOOD AND THE IMPOSSIBLE BURGER

Progress of the Impossible Burger since the survey in October 2017

Expansion

The map below shows the amount of locations selling the Impossible burger in 2017 and the rapid expansion of locations selling the burger in 2018.

Techniques

Impossible Foods has launched a campaign, ‘Impossible Demand’ where customers can request their local restaurant to feature the burger on their menu, and in return, the restaurant will receive a discount off their first order.

Celebrity attention

At Ellen DeGeneres’ 60th birthday, in February 2018, DeGeneres served the Impossible Burger to her guests, including Kim and Kanye West, Jennifer Lawrence, Oprah, John Legend, and Chrissy Teigen. During an interview on The Ellen Show, Teigen, a foodie and model, discusses how amazing she thought the Impossible Burger tasted.

Chrissy Teigen says the Impossible burger is “more flavorful than meat” thegreenplate.com/blog/chrisst-t-

Thinking global

“We’ve always known that our mission is global. Asia is an important milestone, but frankly it’s only the beginning of our global expansion” said David Lee, Impossible Foods chief operating officer, December 2017.

Funk, C., Kennedy, B. Public opinion about genetically modified foods and trust in scientists connected with these foods (2016) Pew Research Centre.

Google wants the world to go meat-free: Search giant tried to buy a veggie burger start-up for $300 Million (2015) Daily Mail Australia.


Mintel GNPD data: 15.7% of new US food/bev products made non-GMO claims in 2015 vs 2.8% in 2012 (2016) Food Navigator USA.
