



ARTICLE

Alternative Proteins: Disruptive trend or here to stay?

An assessment of external drivers towards behavioural change

What are the core drivers of adoption in new tech/innovations and what does this tell us about the future trajectory of the industry?

As alternative proteins may have started as a trendy niche or dietary necessity, but now they are part of the mainstream market. The growth in commercial range and availability of products suggests these products are here to stay and will continue to proliferate as more producers invest in product development and go to market strategies. Each new novel product seemingly begets newer, more complex, or advanced forms of plant proteins which in the majority aim to be near indistinguishable from meat or animal proteins.

Looking at patterns of product innovation and development across different sectors, improvements to existing products is a direct threat to established businesses models and modes of usage. The alternative protein market is not new but the latest variants and adaptations in roughly the last three years, as a result of demand, linked with technological and scientific advancements mean that the current new products are not - as tradition would suggest - a risk to older alternative meat forms, but a potential replacement risk to the actual meat and animal protein market. Whether this risk manifests will depend on the rates of adoption and the drivers behind consumption decisions.

This paper is a non-scientific exploration of the scale of the potential or actual risk posed by the rise of the alt meat industry, to the established animal protein ecosystem. Will the rise of alt meat lower meat consumption enough to significantly damage the market, or will both models of production and consumption meet a midpoint of uneasy equilibrium?

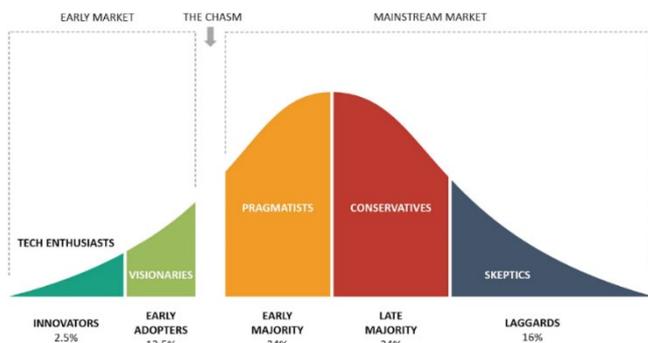
BEHAVIOURAL MAPPING AND ADOPTION CURVE MODEL¹

A shortcut to map the current position and trajectory of alt meat consumption and adoption as 'normal' is to attempt to apply the broadly cited adoption curve theory. On face value, when considering a novel item for longer term use, we are influenced mainly considerations like availability, necessity, convenience, and ease of use. As each person's definition of these factors is slightly different, when applied to a broad population sample, the spread tends to map into the familiar bell curve pattern we're used to seeing.

The adoption curve was born from sociologist Everett Rogers' 'diffusion of innovation' theory which sought to explain the reasons behind how new ideas or technology and innovation translated into adoption. Rogers highlighted the key stages

as understanding, persuasion, decision, implementation, and confirmation.

This model is one of many but has become the de facto way of understanding behavioural choices regarding consumption and is a pattern closely watched by marketers globally. With the ubiquity plant-based meat products, diffusion of innovation theory steppingstones such as understanding, persuasion is each respectively largely and partially covered. The decision, implementation and confirmation stages now depend on the right input and actions from product marketers to 'push' these products at the right time according to different social groups' propensity to embrace and accept change. This concept of readiness was also outlined by researchers Parasuraman and Colby in a 2001 study classified consumers into groups of explorers, pioneers, sceptics, paranoids, and laggards, terms that are often directly overlaid with the adoption curve.



Source: *The Literature Review of Technology Adoption Models and Theories for the Novelty Technology*

EXISTING EXAMPLES IN ACTION

What existing tech examples can we point to as a predictor towards the future?

We can see a similar pattern in the electric car industry currently - like alt meat in that vendors such as Tesla have grown awareness, availability, persuasion, and a good level of desire towards electric car models. There remains a gap in implementation mainly due to misconceptions about their capability and capacity. Price vs function was also a previous barrier. However, in January 2021, [The Guardian reported on a selection of studies](#)² which signalled that globally, electric vehicles were "close to the tipping point of rapid mass adoption" as a result of the rapidly falling cost of batteries, leading to electric vehicle prices falling below petrol and diesel models. Range

anxiety was also noted in one the studies as a key barrier to uptake. A separate poll revealed that among existing drivers, 91 percent would not return to petrol and diesel models. Despite a range of factors, price remained the biggest deciding factor in adoption. This is perhaps less a directly applicable outcome for the alternative meat industry because of the vast difference in sale price points but a relevant consideration, nonetheless.

MAIN FACTORS INFLUENCING THE CURVE AND FUTURE TRAJECTORY

Economics

A crowded market

We have seen substantial increases in [record investments in alternative proteins](#) and favourable regulatory environments in continental Europe, leading to a considerable fall in prices and greater availability and choice. The widely cited Barclays estimate that the plant-based meat market could grow to \$140 billion in the next decade taking a 10 percent share of the \$1.4tn world meat market persists in commentary and coverage. According to the [Financial Times](#)³:

"The growth in alternative proteins outperformed the rise in investment in the broader agri and food tech space."

Beyond Meat's IPO was the markets first clear, tangible proof point of potential for these products' acceleration along the adoption curve, and a milestone moment in the marker towards alt meat normality. Rumours of [Impossible Foods' IPO](#)⁴ have also recently come to light. Each indicator a clear point of demarcation towards the downward slope of the adoption curve.

A plethora of companies, subsidiaries of existing companies and global FMCG businesses have and continue to bring products to market, feeding into the supply side frenzy to cater for the perceived growing shift away from animal protein as a primary source of protein. This calls into question about which companies have the capacity to make and maintain a profit and emerge victorious, or just survive in the market. The widespread choice we're seeing

on shelves now may eventually narrow if smaller or independent players are phased out of competition. If this happens, the remaining companies and products will have to become perfectly tailored to consumer tastes and demands for interest and purchase levels to be maintained.

Balancing production, pricing, supply, and demand

Companies are however aware of the limits of production. In a January 2021 interview with the FT backed outlet Sifted, Moving Mountains' founder Simeon Van der Molen said:

“There aren't enough vegans in the UK or Europe or the world to actually sustain all of these new companies...The growth is in flexitarianism”.

Publicly acknowledging the competitive field it operates in, Beyond Meat took this awareness one step further at the beginning of the pandemic with the CEO noting that the company was aiming to compete against real beef to “make more inroads with the consumer”, as beef prices rose as a result of supply chain disruption. Similarly, in January 2021, Impossible Foods announced that it would [cut wholesale prices by 15 percent](#)⁵, to be passed onto consumers. It was the second cut in the space of a year and CEO Patrick Brown added that it would not be the last.

As taste and innovation have passed the major consumer milestones, price as the newest frontier of competition. In a 2020 initiation note on Beyond Meat from BTIG, the investment firm noted that the company needed to achieve "Price parity with traditional proteins...to broaden the base of customers" which is currently centred on "young, female customers in urban markets."

The media continue to balance the scales of public opinion, and perception, outlets continuing to publish studies noting the potential cons of these products alongside the hype of new product offerings. For example a number of consumer goods reporters picked up on a February 2021 study commissioned by sports insurance brand Insure4Sport, which found that vegan goods in supermarkets tended to be on average, [26 percent more expensive than their meat counterparts](#).⁶

Either way, retailers will continue to play a key role in whether we buy or browse and appear keen to stay amid the action. In September 2020, Tesco announced targets of a [300 percent increase in sales of meat alternatives](#)⁷ within four years, as part of wider sustainability measures. In addition, earlier this year, a leaked email, from the company seen by The Daily Telegraph revealed that Tesco aims to offer a non-meat alternative for every animal product within four years. While positive and revenue generating for all involved, how far can retailers go in the push for creating and feeding consumer demand for without threatening the economic interests of the farming lobby?

Drastic price cuts from producers and a race to stock shelves from retailers show there is unlikely to be any shortage of supply and opportunities for consumer experimentation for a while. While the industry settles down - in revealing the alt meat winners and losers, it will still likely take a while longer to be able to assess if the industry has reached the end of the adoption curve. A close watch on Beyond Meat and others' profitability over the next few years will likely serve as a relatively strong proxy of adoption in the key markets of the US, China, and Europe.

Policy

What are the key topics legislators are tackling and how much influence can any of it expect to have on the industry?

Does the lack of a directly targeted, holistic legislative or regulatory response mark a potential drastic stop and reverse from policy makers further down the line?

Opportunity for a bottom up approach to policy making in the EU

US approach – more difficult to quality due to individual state oversee of approach however as a federal agency, the FDA has appeared to take an open collaborative approach

In terms of EU policy, the most direct addressal of the industry has been the recent rejection of amendments to the European Parliaments' Common Agricultural Policy which sought to ban vegan foods from using meat adjacent labels. More broadly, the main adjacent or relevant policy directives in the spotlight are the Farm to fork strategy and the European Commission's Cancer plan.

The top food policy considerations in the EU are led by Ursula Von der Leyen and are currently centred around nutrition, health and the impact of adopting a healthy lifestyle as a means of lowering the risk of cancer; and the impact of food supply chains on climate change, namely the carbon footprint of the 'source to plate'.

On the positive end of the scale, both these focus areas present an opportunity for the private sector to contribute to shaping the EU's existing sustainable food systems, linking alternative proteins as a partial solution to a range of health and environmental concerns. In this context, however the main potential threats to a supportive policy environment are also centred around these same issues the industry purports to solve.

People and planet – the pros and cons are intertwined

In terms of nutritional content, repeated challenges by sceptics and reported by the consumer goods media in the last few years note the alt meat industry is largely centred around processed or fast-food meat replacements. This type of media coverage has regularly been led by the Daily Mail, publishing research and external views or reporting directly to readers that vegans and vegetarians should be wary of companies seeking to exploit the trend with products that are no healthier than meat.

If these opposing voices grow stronger and without any noticeable acknowledgment from the mainly fast food element of the sector, we may see growing structural opposition with companies having to take pause about their formulations and marketing strategies, potentially weakening consumer trust, ultimately pausing or even reversing the almost complete adoption curve.

In terms of the focus on supply chain carbon footprints, a much less highlighted note is the reported role of Soya, a common ingredient in alt meat products, which has been associated with large-scale deforestation. A risk is that this point that may begin to gain traction amongst stakeholders, especially with the growing investor focus on ESG and the current global policy landscape agenda – this year which will be marked by and set to culminate with the United Nations Climate Change Conference, COP26, where global leaders will be determined to [“accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change”](#).⁸

Given there remains a fierce debate and fight from the farming industry against the labelling meat problematic,

should a spotlight fall on these risk factors, we will likely see a broader industry messaging play off between either angling products as a roadmap to greater sustainability, or for health consciousness. Sustainability has so far been the argument coming in ahead, most notably represented by recent comments from Bill Gates stating that “all rich countries should move to 100 percent synthetic beef” to tackle climate change.

Whatever positioning efforts industry makes, if this opportunity for bottom up regulatory and legislative change is properly leveraged by the various alt meat and protein subs sectors, it will be another positive indicator towards broader adoption and availability of these products across the EU.

Consumer Behaviour

What early indicators depict industry progress?

Media attention has more recently shifted towards the market and consumer dynamics in China and South East Asia. The progression points there perhaps more helpfully outline the distinctions in the conditions needed for faster adoption. In China the country's appetite for alternatives has grown rapidly – led by middle class consumer demand, itself driven by environmental concerns.

Major milestones in Asia include Singapore becoming the first country to give regulatory approval to sell lab-grown chicken meat in December 2020, and Nestle opening [Southeast Asia's first plant-based food production site](#)⁹ in Malaysia this April. Large players like Beyond Meat also marked China out early on as the “a key, long-term strategic region for growth”.

Such rapid progress and commercial attention across Asia could suggest that consumers are more willing and open to readily take on these products. The immediate, perceived need for an alternative to meat consumption may have pushed Chinese consumers further along Rogers' key adoption stages of understanding, persuasion, decision, implementation, and confirmation. A good example of the immediacy need, was cited in the Financial Times last year with David Yeung, chief executive of Green Common, a Hong Kong-based food distributor noting that “African swine fever was pushing Chinese groups to diversify their sources of protein.” Retailers will attest to the challenges of “educating” consumer, the benefits will need to be articulated to avoid any GM style backlash from consumer groups and activists.

What conclusions have been drawn so far and what does this mean for the future?

In the context of the adoption curve comparison approach in this paper, the most comprehensive third party commentary to date has come from Dan Altschuler Malek, managing partner at Beyond Meat investor Unovis Partners and former venture capital partner at New Crop Capital, an early investor in Beyond Meat. In the lead up to Beyond Meat's IPO he outlined to The Observer, [his assessment of the immediate need for a meat alternative](#)¹⁰ within the global food system, characterised by "not enough resources to sustain current levels of protein consumption."

In what can be interpreted as the early majority phase of the adoption curve, he also classed Beyond Meat as the third generation of plant-based products saying:

"The first was for vegans who, for philosophical reasons, sacrificed pleasure for beliefs in refusing animal proteins. The second generation developed products with taste and flavour. In the third generation, companies like Beyond Meat looked to develop products that are good enough on their own to consume without any sense of loss or substitution."

Most interestingly, he suggests that consumers may begin to "detach from the need for plant-based protein to resemble meat products", adding that "consumers still want something that they already know."

In the UK at least, if we were to take into account product availability and retailer action alone, it could be assumed that there is relatively strong demand for these products and that a broad part of the consumer population is at

least curious or towards the early majority stage of the curve in terms of having tried meat free alternatives. Until supermarkets or large-scale producers of both meat and alt meat products provide data on the ratio shift in consumption versus the rate of new products it will be tricky to work out.

Based on the growing, global commercial offerings and variety within the field. Alt meat, on the supply side at least would appear to be in the 'late majority' stage of the parabola. Using this framework, it's possible to suggest, as noted by Malek, that by the time the sector reaches the 'laggards' or 'sceptics' end of the curve, a more innovative form of production or preference may appear, in part starting a second wave progress curve. For now, the safest assumption is that previous sceptics will soon be converted to accept, plant based and alternative proteins as part of an increasing shift to a 'flexitarian' lifestyle.

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