

In focus

Putting the
consumer at the
heart of Technical



By applying the same consumer science framework we have deployed in R&D to the considerations of the Technical functions (e.g. Quality, Safety, Supply-chain) our research has called into question the long-held perception of the importance of six-sigma quality (a focus on precision and reducing the probability of 'defects') for some aspects of final product specifications.

We have uncovered that there may in fact be more degrees of freedom to leverage with product experience that can enable organisations, and by proxy, consumers, to deliver against broader environmental, social and governance (ESG) objectives without compromising commercial performance. Whilst this does require breaking from convention, there is no 'new science' or capability required to deliver these. And for those organisations willing to take the risk, we believe there are significant opportunities: financial, brand value and ESG.

Ultimately, this research aligns with the macro-indicators that one-size-fits-all business models have stagnated and are losing relevance. Business models, processes and frameworks that promote the agility needed to stay close to the consumer will ultimately succeed in an era of unprecedented change that we expect to continue.



Unprecedented change

Our industry is in a period of unprecedented change. The millennial effect has driven growth opportunities to emerging markets; the digital era has increased consumer expectations of personalisation; and social unrest is demanding greater transparency across all sectors and organisations. Many large companies are still adjusting, slowly adapting mature business models to reflect the new expectations. In the interim, financial pressures require globally relevant solutions across a regulatory landscape that is already fragmented and diverging further, despite shared sentiment about improvement health and environmental stewardship.

The millennial effect has driven growth opportunities to emerging markets; the digital era has increased consumer expectations of personalisation.



Putting the consumer at the heart of R&D

Industry is evolving from resource-consuming, mass-market business models with a one-size-fits-all approach, toward more circular and niche-market business models. As a consequence, larger corporations have looked to challenger brands and start-ups to rekindle some of their innovative flair.

The ability of these start-ups to iterate and 'pivot' quickly to find winning propositions within tight timelines and budgets is hugely appealing. In essence, larger brands have acknowledged that at times, they have strayed too far from the consumer. But this is changing, and many companies now fully understand the power of bringing in the consumer earlier up the innovation pipeline. The concept of a single 'perfect product' should no longer be the goal but rather a series of products designed to deliver against specific consumer need states.

Technical disciplines slower to react

Whilst R&D has adapted to introduce greater consumer insight earlier in the innovation process, many other functions have not. Technical, Quality and Food Safety functions are often still applying the old rules: a linear development process almost wholly informed by science and regulation – the consumer is rarely consulted. And yet, given their knowledge and influencing power throughout the supply chain, this is potentially where large multinationals can truly differentiate themselves, particularly where considering transparency and Environmental, Social and Governance (ESG) credentials.

So we asked ourselves the question...

...what if we put the consumer at the heart of Technical?

As social trends continue to drive greater transparency of environmental and ethical stewardship, we opted to answer this question in the context of sustainability. We felt that struck a nice balance between corporate, regulatory and consumer agendas, whilst still providing the simplicity appropriate for a worked example. Here's what we learned...

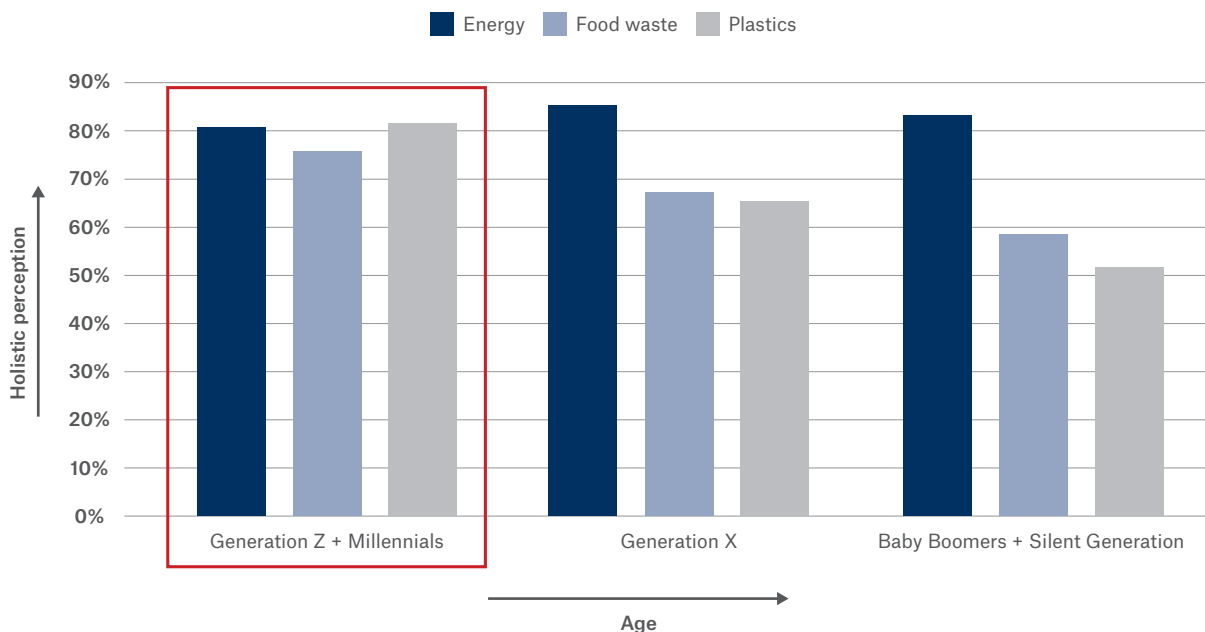
Sustainability means different things to different consumer groups

Although the need for greater sustainability is all but ubiquitous across industries and markets, **our research indicated that the consumer perception of sustainability differs by region, time, and demographic.** For example, whilst our survey of UK consumers identified energy, food waste and plastics as key sustainability concerns, if we had asked the same question of an Indian cohort, we would expect 'water resources' to feature heavily, as drought and flooding are a commonly experienced a symptom of climate change in this market – something that is backed up by Google Analytics.

Equally, our research demonstrates a generational difference between consumers as to what the word 'sustainability' means to them. In the UK, Energy (e.g. CO2e) features highly across all demographics and for the older generations was the key indicator. In contrast to this, the younger generations have a much broader understanding of what sustainability is and means, and hence a more holistic expectation of how businesses should be performing to meet sustainability goals.

Ultimately, opinion differences are vast but you must be conscious of this in order to communicate to each consumer group appropriately.

Q. Which of the following (multiple choice) do you associate with the word 'sustainability'?



Focus on Food Waste

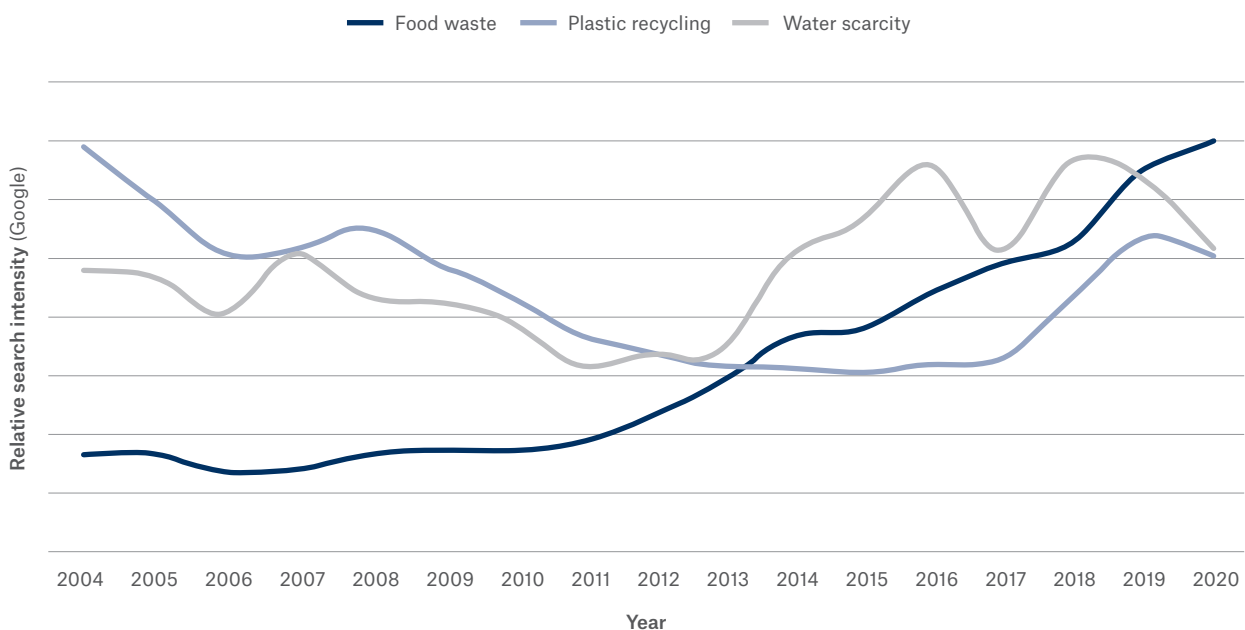
At Leatherhead Food Research, we are often scouting for industry-changing trends and to do this we seek consumer, regulatory and scientific evidence. Food-waste has all of these indicators.

From a scientific perspective, the *IPCC Special Report on Climate Change and Land* from August 2019 states that 25–30% of total food produced is lost or wasted, and is a contributing factor to our greenhouse gas emissions. This highlights that food waste is not just a concern around wasting money – it has far wider implications.

These concerns have also been acknowledged by the European Commission (EU) which has highlighted that *'being more efficient will save food for human consumption, save money and lower the environmental impact of food production and consumption.'* We are now seeing regulatory change to this effect, with more novel ingredients emerging to try to optimise the use of 'by-products'

and reduce the wastage produced. A recent example of this is the use of the pulp and pulp juice from cocoa fruit (*Theobroma cacao*), which was given approval on the list of authorised novel foods by the EU in February 2020.

From a consumer perspective, confusion on the shelf life of products is putting on pressure to streamline the dating system and make it clearer for consumers. Retailers such as Tesco are responding by starting to remove dates from certain fresh produce products like apples, citrus fruit, potatoes and onions in an effort to help reduce the amount of food thrown out at home before it has really 'gone off'. We have also seen the relative search intensity of 'food waste' surpass both water scarcity and plastics recycling in global Google search trends.

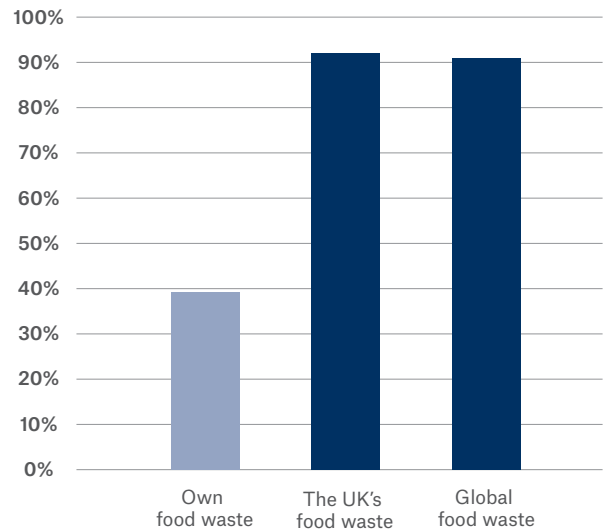


It's your problem

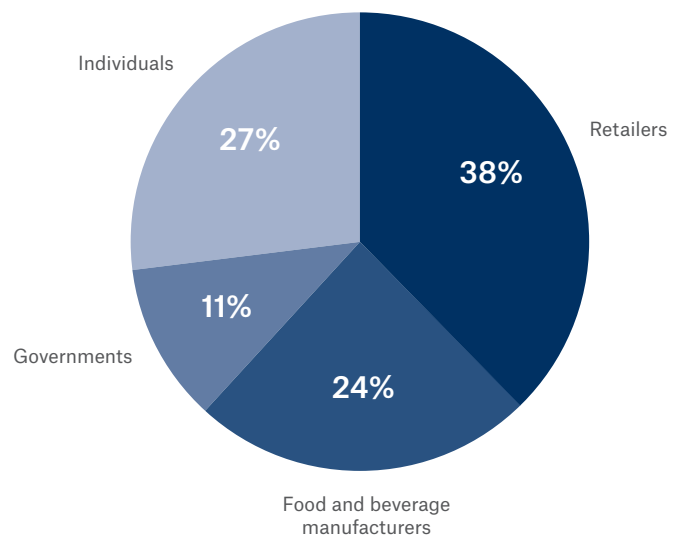
Whilst there is clear concern from consumers about food waste at both a national and global level, there is comparatively little concern at the individual level. In essence, consumers do not feel empowered to have an impact and subsequently see this as an issue for large corporations to address.

Consumers see food waste as an issue for large corporations to address.

Q. How concerned are you about the amount of food waste which you, the UK, and the globe are creating?



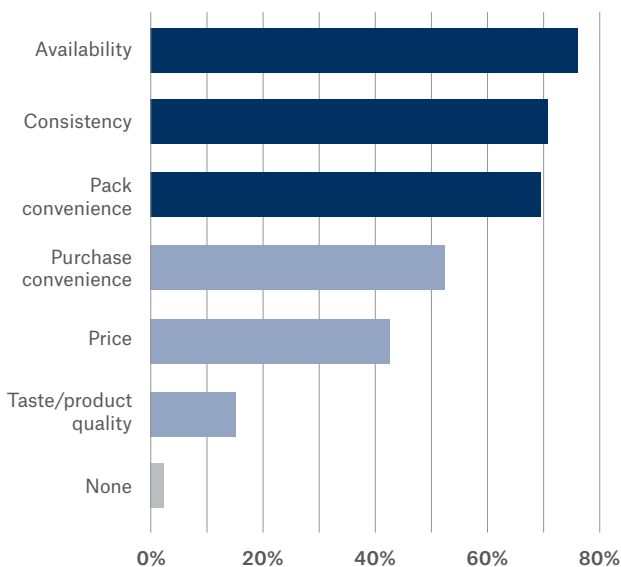
Q. Who's responsibility is it to address food waste? (Gen Z and Millennials)



You have permission to shift the goal posts

Whilst individual accountability is resisted, particularly with younger generations, consumers are willing to relax some of their expectations in order to support businesses to achieve this. Our research suggests that while people are currently less willing to sacrifice factors such as convenience of purchasing goods, on price or particularly on taste (i.e. the sensory experience), things like seasonal sustainability, packaging convenience and product consistency (e.g. 'deformed'/ misshapen fruit and veg) can be compromised to a certain degree in order to help reduce food waste in some way.

Q. What would you be willing to compromise to help reduce food waste?



This is significant because it challenges a long-held perception in manufacturing. In reality, driving for the production of precisely the same product 7 days a week, 465 days a year, bears little resemblance to what consumers are asking for. And because of that, it provides additional degrees of freedom to the Technical team.

It opens up opportunities, for example, to consider packaging solutions that are less convenient to the consumer but more reflective of local recycling infrastructure; or to increase biodiversity in agricultural practice and climate resilience throughout the supply chain by enabling a larger variety of crops to be incorporated into the manufacturing process, even though that may reduce consistency availability of final product production.

This is significant because it challenges a long-held perception in manufacturing. In reality, driving for the production of precisely the same product 7 days a week, 465 days a year, bears little resemblance to what consumers are asking for.

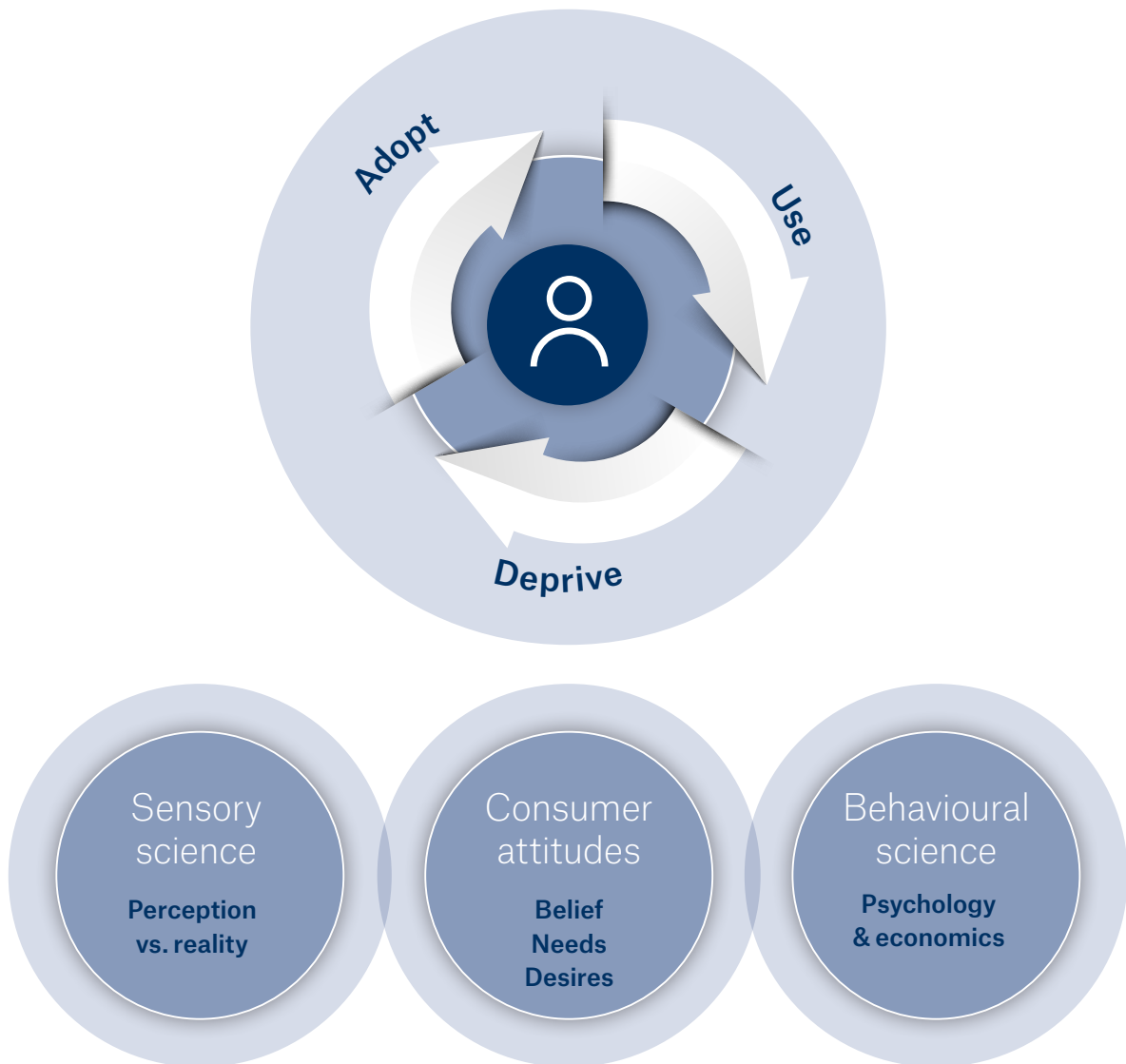
Realising new opportunities

There are of course, scientific, regulatory, consumer and commercial challenges to realising these opportunities but for the purpose of this discussion, our focus will remain on the consumer aspect.

One of the simplest but most effective frameworks for incorporating consumer perspectives into product or process design is the Adoption-Use-

Deprivation model. Using this, we can apply a blend of sensory, consumer and behavioural sciences to unlock insight into the key bottle-necks of the consumer experience.

Key considerations for each stage are discussed below.



The Adoption - Use - Deprivation framework

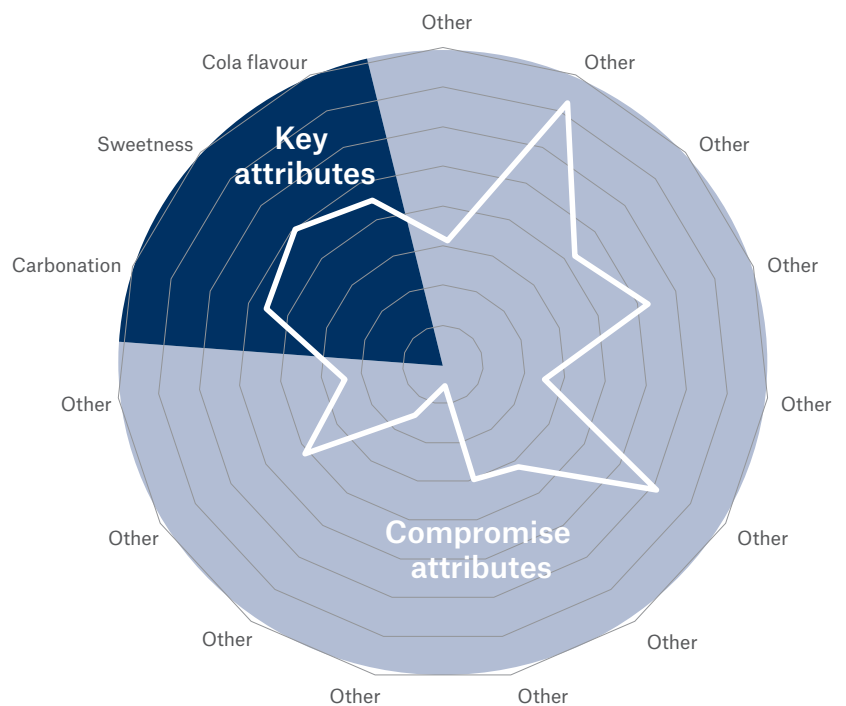
Adoption

There are an enormous number of factors that influence our decision to select a product and the exact mechanisms for this remain poorly understood. It is common to simplify decision making into 'sub-conscious' or 'conscious', often dubbed system 1 or system 2 respectively, but in reality, our thought processes flux somewhere on the continuum between the two. To trigger the selection of a new product, it is generally thought that activating more conscious, fact-based decision making is best i.e. system 2. Consequently, you need to make sure the relevant benefit information is clearly communicated on pack or at point of sale, alongside appropriate tactics to disrupt the norm for your target consumer and thus promote a more deliberate decision-making process.

Use

Our research suggested that there were factors of user experience open to negotiation, with the notable exception being a product taste sensory experience. Given that a product's sensory experience is often dominated by a sub-set of sensory attributes, we are able to define a series of 'key attributes' (i.e. those that must be maintained at all times) and 'compromise attributes' (i.e. those that can be modified without detrimentally impacting consumer satisfaction). To make that more real, simplistically, if you increase carbonation of a fizzy drink, many of the other attributes become less impactful – so we know carbonation is a key attribute, whilst colour could be considered a compromise attribute.

Fig. Key and compromise sensory attributes



Understanding this introduces the potential to realise supply-chain flexibility that may otherwise have not been considered and hence satisfy other objectives e.g. to achieve sustainability metrics.

As we evolve to 'Industry 4.0' and embrace the ever-growing digital world, this data can also be incorporated into sensing and real-time analytics. We already have the ability to link analytical data to sensory profiles, and sensory profiles to predicted consumer experience. Connecting the three gives us the ability to offer **real-time control of manufacturing directly correlated to consumer response.**

Deprivation

Deprivation represents how the consumer may feel after the product has been used, or when a competitor product is used instead. For example, for many the deprivation experience of consuming a take-out coffee is disappointing as it ends with disposing of a cup that looks and feels like it should be recyclable, but is often disposed of in non-recycling.

The personal care industry is great at delivering strong deprivation experiences, for example the way many moisturisers leave a sheen to indicate efficacy and a lasting scent to evidence the product's superiority long after use. Although these indicators often deliver little in the way of functional (moisturising) benefit, they leave the consumer feeling like the moisturiser is working, and by proxy, products that don't deliver the same indicators are deemed less effective.

In the context of food and beverage, it's important to consider what lasting indicator can be provided to evidence efficacy, to retain engagement or incentivise continued use, especially if you are asking your consumers to compromise on other factors like convenience. There is no single solution to this, but it must reflect your consumer group's drivers. On the basis of our research, an example of that could be energy or CO₂e in the case of the older UK generation, and will likely need to summarise the aggregated impact of their choices at scale i.e. national and global.

Conclusion

Our research indicates that incorporating a consumer perspective into Technical challenges can uncover more degrees of freedom than anticipated, which in turn can be leveraged to deliver against broader environmental, social and governance objectives without comprising commercial performance.

Whilst this does require breaking from convention, there is no 'new science' or capability required to deliver these and for those organisations willing to take the risk, we believe there are significant opportunities: financial, brand value, and ESG.

Ultimately, this research aligns with the widespread indicators that one-size-fits-all business models have stagnated and are losing relevance.

Business models, processes and frameworks that promote the agility needed to stay close to the consumer will ultimately succeed in an era of unprecedented change that we expect to continue.



Recommendations

To take advantage of our research findings and understand what a pilot could look like to test this with your product there are four stages we would recommend following:

1

Understand your target consumer – engage your insight team or commission research to delve into the nuances of what makes different consumers tick

2

Review the technical challenges that are preventing your portfolio delivering against your consumer’s agenda; consider this in parallel with the corporate agenda

3

Map out the essential requirements and the areas that can be compromised

4

Define the limits of these areas and develop a mechanism to test and learn to refine these

About Leatherhead Food Research ▾

Leatherhead Food Research provides expertise and support to the global food and drink sector with practical solutions that cover all stages of a product's life cycle from consumer insight, ingredient innovation and sensory testing to food safety consultancy and global regulatory advice. Leatherhead operates a membership program which represents a who's who of the global food and drinks industry. Supporting all members and clients, large or small, Leatherhead provides consultancy and advice, as well as training, market news, published reports and bespoke projects. Alongside the member support and project work, our world-renowned experts deliver cutting-edge research in areas that drive long term commercial benefit for the food and drink industry. Leatherhead Food Research is a trading name of Leatherhead Research Ltd, a Science Group Company.

help@leatherheadfood.com

T. +44 1372 376761

www.leatherheadfood.com

About Science Group plc ▾

Science Group plc offers independent advisory and leading-edge product development services focused on science and technology initiatives. Its specialist companies, Sagentia, Oakland Innovation, OTM Consulting, Leatherhead Food Research and TSG Consulting collaborate closely with their clients in key vertical markets to deliver clear returns on technology and R&D investments. Science Group plc is listed on the London AIM stock exchange and has more than 400 employees, comprised of scientists, nutritionists, engineers, regulatory advisors, mathematicians and market experts.

Founded in 1986, Science Group was one of the founding companies to form the globally recognised Cambridge (UK) high technology and engineering cluster. Today the Group has 12 European and North American offices.

info@sciencegroup.com

www.sciencegroup.com