



**Global Dairy Sector –
Trends and opportunities**

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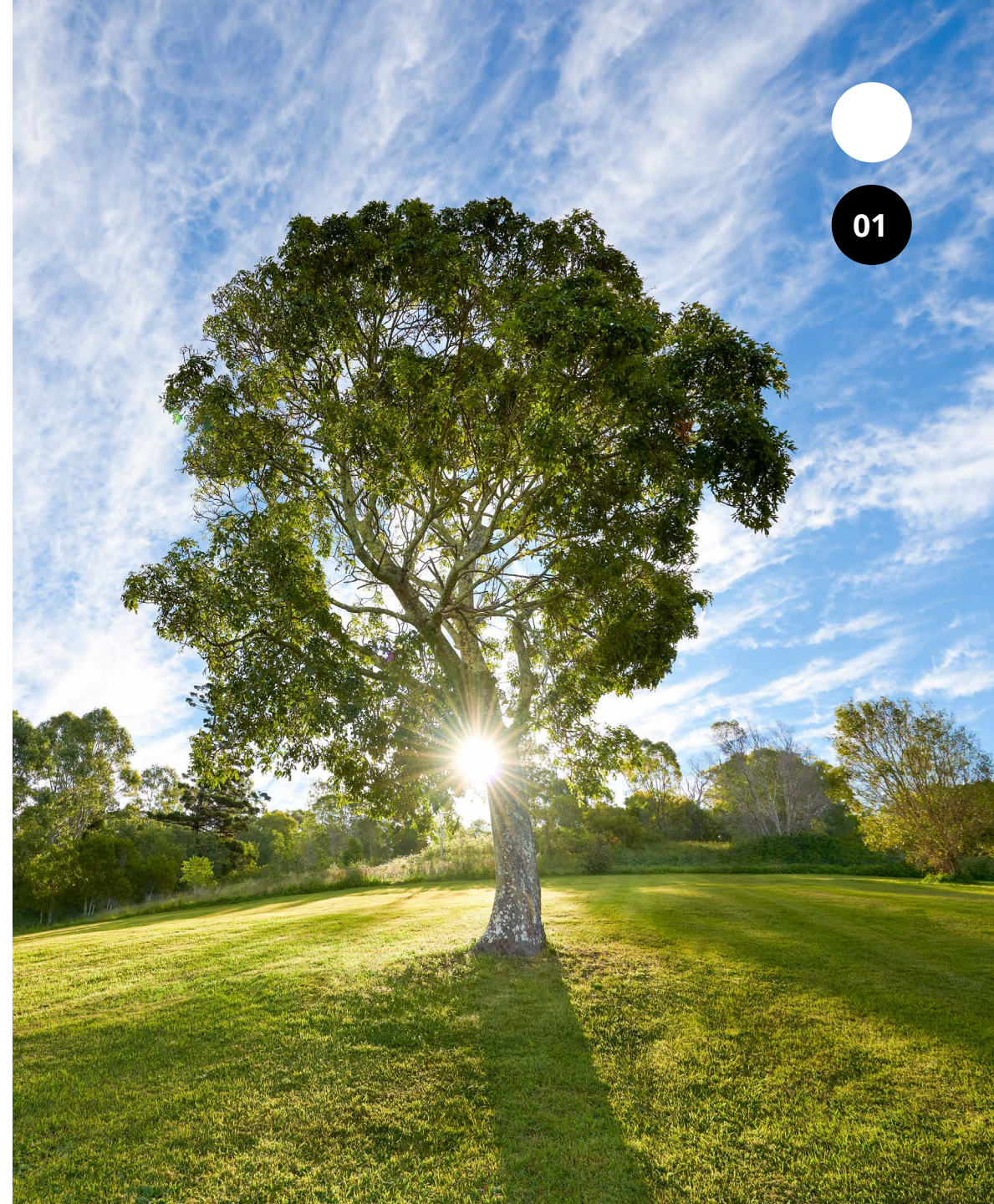
Executive summary



Executive Summary

The global dairy sector is currently going through a period of turbulence. Slowing demand from China, Russia's trade embargo and the removal of EU milk quotas, resulted in a period of excess supply and low prices.

Despite this, the long term outlook for the sector remains positive. Rising populations and changing diets are increasing demand for dairy. As incomes rise and nations become increasingly urbanised, individuals tend to receive more of their calories from proteins (including dairy) as opposed to basic carbohydrates (mostly grains). Global demand for dairy is expected to increase by 2.5 per cent per annum to 2020, largely driven by increasing urbanisation and rising incomes in emerging markets.¹



Executive summary

Challenges and opportunities

While the dairy sector is currently dealing with a number of challenges, favourable long term consumer trends and developing technologies provide a number of opportunities. This report looks at these challenges and opportunities at the producer, processor and retailer levels. It then outlines some of the overarching themes presented by these challenges and opportunities, and looks at how the dairy industry as a whole needs to adapt.

Producers

At the producer level, emerging technologies and the 'datafication' of agriculture are providing farmers with the potential to obtain quantifiable information to continuously measure and monitor farm operations and react accordingly. Farmers who can complement these technologies with suitable operational and commercial practices could see profitability increase significantly. These

technologies can also help farmers expand production in a profitable and sustainable manner which is particularly important in the volatile post-EU quota era.

Processors

Evolving consumer trends such as the demand for healthy and 'clean label' products, increased demand for 'functional foods' and the growth in protein consumption will drive innovation in the sector. While having strong technological capabilities is key to taking advantage of these trends, it is not sufficient. The ability to identify and exploit consumer insights from local markets is also vital in generating increased value for consumers and higher margin products for producers.

These products must also be delivered in a safe and secure manner. The dairy industry has seen a number of scandals in recent times, and firms must take measures to ensure that their supply

chains are as secure as possible in order to maintain their customers' trust. New technologies such as blockchain, a distributed and publicly-accessible 'ledger' which records transactions in a tamper and revision-proof way, could potentially be used to track what goes into a product and who handles it along the way.

Retailers

A number of trends such as the growth of a healthy snacking culture, higher food consumption outside of the home and the growth of online and mobile shopping are changing the way food is being bought and consumed. Dairy is at the forefront of these trends as a convenient and relatively cheap source of protein. Retailers must adapt to these trends through better use of technology and data to target customers with tailored offers and ensure that they can match supply and demand in smaller stores through better inventory management.

Executive summary

Adapting to the challenges and opportunities

Looking across these trends, it is clear that changing consumer demand patterns are impacting food production and consumption at all stages of the value chain. Deloitte research² has identified a number of new value drivers for consumers when making their food choices. The 'Traditional' value drivers of price, taste and convenience have been supplemented by 'Evolving' drivers of health and wellness, safety, social impact and experience. Overarching these drivers is a desire for transparency from food companies. 5,000 US consumers were surveyed as part of the research, roughly half of whom said their purchase decisions are significantly influenced by these Evolving drivers. What is more, these findings were pervasive across regions, age and income groups.

The research therefore suggests that purchase decisions are increasingly based on "product plus" factors, such as specific ingredients, how the product was made, where it was made and corporate values of the manufacturer and retailer, amongst others. This requires that firms pay close attention to all aspects of food production from farm to fork. Health and wellness will certainly be a key consideration for innovation and new product development, but firms must think beyond individual product attributes to factors such as how the product is produced, the nature of the supply chain, etc. Firms must also be able to communicate this holistic approach to consumers and provide them with relevant information in an open and transparent manner. This is particularly important in an era where misinformation and food safety issues have led to distrust amongst many consumers. These consumers now have access to more information than ever before, while social media provide platforms for their displeasure.



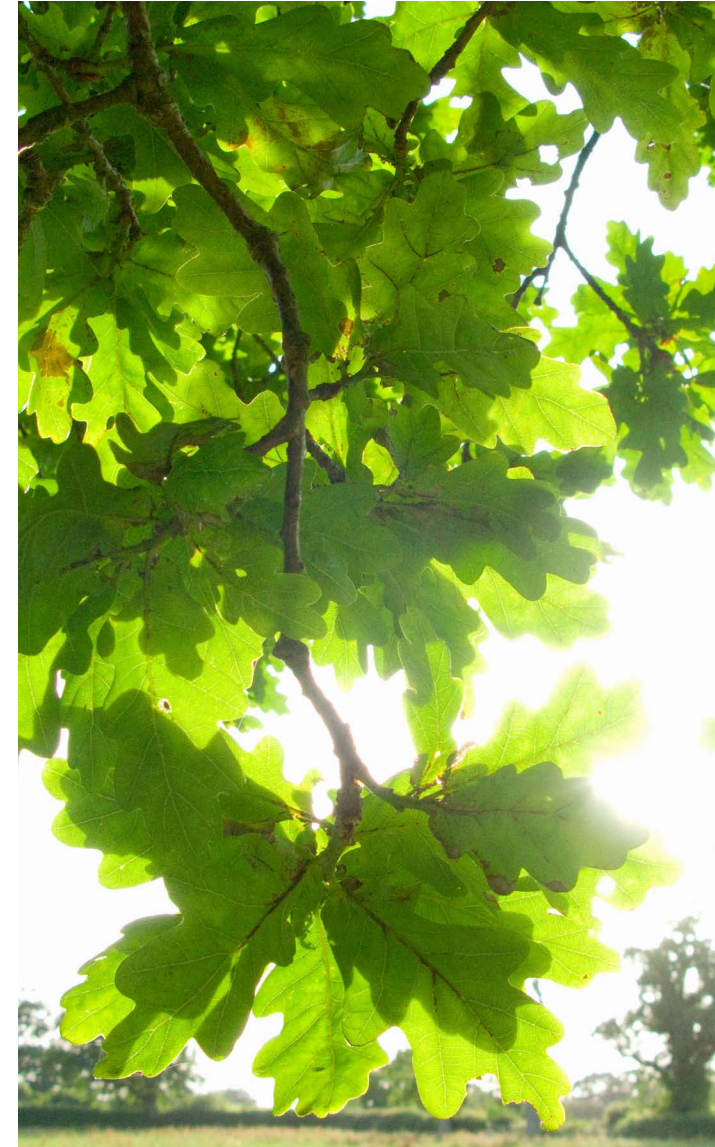
Executive summary

In summary, meeting both Traditional and Evolving demands in a dairy context will require producers, processors and retailers to provide consumers with nutritious, safe, convenient and value for money options.

- Producers must take advantage of the 'datafication' of agriculture to expand production in a sustainable manner.
- Processors will need to take advantage of their technical capabilities to develop new products, but also ensure that their production systems and supply chains are as safe and secure as possible.

- Retailers must make better use of technology and data to adapt to changing consumption patterns and offer consumers the food they want, when and where they want it.

Furthermore, actors at all stages of the value chain will need to work hard to maintain the trust of a more demanding and empowered consumer.



Challenges and opportunities in the Dairy Sector



Producers

The professionalisation of farming

Running dairy farms on a 'professional' (and in some cases industrial) basis has been commonplace for some time in a number of countries, most notably the US. However, regardless of scale, evolving technologies and improved farm management practices will play a greater role on dairy farms globally in the coming years. Successful farmers will need to focus on three key aspects to grow their enterprise in a sustainable and profitable manner.

Take advantage of new technologies

At a technical level, emerging technologies and 'datafication' of agriculture are providing farmers with quantifiable information to continuously measure, react, and monitor farm operations. This can provide farmers with the insight to ensure that all decisions contribute positively to farm efficiency and profitability. Relatively simple technologies to assist with grass and herd management are becoming more widespread, and may signal the beginning of a wider trend. Various smartphone data applications, robotics (such as automated milking parlours), drones, micro-sensor technology and satellite systems are all likely to become more commonplace on the farms of the future.

Complement technology with suitable processes

These technical systems must be complemented by suitable operational processes to maximise their benefits. For example, while various technologies can be used to measure grass growth, it is up to the farmer to ensure that this data is used to rotate pastures in a way that optimises grass usage.

Challenges and opportunities in the Dairy Sector

Enhance commercial skills

Finally, commercial awareness and solid business skills are necessary to ensure that farmers have a clear view on the profitability of their farm and the main drivers of that profitability. Cash flow management has always been a central concern of farmers, and will continue to be so - particularly in the context of volatile agricultural markets.



Producers

Ending of milk quotas

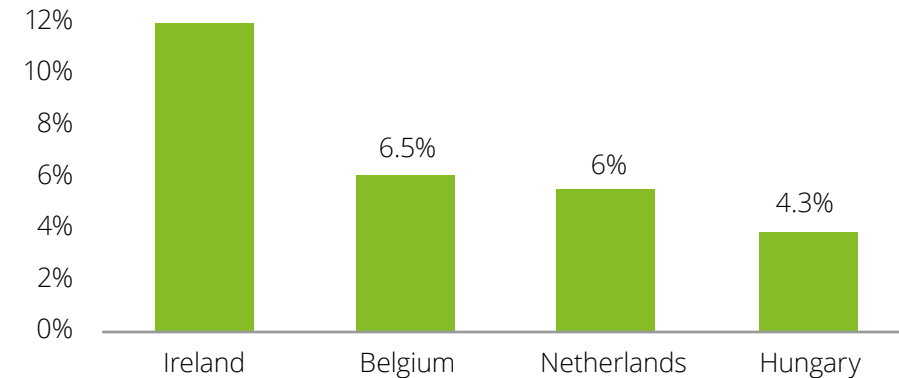
The removal of EU milk quotas* in April 2015 has brought about a shift in the European dairy sector. While increases in milk production have been concentrated in a relatively small number of countries (such as Ireland, Belgium and the Netherlands), it has provided individual dairy farmers throughout Europe with opportunities for expansion.

*Milk quotas were introduced by the European Union in 1984 to manage excess supply in the market at the time. They put a cap on the amount of milk which farmers could sell each year and imposed a levy on those that exceeded their cap.

Change in farm management

The removal of milk quotas is also leading to a fundamental change in how farms in the EU are managed. When production levels were restricted, profit maximising farmers were required to minimise their cost per kilogram of milk solids produced, ensuring that cost management was the primary focus. In a post quota environment, land is typically the limiting factor. The focus therefore changes to **maximising the level of profit per hectare**.

EU Countries with the greatest increase in milk deliveries since removal of quotas (Jan-Nov 2014/Jan-Nov 2015)



Source: MS Communications to Eurostat

Challenges and opportunities in the Dairy Sector

Implications for farmers

This is a significant change in emphasis. While European farmers must still keep a tight rein on costs, they must now balance cost considerations against the marginal increase in profit they can achieve for higher levels of inputs. For pasture based farms, this comes down to managing a number of key profit drivers, most notably:

- grass and fodder management;
- achieving the optimal stocking rate per hectare; and
- promoting high genetic merit animals (milk production and fertility)

Doing this will require a more systematic, data-driven and business-like approach to dairy production. But it will be necessary if European farmers are to take full advantage of the opportunities presented by quota abolition.



Producers

Volatility and Risk

Volatility is a fact of life in farming. Not only do dairy farmers face volatility with regard to milk prices, but also factors such as input costs, animal health and weather. Having effective practices to manage this volatility is therefore crucial for long term success.

Managing volatility at farm level

At a farm level, the first defence is efficiency.

When milk prices are low, farmers need to exercise even tighter controls on costs to maximise the returns from fixed factors of production. For pasture based systems, efficient use of grass and fodder is vital.

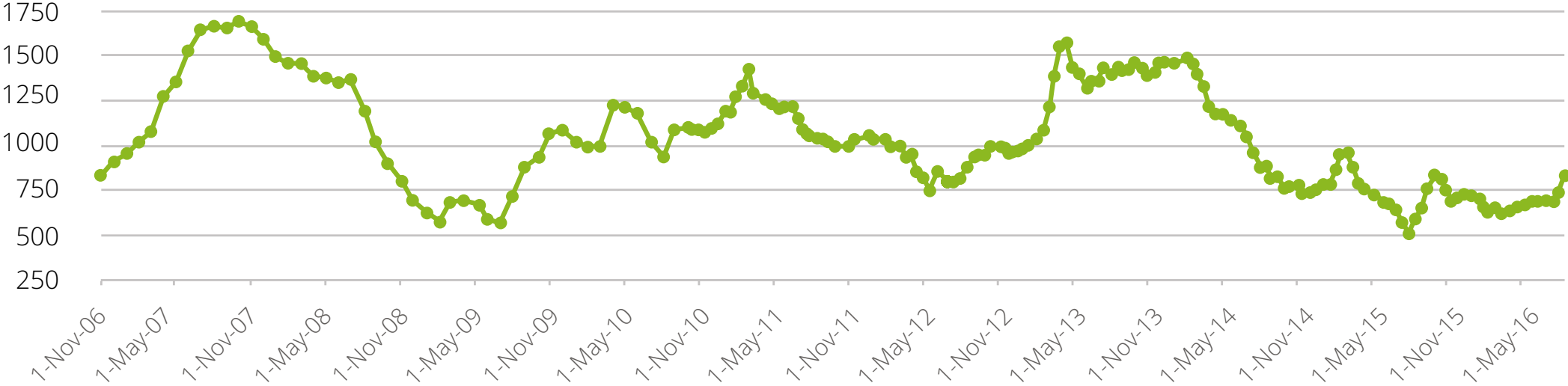
Efficiency is particularly important during phases of expansion. Certain farmers making reasonable returns at relatively high milk prices may decide to expand, only to find that they start losing money as prices turn. If this is combined with high levels of debt, the enterprise may be put at risk. Farmers should therefore attempt to increase output through better input usage and farm management practices before making substantial capital investments. **'Skill before scale'** should be the maxim for farmers intent on expanding in today's volatile market.

Managing volatility at processor level

At processor level, we have seen moves by a number of dairy companies to help farmers mitigate risk by offering suppliers fixed price contracts for up to three years (in some cases with adjustments to reflect changes in input costs and market prices). Farmers can then lock in a portion of their expected output at a relatively fixed price and plan their investments accordingly. Processors can in turn offer customers fixed product prices, providing an example of how coordination along the supply chain can help manage risk.

Challenges and opportunities in the Dairy Sector

GDT Price Index over 10 years



Products included are anhydrous milk fat, butter, butter milk powder, cheddar, lactose, rennet casein, skim milk powder and whole mild powder.

Source: Global Dairy Trade Price Index <https://www.globaldairytrade.info/en/product-results/>

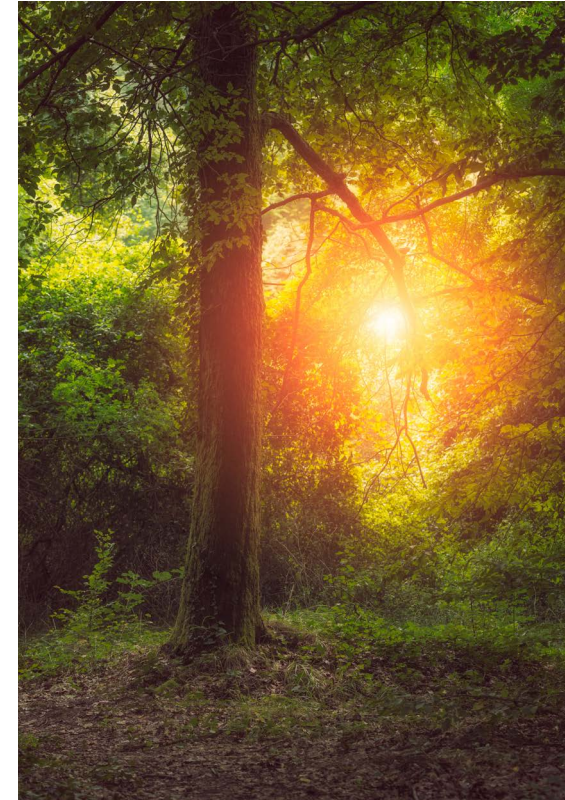
Challenges and opportunities in the Dairy Sector

Producers

Environment and Sustainability

Sustainability presents both a challenge and opportunity to the dairy sector at each stage of the supply chain. Greenhouse gas emissions (in particular methane from cows and carbon from manufacturing) and food waste are great areas of concern. A UN Food & Agriculture Report entitled 'Livestock's Long Shadow'³ states that the livestock sector is responsible for 18% of overall greenhouse gas emissions in CO₂ terms – more than that generated by the entire transportation system. However, developing sustainable practices can both reduce input costs and develop a positive reputation among consumers.

Minimising input and distribution costs are critical steps in the sector's overall ability to deliver long-term profitability. Growth will also emerge through developing sustainable practices which are in alignment with the preferences of the environmentally conscious consumer, maximising renewable resources to reduce waste and input costs, and actively embracing audited, sustainable food production systems.



Challenges and opportunities in the Dairy Sector

Mounting pressure to 'go green'

Growing pressure from government, non-profit organisations and consumers alike is encouraging food companies to develop sustainability strategies and to set targets for waste and greenhouse emissions reduction. With additional regulation in this area, it will become increasingly important for collaboration along the supply chain to reduce waste and improve energy management, both on-farm and in-factory.

The Consumer Goods Forum has committed to cutting its members' food waste in half by 2025. This is in line with the United Nations' sustainability goals for 2030 to halve per capita food waste at consumer level and reduce food

losses along the production and supply chains. Furthermore, the appearance of Corporate Social Responsibility policies and carbon footprint disclosures are becoming commonplace in company annual reports, exerting pressure on other firms to follow suit.

New technologies and applications

While the development of waste-to-fuel systems using methane to produce electricity are quite commonplace, researchers are now looking at additional applications to use the significant levels of methane generated by livestock across a range of industries and to support a reduction in its impact on CO₂ emissions.

In the Netherlands, research is underway to explore the use of technology to produce bio-plastics, bio-textiles and bio-paper from methane. Researchers, farmers and the Dutch Government are working together to develop these eco-friendly products which, if successful, may provide a sustainable source of bio-materials.

Ensuring the success of this project has added significance for the Dutch economy as the country exceeded its EU-agreed 'phosphate ceiling' in 2015. This may have severe implications for Dutch farmers and the wider Dutch economy as a cull of up to 100,000⁴ dairy cows may be required in order to drop below this ceiling in future years.

Challenges and opportunities in the Dairy Sector

Marketing a green image

The ability to market a sustainable, green brand image can attract customers and is an incentive for farmers and manufacturers alike to adopt more sustainable practices. Dairy companies who operate in countries where the feeding system is predominantly pasture-based have particular scope to capitalise on their green brand image when marketing dairy products.



Origin Green – Irish National Agri-food sustainability initiative

Origin Green is a national sustainability programme for the Irish food and drinks industry. It was launched by Bord Bia (a state agency with the aim of promoting sales of Irish food and horticulture domestically and abroad) in 2012. The overarching goal of the programme is that every farm and food manufacturing business throughout Ireland will be on the road to sustainable production by the end of 2016.⁵

At a producer level, participating farms are measured on factors such as carbon footprint, water and energy usage and biodiversity. At a processor level, manufacturers are assessed on targets in the areas of raw material sourcing, the manufacturing process and social sustainability.⁶

To date a total of 524 companies have signed up to the Origin Green Programme, including all of the major dairy sector players.

As part of Origin Green, Bord Bia launched The Sustainable Dairy Assurance Scheme (SDAS) in 2013, with a view to improving the performance of Irish dairy farms in relation to the sustainable production of milk. The scheme sets out requirements for best practice on Irish dairy farms in animal health and welfare, land management, biosecurity, safe farming practices and the production of safe milk.

Further, the SDAS calculates the greenhouse gas emissions of each participating dairy herd annually and provides feedback to each farmer to help them to improve the sustainability performance of their farm.⁷ It is now being implemented on nearly all of Ireland's 18,000 dairy farms.

These national level initiatives play well with the image of Ireland as a green and sustainable source of dairy, and will appeal to consumers for whom health & wellness and environmental issues are a major concern.

Processors

Adapting to a more informed and health conscious consumer

Ageing populations and rising obesity and diabetes levels in the West, coupled with an increase in research linking diet to health, has made consumers more conscious of their nutritional choices. This has led to greater demand for healthy options and 'clean label' products. Consumers are increasingly interested in protein for its long list of health benefits—from muscle building and exercise recovery to weight loss, satiety and healthy aging. Dairy companies are taking advantage of this trend, with many adding extra protein to their products.⁸

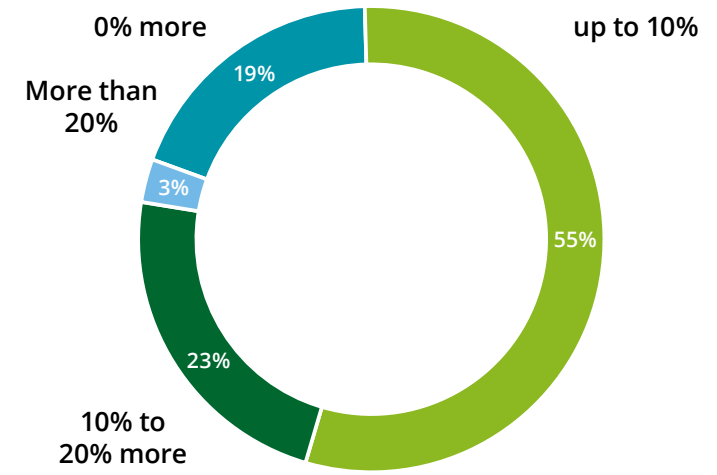
Health and wellness

Consumer demand for healthy products is growing and this is being reflected in spending patterns. According to Deloitte's 2015 American Pantry Study, 74 per cent of consumers pay close attention to the nutritional content of the foods they purchase.⁹ Further, the study found that 55 per cent of respondents are willing to pay up to 10 per cent more for a healthy version of a product, and 23 per cent are willing to pay between 10 to 20 per cent more.¹⁰

The dairy sector is well positioned to capitalise on this trend, due to the increasing use of protein for satiety, training and weight management. Furthermore, there is a growing demand for 'functional foods' which carry specific health

benefits. Dairy is playing a key role in this sector, through products such as probiotic yoghurts and cholesterol-lowering butters. Being able to attach specific and scientifically proven health claims to products is a vital element in increasing margins in this market.

How much of a premium are consumers willing to pay for healthier versions of products?



Challenges and opportunities in the Dairy Sector

Demand for 'clean label'

Allied to the growth in healthy eating is the growing demand for foods which are perceived to be 'clean', 'natural' and 'free from'. 'Cracking the Clean Label Code', a study of 1,000 consumers in the UK and Russia, has identified a high demand for clean label products in the dairy sector.¹¹ The study found that 70 per cent of those purchasing dairy and bakery products are aware of clean label claims and say these claims influence their buying decisions.¹²



Processors

Adapting to a more informed and health conscious consumer

The most successful firms in this environment will be those that can limit additives and clearly demonstrate the nutritional value of their products, ideally backed by scientifically proven health claims.

Demand for organic and GM-free products

There is a growing interest in natural and organic products. Organic agriculture has a reputation for catering to a high income niche. However, the market is expanding beyond affluent buyers to those who have more interest in food quality and safety, while a desire for GM free ingredients has also emerged as a key concern for some consumers. Currently, under EU regulation, genetically modified foods must not be put on

the market unless they have been approved by the EU, and foods containing GM ingredients must make a declaration on their labels. However, there is no requirement to declare where an animal has been fed by GM-feed.

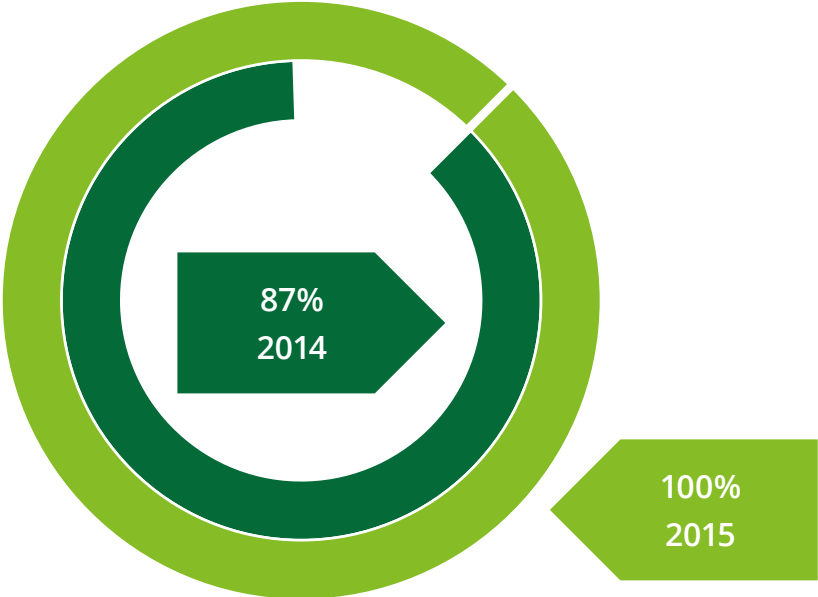
The need for transparency

This growing health consciousness, combined with the wealth of information available to today's consumer, has created a strong desire for openness and transparency. This issue is of particular importance to food companies, which are suffering from a lack of trust amongst consumers. Deloitte's 2014 Social Media Survey found that consumers are 3.4 times more likely to harbour negative sentiment about food

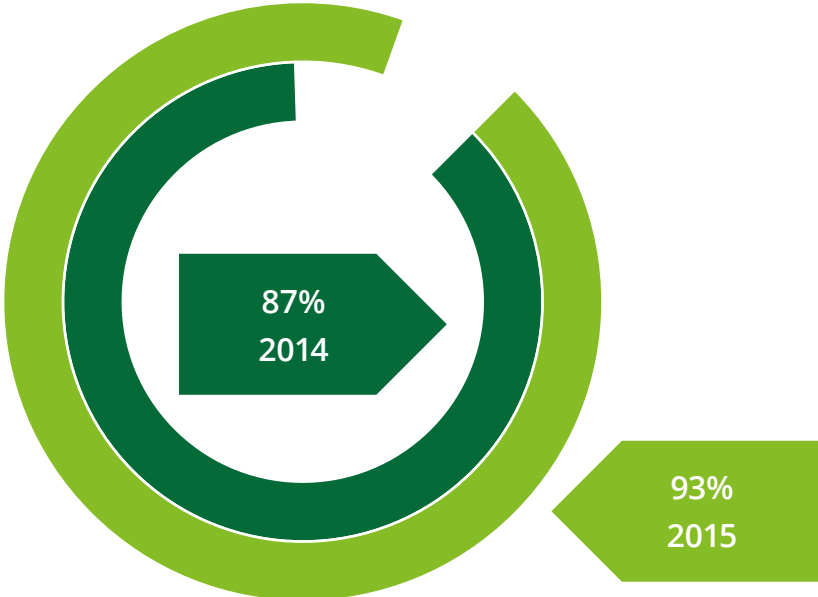
companies than a cross-industry average.¹³ The tendency toward distrust is most pronounced amongst Millennials, with a recent Mintel report stating that two in five U.S. Millennials (43 percent) agree they do not trust large food manufacturers compared to just 18 percent of non-Millennials.¹⁴

Food companies must work hard to gain trust in the face of a more health conscious, informed and empowered consumer. The importance of the issue is illustrated by the fact that all Consumer Goods Forum members are implementing programs to offer consumers healthier products, while the vast majority now have transparency programs in place.¹⁵

Challenges and opportunities in the Dairy Sector



Companies implementing programs that offer consumers a range of healthier products



Companies implementing programs that provide transparent, fact-based information that will help consumers and shoppers make informed product choices and usages

Source: The Consumer Goods Forum, Health and Wellness Progress Report 2016, Deloitte Touche Tohmatsu Ltd. <https://www2.deloitte.com/global/en/pages/consumer-business/articles/health-wellness.html>

Processors

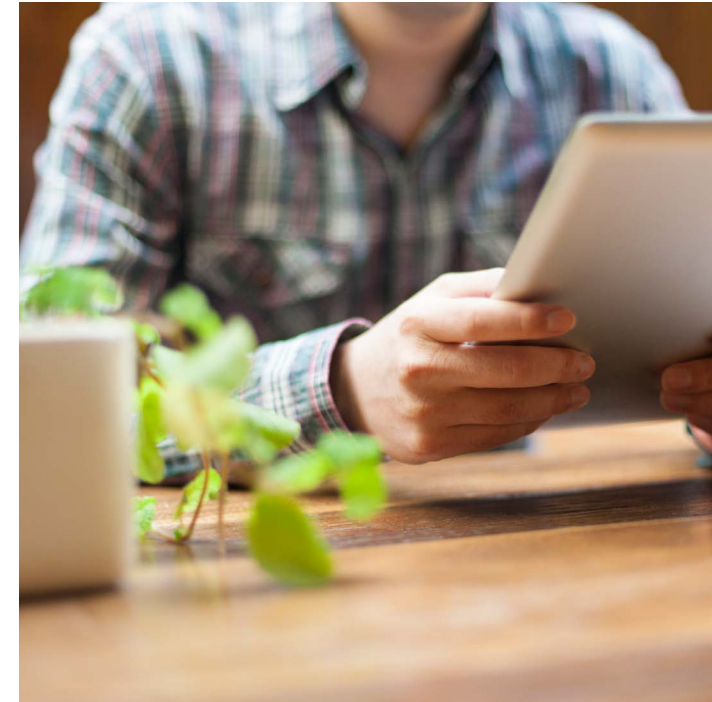
Innovation

Innovation to drive margins

Innovation is becoming increasingly important in the food industry as a means of driving margins. Retailers and supermarkets in particular have considerable buying power and can put pressure on margins, particularly in an era when quality own-brand alternatives to traditional brands are widely available. As products become more commoditised, one of the most effective ways of raising margins is through product innovation. Furthermore, higher margins can insulate firms (and potentially the farmers who supply them) against commodity price swings.

Downstream collaboration

Technical capability is one part of the equation for successful innovation, but it must be matched by high levels of consumer insight. Many food companies are adopting a collaborative approach to innovation, whereby they work with customers to adapt products to their specific requirements. Some of the leading international food and dairy companies have adopted this approach, building centres of excellence for product development, where they work with customers to tailor product solutions. It is important to modify these solutions to fit local markets and tastes, as these can vary considerably from region to region.



Challenges and opportunities in the Dairy Sector

Innovating on a global scale

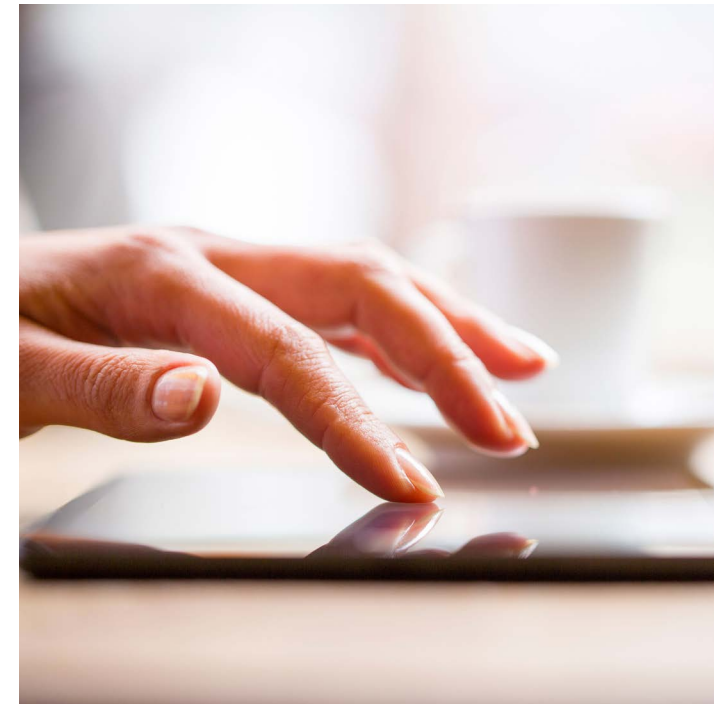
Meeting the demands of consumers across multiple regions requires organisations to improve knowledge transfer and coordination across regions.¹⁶ For example, they will establish reporting structures and virtual centres of knowledge sharing consisting of teams with expertise in specific types of submarkets. Best-in-class companies will increasingly have cross-national teams with expertise in understanding and addressing specific types of markets, consumers, and cultures.¹⁷

Building an innovation network

Even for the largest food company, the amount of resources which can be devoted to research

in a particular area pales in comparison to the amount of research being conducted in the wider scientific community. Developing links with universities and research institutions is becoming more important, even for large dairy companies. When it comes to innovation, being open to new ideas is critical, and having established links with third parties can assist this. These bodies can assist in conducting research and trials into product innovations and can be a cost effective means of conducting R&D.

Successful innovation is a function of the firm's technical and commercial capability, but also its external network.



Challenges and opportunities in the Dairy Sector

Growth in protein consumption driving innovation in the dairy sector

The consumption of dairy proteins has been increasing in recent years, driven by rising income in emerging markets, growth in 'gym culture' and a shift towards foods with functional benefits. The global protein market is projected to grow at a CAGR of 6 per cent to 2018.¹⁸ Dairy proteins are often viewed by consumers as the 'gold standard' in protein due to their complete amino acid profile, easy digestibility and satiety benefits, and are increasingly used for fitness and weight management. Dairy companies are taking advantage of this trend, adding value to proteins for use in a variety of applications relating to health and nutrition and medicine.

Expansion in the sports nutrition market

Dairy plays a key role in sports nutrition, with ingredients such as whey and casein staple components of many product varieties. The sports nutrition market is currently experiencing rapid growth, and is expanding to include more segments, with greater numbers of casual users using the products. This has implications for how the products are marketed. For example, occasional users who are less informed about product attributes are more likely to buy established, trusted brands from traditional outlets. On the other hand, experienced and informed buyers are more likely to buy the particular ingredients they require in bulk, and thus are less brand loyal and more likely to shop around and shop online.



Challenges and opportunities in the Dairy Sector

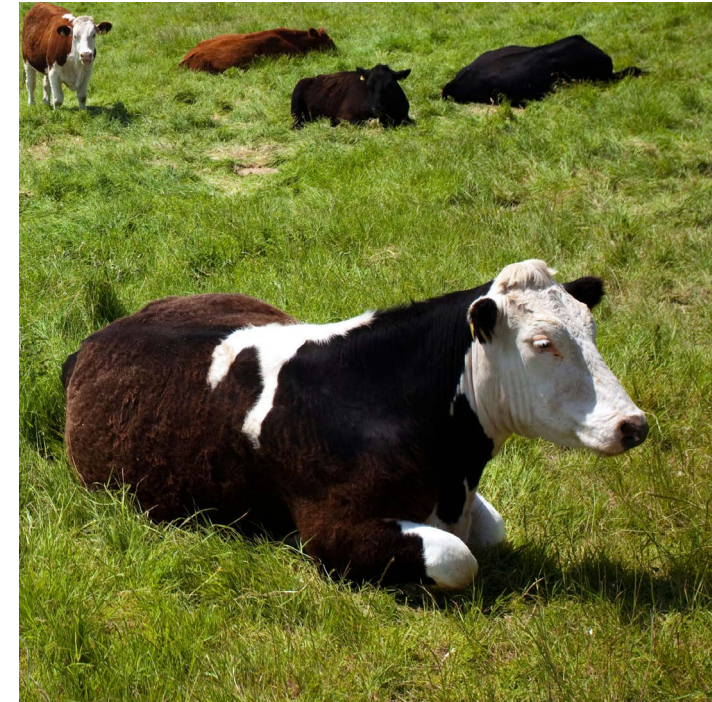
Healthy ageing

Senior consumers are also showing an interest in dairy based nutrition products in order to prevent sarcopenia (loss of muscle mass), giving rise to the 'healthy ageing' category. Some sports nutrition manufacturers are reacting to these trends by launching new products aimed at older consumers. While cracking this market will not be easy given the marketing challenges, ageing populations in many high income nations make it a potentially lucrative segment.

Clinical nutrition

The growing clinical nutrition market presents another opportunity for the dairy industry, as dairy ingredients such as casein and whey proteins are commonly used in medicines and

treatments for malnutrition. Clinical nutrition is an area of medicine that seeks to identify and treat medical disorders in humans that result from improper or inadequate diet, or from diseases that make the body unable to handle the nutrients delivered to it in the normal diet. The global clinical nutrition market was valued at \$39.4 billion in 2015, and is expected to grow at a CAGR of 5.4% to 2022.¹⁹ A range of demographic trends are contributing to this growth, including ageing populations, growth in products for premature babies, growth in products treating malnutrition and escalating incidence of lifestyle associated disease.²⁰



Processors

Safe and secure supply chain

Safety and security of supply is a major concern in the dairy sector, where short shelf lives and the large number of suppliers increases the likelihood of product deficiencies.

Supply chains increasing in complexity

An increasingly globalised food industry has resulted in companies adopting longer and more geographically dispersed supply chains, thus making traceability more difficult. In 2014 in the USA alone there were 659 food recalls, up 47.2 per cent since 2002. Further, in 2013 nearly 9 million Americans became ill from contaminated food.²¹

2008 melamine scandal

These issues were highlighted in a dairy context during the 2008 melamine scandal in China,

when 54,000 infants were hospitalised and six died due to the contamination of infant formula with melamine. Government inspections found the problem to exist within products from 22 companies, including China's top four infant formula brands. The effects of the incident are still evident in the Chinese infant formula market today. Trust in domestic brands remains low, and foreign brands are still able to command a premium.

The incident served to highlight how vital it is for companies to understand what is happening at every stage of their supply chain, as a mishap anywhere along the supply chain can ruin a company's reputation regardless of the source of the problem. As supply chains become more

complex, collaboration among the various stakeholders is more important than ever.

Adapting to the new environment

Leading food companies are investing in securing their supply chain, developing plans to manage recalls, and enhancing product labelling and traceability through track and trace technologies.²² It is also vital to perform an appropriate level of due diligence on suppliers, commensurate with their importance and the level of risk they present.

As consumer purchase decisions are being influenced by social impact attributes (such as local sourcing, sustainability, animal welfare, etc.) the sourcing function is expected to become an increasingly important area for dairy companies.

Blockchain technology – securing the supply chains of the future?

Blockchain is a distributed publicly-accessible 'ledger' which records transactions in a tamper and revision-proof way that is public to all. The ledger records a transaction, when it happened and that it happened correctly, without exposing any confidential details about the subject or the parties' involved.²³ Originally created as a means to manage the virtual currency bitcoin, it is now being adapted for various uses.

Recent discourse on blockchain has examined how its applications can extend beyond the protocol for bitcoin, including examining its potential uses for food traceability.

As a shared, secure record of exchange,

blockchain could potentially be used to track what goes into a product and who handles it along the way.²⁴ Each ingredient or product component would have a unique ID number, and be traceable at each stage of the supply chain, even as ingredients from different sources are added and the product is developed. As the blockchain database is publicly accessible, the process would be completely transparent and allow numerous people to carry out verifications.²⁵

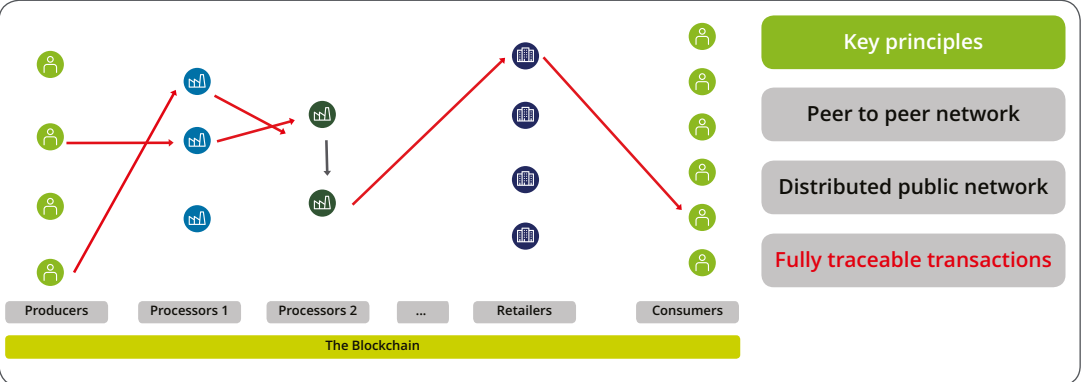
Further, the 'internet of things' could potentially play a role here. Internet connected equipment such as trucks and storage coolers could monitor which objects they are housing and tag those objects with relevant environmental

conditions like temperature or location, providing assurance that a product is safely handled through the entirety of its journey.²⁶ This is an area which is currently in the early stages of development, and has yet to be commercialised. However, the core technology is there – indeed Deloitte Ireland recently developed a '**Foodchain**' prototype which could be capable of tracking all ingredients in a particular product along the length of the supply chain. Such technology could potentially allow a consumer in China to pick up a product, scan an RFID tag on a mobile app and have the ability to see where each ingredient in that product came from. This would provide unparalleled 'farm to fork' visibility and give consumers significant peace of mind.

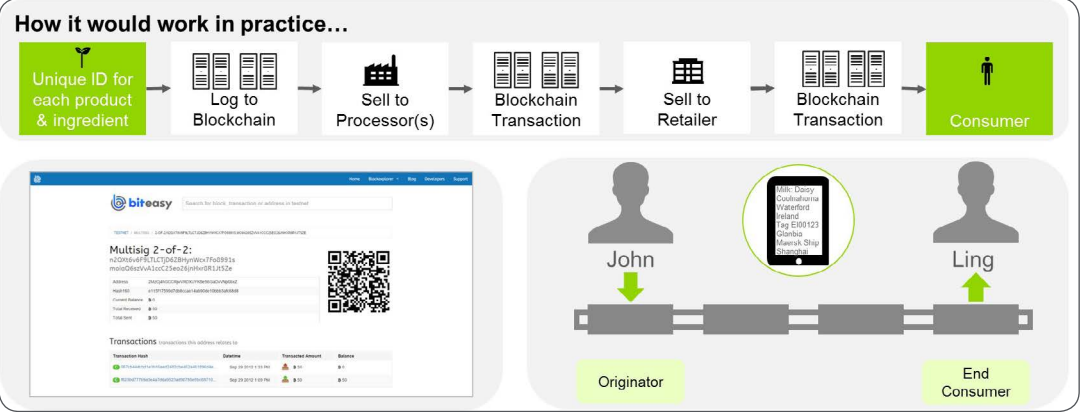
Challenges and opportunities in the Dairy Sector

Blockchain technology – securing the supply chains of the future?

Case study



- Key principles**
- Peer to peer network
 - Distributed public network
 - Fully traceable transactions



Retailers

Adapting offerings to consumer demands

Recessionary behaviour remains

While consumer confidence is on the rise, selective spending remains. Consumers are less loyal to brands and are more price sensitive. Store merchandising and the strategic placement of discounts are becoming more important.

Personal shopping experience

Furthermore, consumers increasingly expect a personal experience, with more customised product offerings. Shopper-centric retailing requires a novel approach to utilising consumer insights in merchandising. The growth of healthy snacking culture is an opportunity for retailers to merchandise convenience foods in strategic locations of the shop.

Deloitte's 2015 American Pantry Study found that 86 per cent of consumers look for options

that are both healthy and convenient when shopping.²⁷ The dairy sector is driving much of the growth in convenience eating, with protein bars, shakes and yoghurts among the more common snacking foods.

Demand for local produce

The movement for local, environmentally sustainable farming has grown substantially over the last decade, as consumers have increasingly demanded fresh, local food. A driving force behind this perception that "locally produced is better produced" is consumer concern about "food miles," as well as the social obligation to support the local economy.²⁸

Overall, growing consumer interest in local and regional foods is creating new marketing opportunities for retailers.²⁹ Some larger retailers

have launched initiatives and schemes to support local production by providing marketing advice and shelf space opportunities to small businesses and producers.

The emergence of small "milk shops" in Europe, where one can buy milk from machines that were filled by local farmers, demonstrates how retailers can take this trend to its logical extreme – bringing consumers right back to the product source and providing a truly local product.

Leveraging data to target consumers

The use of digital technologies and data analytics is playing an important role in analysing purchasing behaviour to target consumers with offerings of interest to them, and will play a greater role in influencing store merchandising going forward.

Retailers

Omni-channel Retail

Growth of online and mobile

Today's consumers expect to be able to shop any time, any where. Changing consumer purchasing habits present a challenge to wholesalers and retailers alike, as they have to adapt sales and distribution channels to meet consumer needs.

Online grocery is expected to grow at 9.5 per cent annually to 2017 to become a \$9.4 billion industry.³⁰ Though its market share is not likely to overtake traditional shopping, the availability of online shopping plays a major role in consumers' perception of a retailer.³¹ Furthermore, today's consumers are constantly connected to their smartphones, a trend which retailers can take advantage of through mobile applications and advertising. According to Deloitte's 2015 American

Pantry Study, 37 per cent of shoppers use mobile apps to help them shop and we would expect this figure to increase.³²

Growth of convenience stores

As well as the advent of online and mobile, retailers are increasing the number of convenience stores in strategic locations that cater to the busy 'grab and go' consumer.³³ Convenience foods are a staple of the product range of these shops, with dairy based snacks such as yoghurts and protein bars prevalent. To supply these small shops, which maintain little inventory, the underlying distribution network must have the ability to match supply and demand with the rapid replenishment of stock.³⁴ According to a study conducted by IHL Group,

"out-of-stocks" accounted for \$634 billion in lost retail sales globally in 2014, while overstocks contributed \$472 billion in lost revenues, both up over 30 per cent from 2012.³⁵ Retailers who learn how to effectively manage inventory levels should be able to significantly grow their profitability. In a dairy context, the ability to ensure that inventory is always fresh, and that online shoppers receive produce with a reasonable shelf life, is a challenge. Improved storage technologies and the use of shelf sensors to monitor when items go out of stock in real time will allow retailers to control the quality and shelf-life of products going forward.

Disruption in the sports nutrition market – growth of online

Since its inception in the 1980s, the sports nutrition market has been dominated by small to medium sized players who sell through speciality retail and gym channels. Recent disruption in the market has come from low cost providers selling products such as whey powder online at significant discounts. This direct to consumer model allows these companies to sell at significantly lower prices by eliminating retailer margin. For established competitors with a large physical store presence, this model is difficult to replicate given cost issues and the risk of damaging existing relationships with retailers.

Companies operating solely online also spend very little on R&D and marketing compared to established players. They often make simple

dry blended products, while more complex products are contract manufactured. They can thus compete on price without sacrificing too much margin due to their low cost bases.

Further, the online model allows these businesses to gather a large amount of customer data. This provides them with a level of knowledge of customers that is difficult for a conventional retailer to obtain (eg., names, addresses, precise purchasing history and product preferences).

This model is gaining traction, particularly in the UK. In 2014, online sales accounted for over 19 per cent of the UK sports nutrition market³⁶ and we would expect this share to increase in the future.



Conclusions



Conclusions

As we have seen, today's dairy industry is presenting producers, processors and retailers with their own set of challenges and opportunities. Nevertheless, a number of common themes emerge. One of the key drivers of many of the opportunities and challenges is changing consumer demand patterns. These emerging consumer trends are impacting the way food is being produced and consumed at all stages of the value chain.

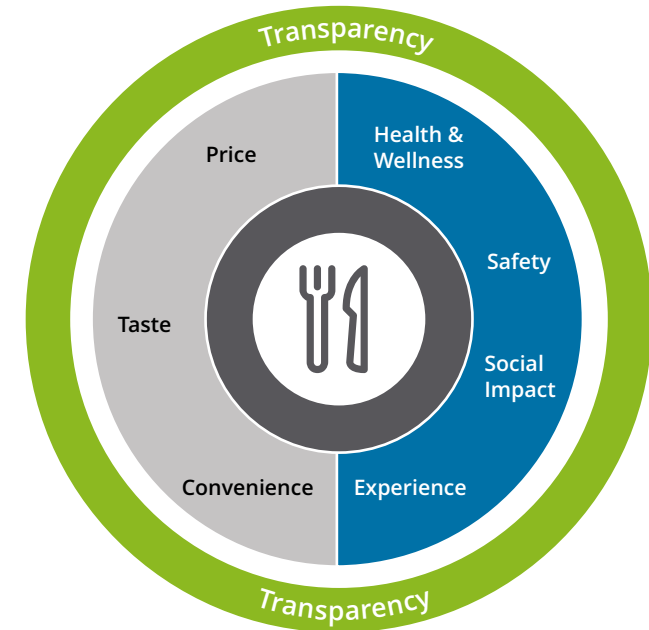
A recent Deloitte report entitled "Capitalizing on the shifting consumer food value equation"³⁷ has identified a number of new value drivers for consumers when making their food choices. The 'Traditional' value drivers of price, taste and convenience have been supplemented by a number of 'Evolving' drivers, described below.

Health and wellness. This is the most important and complex of the value drivers. Consumers' considerations are broad and tend to vary at the category level, with attributes ranging from nutritional content, to organic production, to all-natural ingredients and fewer artificial ingredients.

Safety. This is considered both in the short term (e.g. toxin free) and long term (e.g. no carcinogens). It has significant interplay with Health and Wellness, having attributes such as fewer ingredients and better labelling as well as the absence of allergens.

Social impact. Social impact encompasses attributes such as local sourcing, sustainability, animal welfare, and fair treatment of employees.

Traditional and Evolving value drivers



Source: Deloitte Food Value Equation Survey 2015, Deloitte Analysis

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It appears to have a low impact on buying decisions for most consumers, however there is a small but very vocal minority for whom it is a significant issue and whose voices can potentially sway public opinion.

Experience. Experience includes retail store layout and services, channel innovation, brand interaction, and personalised engagement spanning pre, during, and post-purchase.

Overarching each of these drivers is the desire for **transparency**. This requires product attributes such as clear labelling, certification by trusted third parties, and company attributes like access and trust.

The report surveyed 5,000 US consumers, roughly half of whom said their purchase decisions are significantly influenced by these Evolving drivers. What is more, these findings were pervasive across regions, age and income groups. Interestingly, those who expressed a preference for the Evolving drivers exhibited a lack of trust in large, national food and beverage brands across a range of factors such as food safety, nutrition and value for money. This lack of trust may be contributing to lower sales growth at larger food manufacturers (in the U.S. from 2009 to 2013 the 25 biggest manufacturers achieved 1.0 percent annual growth, compared with 4.9 percent and 4.0 percent for smaller brands and private brand manufacturers, respectively³⁸).

The research therefore suggests that purchase decisions are increasingly based on “product plus” factors, such as specific ingredients, how the product was made, where it was made, corporate values of the manufacturer and retailer, etc. This requires that firms play close attention to all aspects of food production from farm to fork. Health and wellness will certainly be a key consideration for innovation and new product development, but firms must think beyond individual product attributes to factors such as how the product is produced, the nature of the supply chain, etc.

Firms must also be able to communicate this holistic approach to consumers and influence the discourse around their products. Rising device

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ownership, well developed social networks and the large quantity of information at consumers' fingertips means that consumers are more empowered than ever before. While consumers always had the power to vote with their wallets, they now have more power than ever to influence what other consumers buy. Dairy companies will need to adapt to this trend by providing consumers with relevant information in an open and transparent manner.

Firms that will succeed in this new environment will be those that can meet multiple value drivers discussed above and adapt a "product plus" mindset. It will require an integrated and well thought out approach to all aspects of

food production, processing and retailing. It will also require a genuine dialogue with a more empowered consumer which can serve to build trust and grow brands.

In summary, meeting both Traditional and Evolving demands in a dairy context will require producers, processors and retailers to provide consumers with nutritious, safe, convenient and value for money options.

- Producers must take advantage of the 'datafication' of agriculture to expand production in a sustainable manner.
- Processors will need to take advantage of their technical capabilities to develop new products, but also ensure that their

production systems and supply chains are as safe and secure as possible.

- Retailers must make better use of technology and data to adapt to changing consumption patterns and offer consumers the food they want, when and where they want it.

Furthermore, actors at all stages of the value chain will need to work hard to maintain the trust of a more demanding and empowered consumer.

Contacts

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Deloitte's strong global presence, as well as regional strength in key markets, enable us to leverage our vast experience with agriculture and dairy clients. We work across geographies to understand and address the critical challenges facing companies in the dairy sector.

We deliver an integrated approach and bring a proven ability to quickly field world-class teams with the right sector and language skills anywhere in the world. This has proven effective in our support of clients across the value chain.



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