



Passport

ASSESSING DIGITAL FRONTIERS IN PACKAGED FOOD FOR FUTURE GROWTH

November 2016

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WHICH INNOVATIONS WILL LEAD THE WAY
IN FOOD?

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Scope

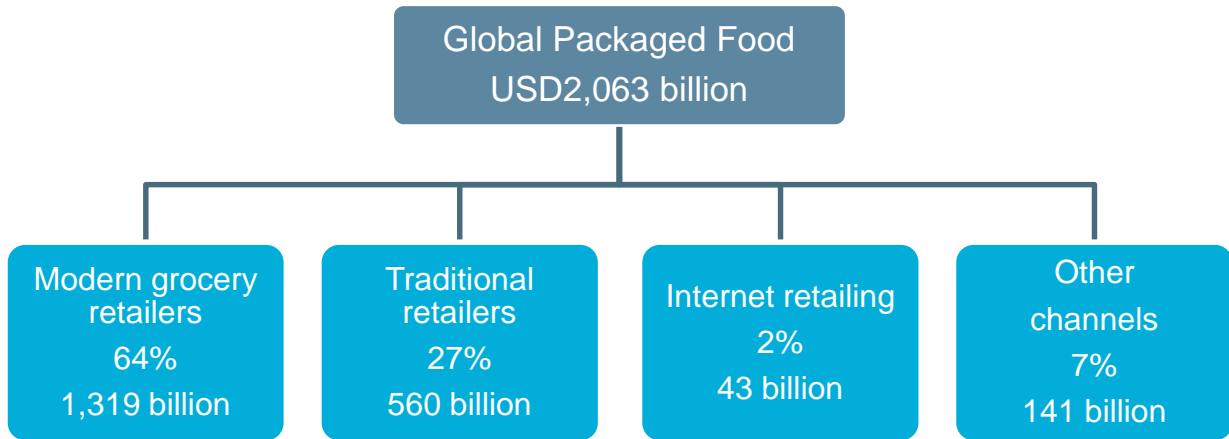
- 2016 figures are provisional and based on part-year estimates.
- The forecast period under review covers the years 2016 to 2021, inclusive.
- Unless stated otherwise, all values expressed in this report are in US dollar terms, using a fixed 2016 exchange rate for each year. As such, any impact from currency and/or exchange rate volatility is discounted.
- All forecast data are expressed in constant terms; inflationary effects are discounted. Conversely, all historical data – country-specific, regional and global – are expressed in current value terms, with inflationary effects included, unless otherwise stated.

Disclaimer

Much of the information in this briefing is of a statistical nature and, while every attempt has been made to ensure accuracy and reliability, Euromonitor International cannot be held responsible for omissions or errors.

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Packaged food volume growth in developed markets (where the majority of food sales are generated) is expected to remain static over the next five years. This is forcing strategy makers to look beyond traditional growth markets to stay relevant, and find new pockets of growth through value creation in a new technological era. This briefing looks at where digital frontiers can be found and assesses which technological innovations are out there, and which will lead the way in food.



Key findings (1)

Packaged food sales will be static in developed markets, making value creation all the more important.

With emerging markets no longer being the main drivers of growth, food players are turning to developed markets such as the US for sustained future growth. Per capita disposable incomes in developed markets are seven times higher than in emerging markets and product margins are also greater because of a sophisticated distribution network being in place. Yet prolonged deflationary pressures in core developed markets have been a concern for many packaged food players in 2016 which emphasises the need for value creation as future volume sales are expected to remain static.

For time-strapped consumers, value creation is mostly found in time-saving (technologically-driven) solutions. By assessing digital attractiveness, key markets are found to explore digital innovation.

New pockets of growth can be found in markets where digital commerce is strongly developed which can be measured in home, and mobile connectivity, market environment and commerce infrastructure. By leveraging over 2,500 data points Euromonitor has ranked 50 countries according to attractiveness for future deployment of digital initiatives. China, South Korea, the UK and the US score highest on the digital consumer index and are key markets to explore new food innovations that offer solutions in time management, food waste and experience.

Globally, Millennials and Generation Z consumers will hold 47% of gross income by 2025.

Digital consumers are predominantly Millennials and Generation Z consumers who are pioneers in the digital environment. This can be through use of smart appliances, connected devices, purchases through mobile devices, and so on. It will be these consumer groups that food manufacturers should target next in developed markets.

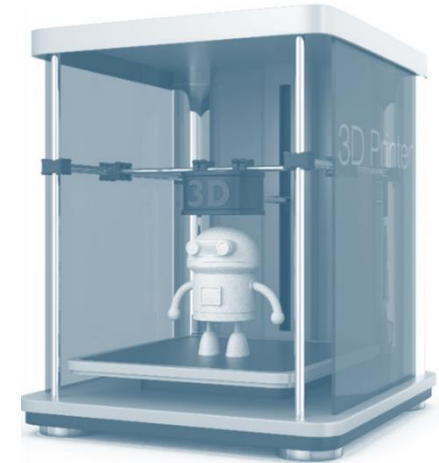
Key findings (2)

Consumers tend to be more daring when it comes to buying snacks and confectionery than staple foods yet technology opens new ways to excite consumers even for daily food items.

Staple foods that are price inelastic, such as bread, rice, pasta and milk, traditionally have seen little innovation as consumers are more conservative in these categories and typically stick to their favourite brand. Technological innovation can bring back excitement to these categories and get consumers to try new things at higher price points and build an innovative brand image at the same time. With an already high penetration of these foods, even a small price increase can generate substantial new revenue, even in a deflationary environment.

Introducing industry 4.0 in packaged food

- It has been argued that we have entered a new industrial revolution. This is often referred to as “Industry 4.0”.
- Industry 4.0 is revolution of the Internet of Things where everyone is interconnected through devices and production processes are transformed by technology. Industry 4.0 is expected to increase its influence over the next few years, transforming manufacturing processes on the way. It will make supply chains and production processes more interconnected, efficient and flexible, allowing mass-customisation.
- For the food industry, this means looking at what technology is out there and assessing what can be turned mainstream for the everyday consumer, and allows for higher margins at the same time as maximum penetration.



Key trends might include:

- Mainstream adoption of new platforms (including apps) that help guide food consumption for healthy living: measuring nutrition info on the go
- Innovative concepts for ready-to-consume products (including 3D printed foods)
- Traceability of food ingredients: quality assurance
- Mass acceptance of connected food devices: the “internet of food” creates digital interaction
- Smart food waste management

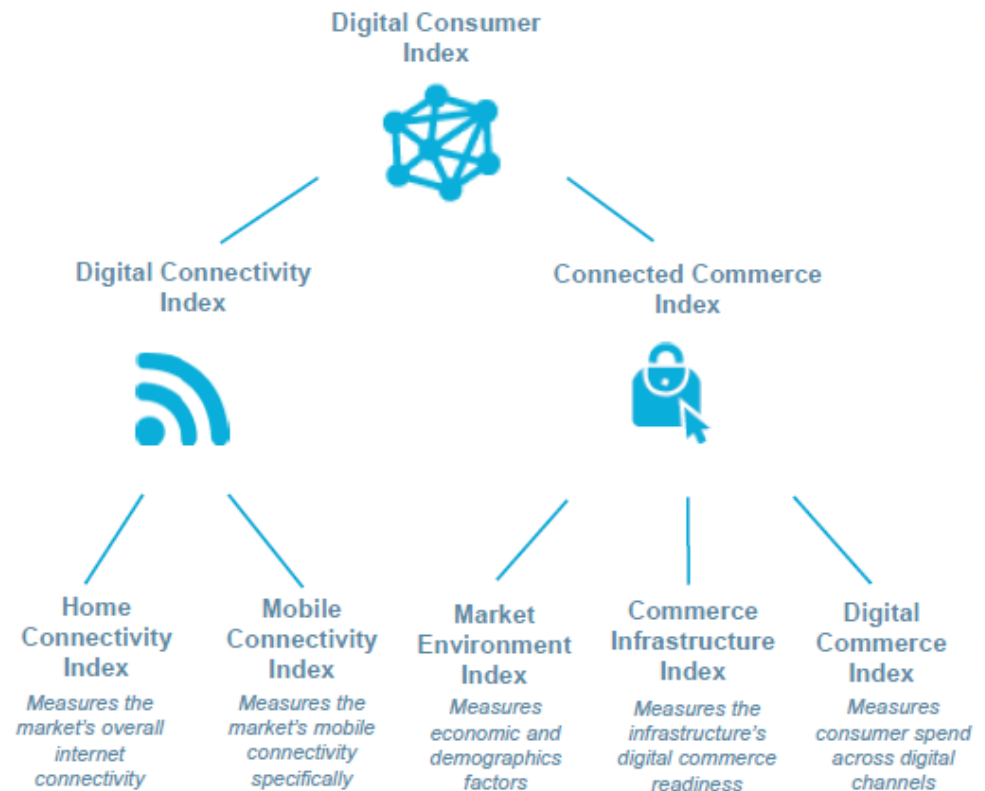
Who, where with what?

- Packaged food companies can be front runners in applying next generation tools to improve retail fmcg business practices. Major food companies continually integrate new network technologies behind the scenes, with the possibility of greater integration with consumer-facing products in the near future.
- With giants like Nestlé and Samsung making substantial investment in technology, it is worth considering some of the current and future implications of this mega-trend for the world of packaged food.
- This briefing sets out to look at who the digital consumer is, which markets are the digital frontiers of industry 4.0, and which innovations will lead the way in finding new pockets of growth.



Prioritising markets with Euromonitor's Digital Consumer Index

- In order to identify which geographic markets are the most digitally attractive and offer the best prospects for future deployment of digital initiatives, Euromonitor International has developed the Digital Consumer Index. This tool pinpoints a country's relative digital standing in the present, and offers forecasts for where it is expected to be five years from now.
- Leveraging more than 2,500 data points, the Digital Consumer Index assists with market prioritisation for all digital initiatives, including digital commerce. In total, the Digital Consumer Index utilises 18 different metrics, all weighted according to Euromonitor International's industry expertise, to provide an overall market attractiveness score for each component of the index.
- A full explanation of the methodology and rankings can be found in the appendix of this briefing.



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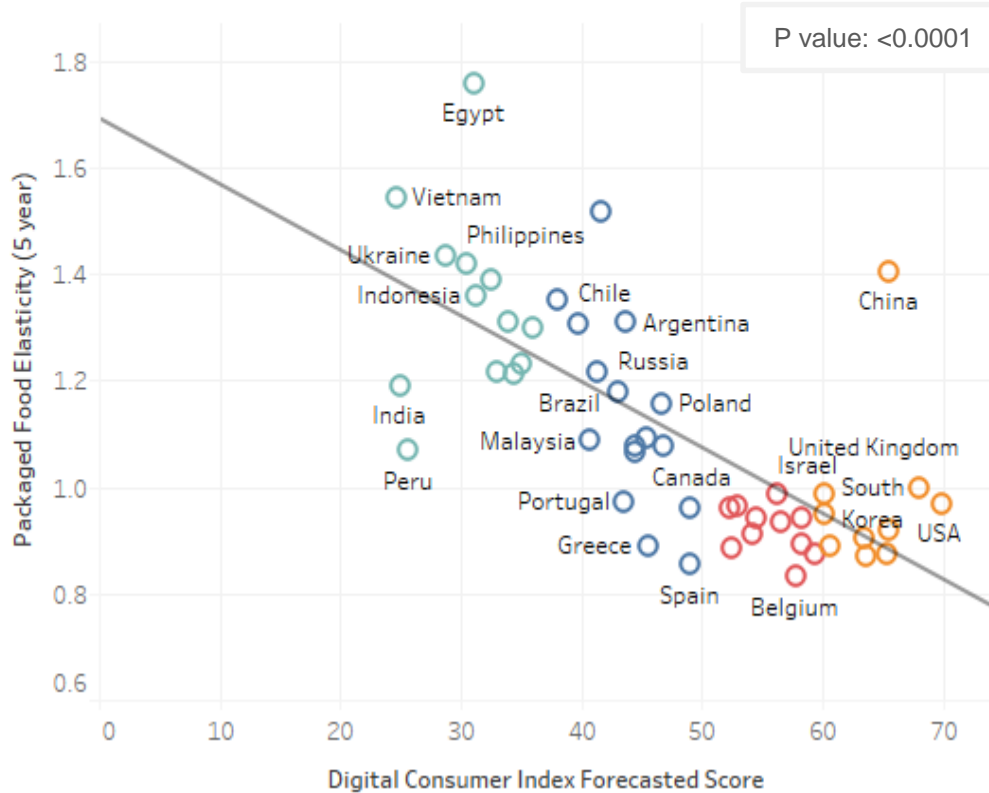
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Linking digital consumer index to low income elastic food groups

Packaged food income elasticity is inversely related to digital consumer index

The higher a market scores on the the digital consumer index, the less income elastic packaged food is



- Whilst the global digital landscape will continue to be defined by the narrowing gap between developed and emerging markets, there still is a divide in terms of food income elasticity.
- In fact, the digital consumer index and packaged food income elasticity are inversely related, with packaged food being less income elastic in those markets which score higher on the digital consumer index.
- The US, the UK and South Korea, for example, are amongst the top countries for digitisation, while food income elasticity is amongst the lowest. Vietnam, Egypt and the Philippines show the opposite.
- An exception to the rule is China, where there is a significant discrepancy between tier one and three cities, allowing for high digitisation in the former cities and higher packaged food income elasticity in more rural areas.

Changing brand loyalty in staple foods by exciting consumers...

Least Income Elastic Food Categories Across the UK, US, S-Korea and China (five year elasticity 2016-2021)



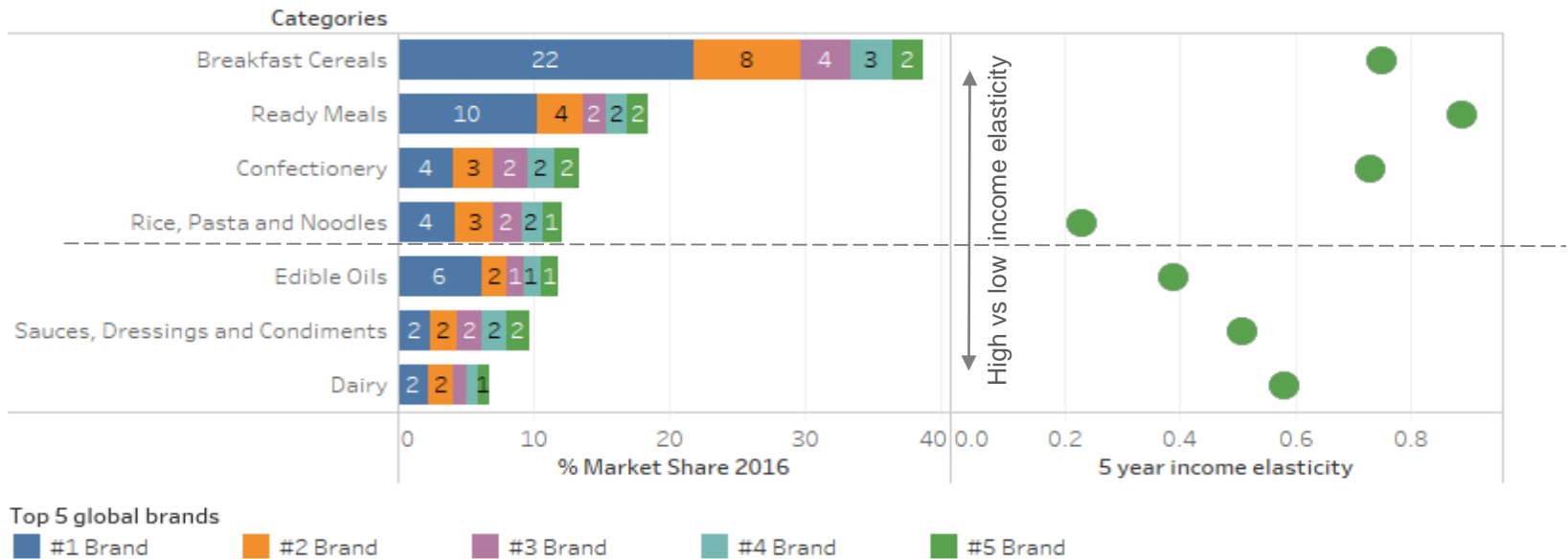
- Staple foods that are most income inelastic, such as rice, pasta, noodles and dairy, traditionally have seen little innovation as consumers are more conservative in their purchasing habits and typically stick to their favourite brand.
- Low income elasticity means that if consumers have less to spend, measured in GDP per capita, they are less likely to give up on these food types.
- Technological innovation can bring back excitement to these categories and get consumers to try new things at higher price points and build an innovative brand image at the same time. With an already high penetration of these foods, even a small price increase can generate substantial new revenue, even in a deflationary environment.
- In 2015, one of the leading brands in rice, pasta and noodles, Barilla, has started experimenting with 3D printing and offers consumers a unique personalised experience by printing any pasta shape they desire. While at the moment it is still far from commercial and serves mainly as a marketing tool, it does show the potential for experience-driven innovations in a declining pasta market.

...and competing against fewer brands

- The competitive environment is quite different between high and low income elastic food groups. The top five brands in breakfast cereals, where income elasticity is highest, hold a substantial share of the market at 39% in retail value terms. For rice, pasta and noodles, where income elasticity is lowest, the market is far less dominated by the top five, which together capture just 12% of the market. If brand switching is limited in staple foods and the market is far from consolidated, there are substantial gains to be made from technological innovation as no brand has yet claimed an unassailable leading position.

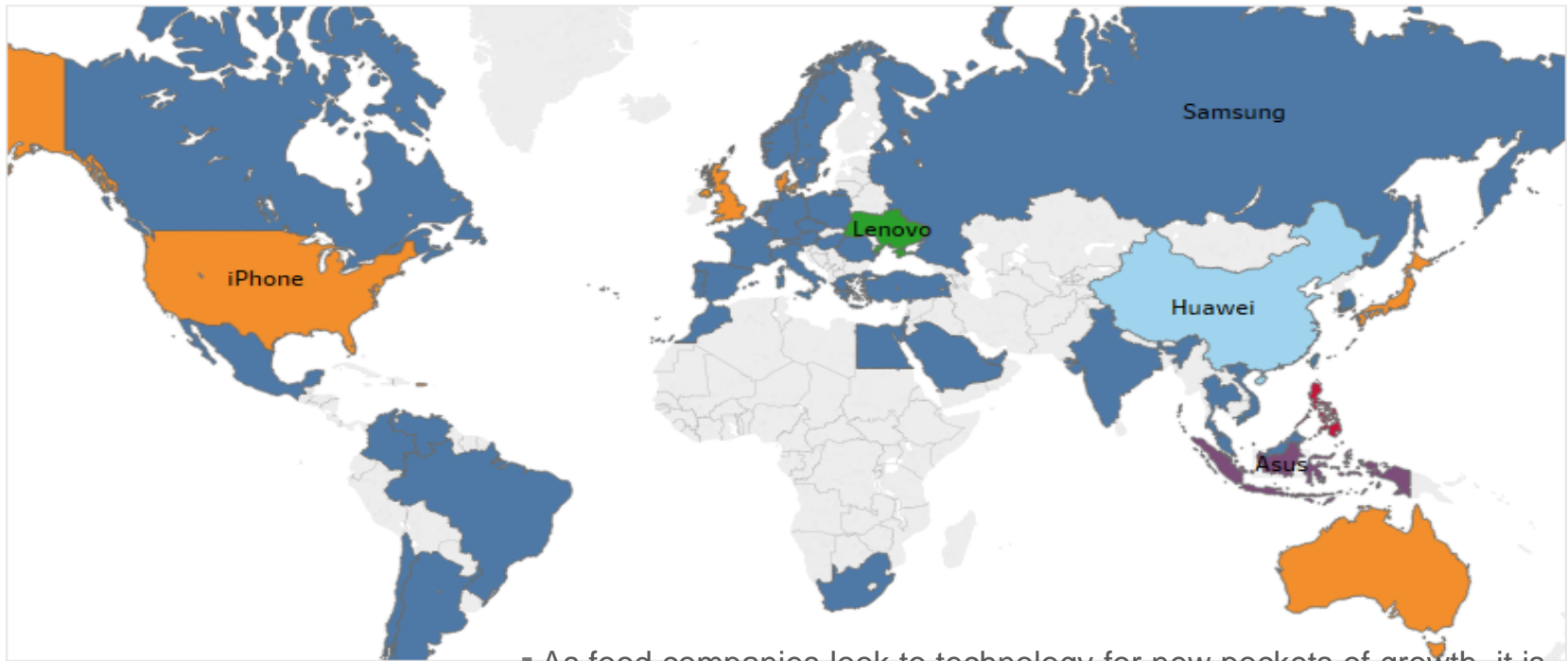
Dominance of the top five global brands in low vs high income elasticity by food type

The higher the income elasticity by food category, the more the market is controlled by the top five brands and vice versa.



Samsung the inevitable partner for food technology

Leading Smartphone Brands around the world, 2016



- Asus
- Cherry
- Huawei
- iPhone
- Lenovo
- Samsung

As food companies look to technology for new pockets of growth, it is important to consider strategic partners for connected devices, such as smartphones. Whilst Samsung has been faced with negative publicity over its latest Galaxy Note 7 devices, it is still by far consumers' first choice in terms of smartphone brands. As of 2016, Samsung leads sales in 36 countries around the world.

Controlling (or monitoring?) what we eat, by Nestlé and Samsung

- A recent example of collaborations between food and tech is the Nestlé and Samsung partnership. In Q2 2016, Samsung's Strategy and Innovation Center and Nestlé Institute of Health Sciences announced a collaboration to harness the power of Internet of Things (IoT) technology and nutrition science to provide new insights into healthy living.
- This collaboration reportedly aims to combine IoT, scientifically validated bio sensors, advanced multi-modal technology, and a comprehensive nutritional approach to provide people with entirely new insights into health and wellness. The press release also mentioned that the collaboration aims to empower individuals to better manage their own health and wellbeing by providing relevant and contextual recommendations around nutrition, lifestyle and fitness, to help individuals live healthier and better lives.
- As Nestlé aims to establish itself as a leading health and nutrition company, this collaboration is unsurprising. It will be interesting to see what the joint forces of the leading packaged food player and leading consumer electronics player will bring to the market.
- Innovations are likely to be centred on tracking and collecting eating behaviour, with the trade-off for consumers of being able to monitor nutritional intake, whilst Samsung and Nestlé receive priceless information on the eating behaviour of their customers.



Connectivity: Bringing recipes to life with virtual baking assistant

Drop Kitchen Inc, founded in 2012

interactive recipes
Follow simple step-by-step instructions.

smart scaling
Not enough flour? Problem solved.

simple substitutions
Run out of milk? We have you covered.



<https://www.getdrop.com/>

- As connected devices move through the product life cycle and become more affordable, new pockets of growth will be found among millennial and generation Z consumers, who are keen to incorporate technology in their daily lives for ease and flexibility. As connected devices still require some investment, it is most likely that they will be bought as a gift or a cool new gadget for the whole family.
- Founded in 2012, Drop Kitchen has launched an innovative product combining technology with functionality in baking appliances. The company has developed an app which is connected to a smart scale to simplify baking. The app guides home cooks step-by-step through finding, making and sharing their creations. The actual scale is able to rescale quantities, substitute ingredients, offer in-recipe tips, and share recipes and photos online. It can be described as a smart baking virtual assistant.

Why pay more? Because it offers more through technology

- While the app for the Drop Kitchen scale described in the previous slide is free, the scale itself costs US\$80, compared with US\$20 for the average electronic scale. So why buy it? Because it offers convenience and an experience.
- Although a completely unrelated industry, in some ways parallels can be drawn with the initial sales of the robotic vacuum cleaner, which at first was mainly purchased as a gift for others or for the entire family. Saving time through technology is the main USP and robotic vacuum cleaners have outperformed sales of other types, and posted a 24% volume CAGR over 2011-2016. Despite the average unit price being three times that of a standard vacuum cleaner, it has still outperformed other types by tapping into convenience and time-saving benefits, features consumers will come to expect more in the food industry too.

Robotic vacuum cleaner

US\$368

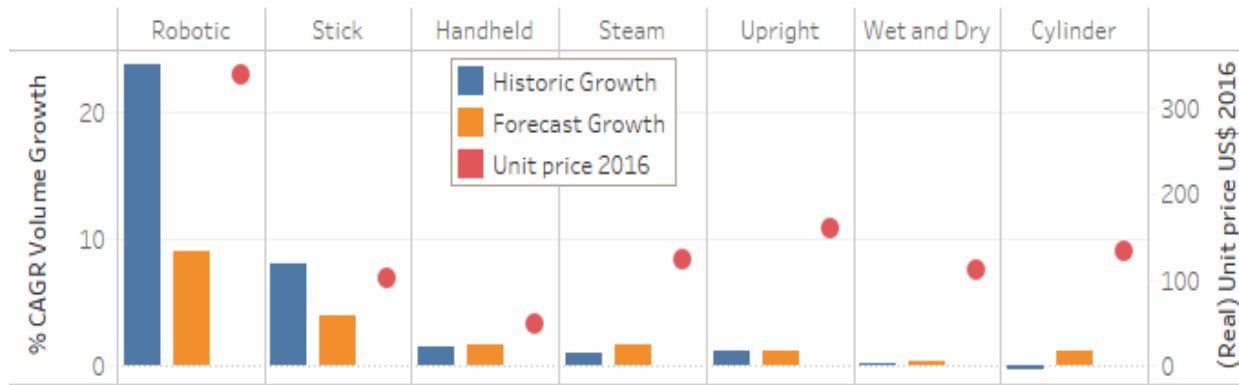


US\$115

Standard vacuum cleaner

Average unit price (US\$) 2016

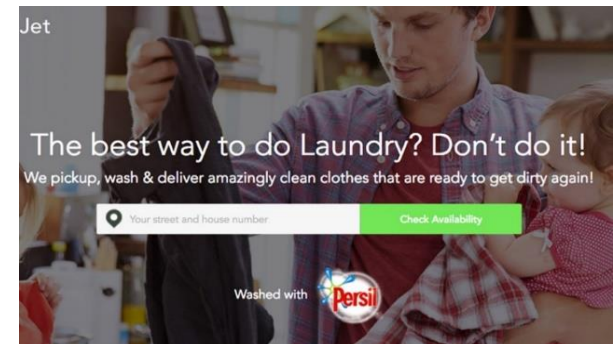
Global Volume Growth Vacuum Cleaners by Type Historic (2011-2016) vs Forecast (2016-2021)



Connectivity: Future selves more likely to buy a service than food

- A substantial 70% of global households will be urbanised by 2030, thus convenience-driven solutions will have an important part to play in future food innovation. Starting in large cities such as London, Paris and Berlin, many start-ups are already using technology to make consumers' daily lives easier. From ordering drinks at the bar via an app to ordering customised cleaning services at home, or using a carpool with strangers to travel across the city, technology is increasingly becoming embedded in our daily lives.
- Going forward, this will inevitably change the way consumer groups are marketed to, and also opens opportunities for food manufacturers to track consumer behaviour. Persil, for example has teamed up with Zip Jet, an on-demand laundry app service provider. Laundry apps have become a feature of Western cities, targeting young professionals with higher disposable incomes, as well as urban families with busy lifestyles, supported by a consistent increase in smartphone possession rate in Western Europe (predicted to reach 93% by 2030). Teaming up enables Unilever not only to track disruptive changes within its markets but also stay ahead of the curve by responding to changing consumer demands and expectations.
- This demonstrates that the mobile phone will inevitably play a central part in future food innovation, and collaboration must be sought with providers of these devices.

Unilever teaming up with Zip Jet



Say it, scan it, buy it. Are food scanners the new norm?

For anyone wanting to track their nutrition intake, a number of gadgets have now come to the market, promising to make it easier to order food or to track what you eat. More and more food scanners and devices have entered the market, and these are just three



Amazon Dash
(UK)
GBP49.99

A barcode-scanning, voice-recording grocery device



Hiku (US)
USD49

Similar features to Amazon Dash, with a Wal-Mart partnership



TellSpec (US)
USD 499-2,000

A device that scans food at a molecular level (without a bar code). Together with an app it scans food, identifies calories and nutrients. You cannot however order food with it.

Nutrigenomics in real time: Campbell's personalised meal kit

- Nutrigenomics, or simply personalised nutrition, has become the buzz word when describing what could be the next big (tech) thing in food. As consumers start to recognise that individual bodies react differently to food because of genetic factors and predispositions, the idea of DNA testing to determine which food one can eat or should avoid is potentially an exciting one.
- In 2016, The Campbell Soup Co became the exclusive investor in Habit, an American personalised nutrition meal delivery start-up. Users provide body metrics, such as height, weight and waist size, and complete an at-home test kit that measures more than 60 different biomarkers. The company utilises a patent-pending approach to analyse the data and determine the best foods and nutrients, based on the individual's needs. A team of chefs prepares the custom meals, which are delivered to the user's door.
- Campbell's investment is part of a broader trend in the food industry to define the future of food using the technology that is currently available. Moving forward, more partnerships such as these will determine the next wave of food innovations that combine science with nutrition. Nestlé is likely to follow suit, through its division devoted entirely to health science and its recent partnership with Samsung.



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Meet the interconnected consumer of today...



- The consumers of today are more connected than ever before. The number of internet users has increased rapidly, to reach 3.1 billion globally in 2016. An estimated 42% of the population uses the internet as of 2016.
- The range of devices through which consumers are connecting to the internet covers anything from a tablet to a smartphone to a smartwatch.
- The rapid increase in digital connections has ushered in speed and convenience across all aspects of life. This digital connectivity has also underpinned generational shifts in how consumers browse, compare prices and buy packaged food. Digital devices are increasingly becoming the way companies connect with today's consumers.

3.1 BILLION

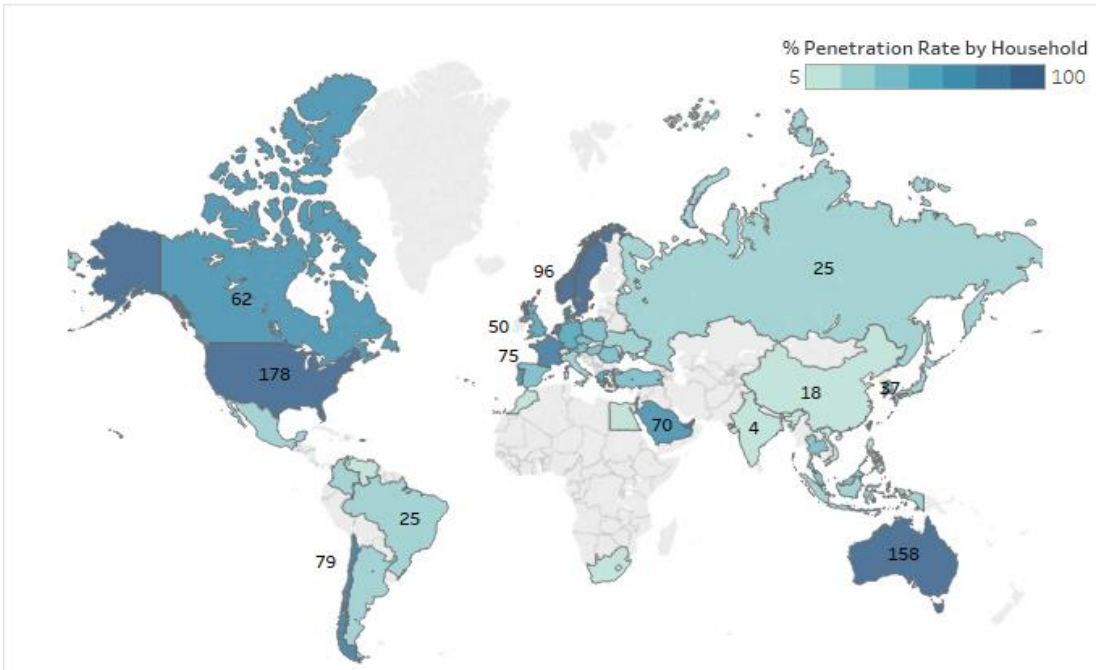
Global internet users
as of 2016

42%

Population using
internet as of 2016

...and of tomorrow

Penetration Rates of Tablets Globally 2016



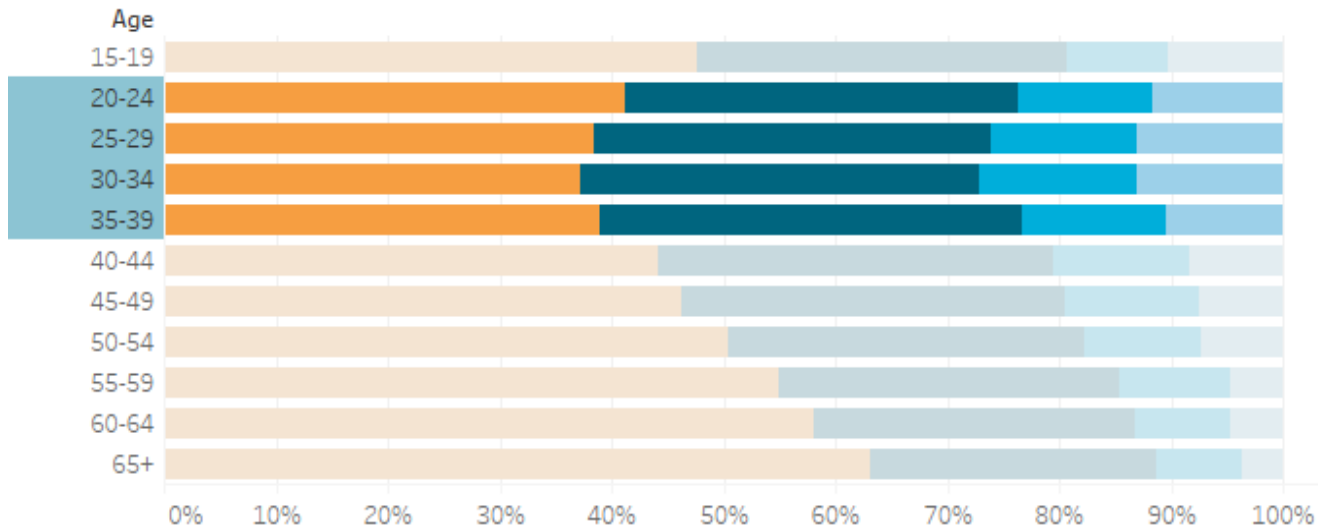
- Most households in developed markets own a tablet and in some cases such as the US, even more than one. In the UK, students as young as eight years old are already using tablets in their education and are exposed to the benefits these offer. As these are the consumers of tomorrow, food players should rethink how these consumers will interact with food or buy food when they grow up, which will be entirely different to the consumers of today.

“Almost 70% of primary and secondary schools in the UK now use tablet computers”
- Education technology charity Tablets for Schools

Heavy mobile shoppers are most likely to be Millennials

Online shopping habits: grocery

On average how often do you make online grocery purchases regardless of whether you do so on a computer, mobile phone, or other device?



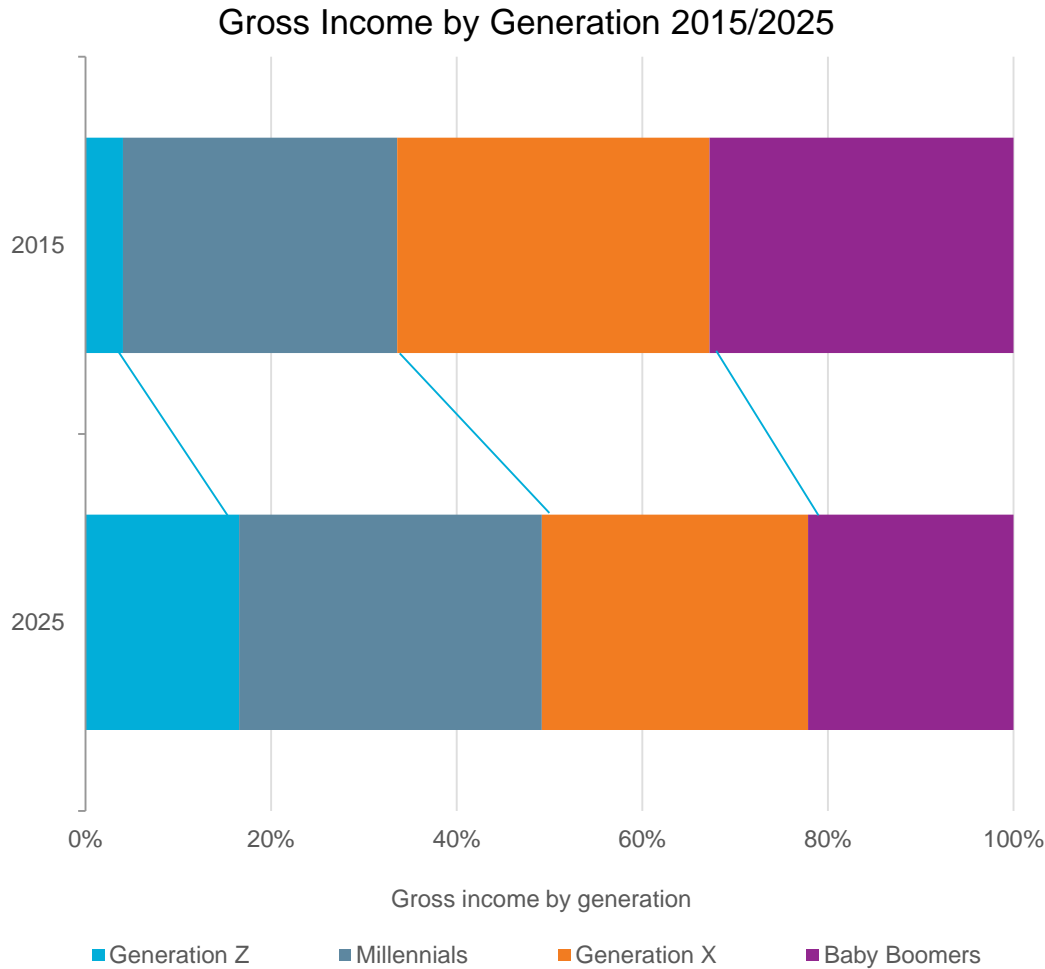
Source: Euromonitor Global Consumer Trends 2016 survey

Online Purchases

- Never
- Less than once a month
- 1-2 times a month
- Weekly
- At least once every day

- Young people are often the first adopters of technology and that is no different with mobile. Among global consumers, consumers aged 20-39 years make the most online grocery purchases.
- These early adopters are using their mobile phones for multiple purchases across the fmcg industries, and are likely to increase spending online.

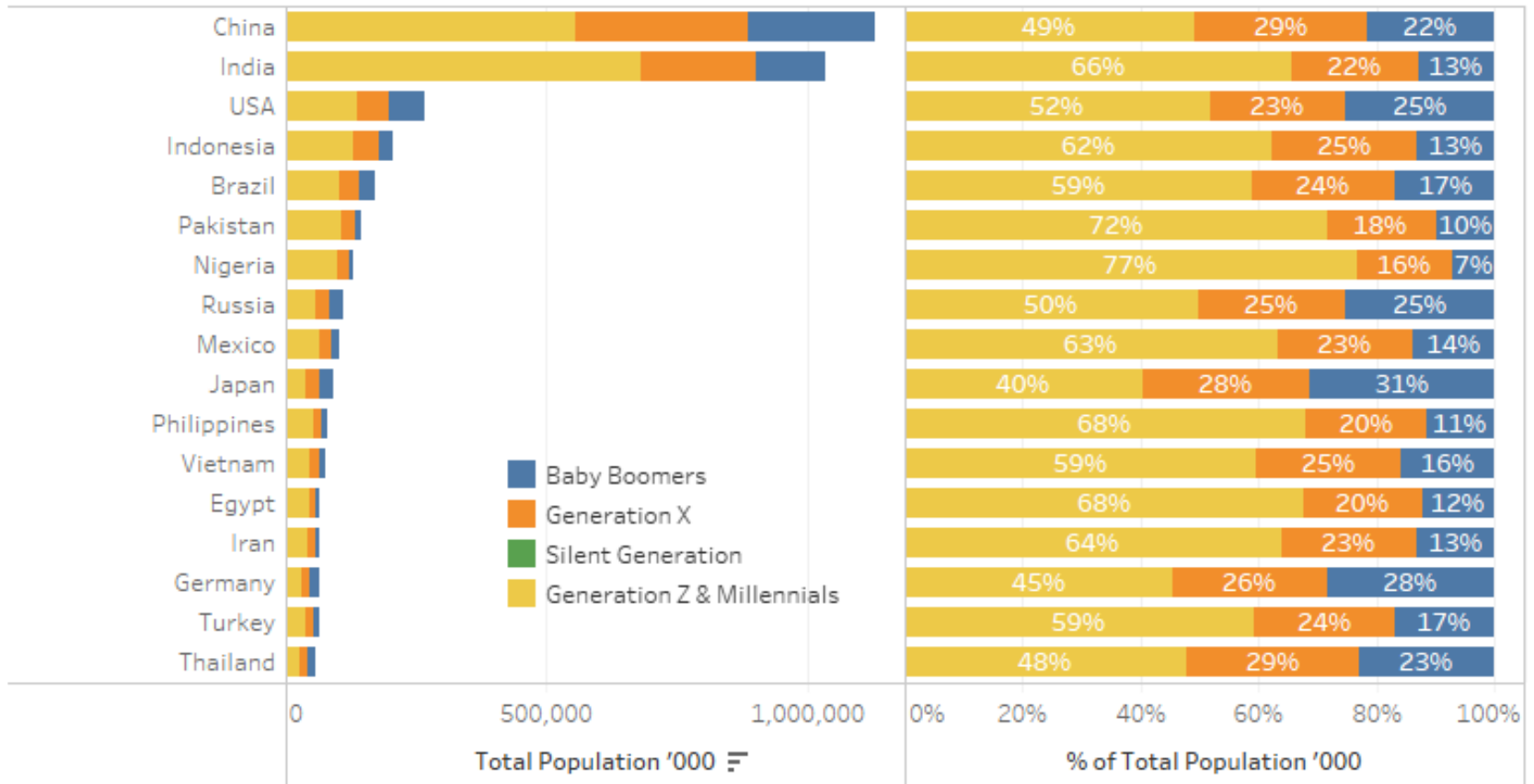
Millennials and Gen Z will control 47% of gross income by 2025...



- When considering future digital commerce opportunities, one must consider the up-and-coming generations. This subset of the population not only offers future commerce growth, but also represents the part of the population most likely to adopt these new ways of browsing and buying all types of goods and services.
- In 2015, Millennials, who are typically defined as the generation that reached adulthood in the new millennium, already controlled 30% of gross income. By 2025, when adding in Generation Z – the cohort born after the Millennials – these two generations are expected to control 47% of gross income. Undoubtedly, these generations will be important for any future digital commerce plans.

...and be the most populous cohort across the globe

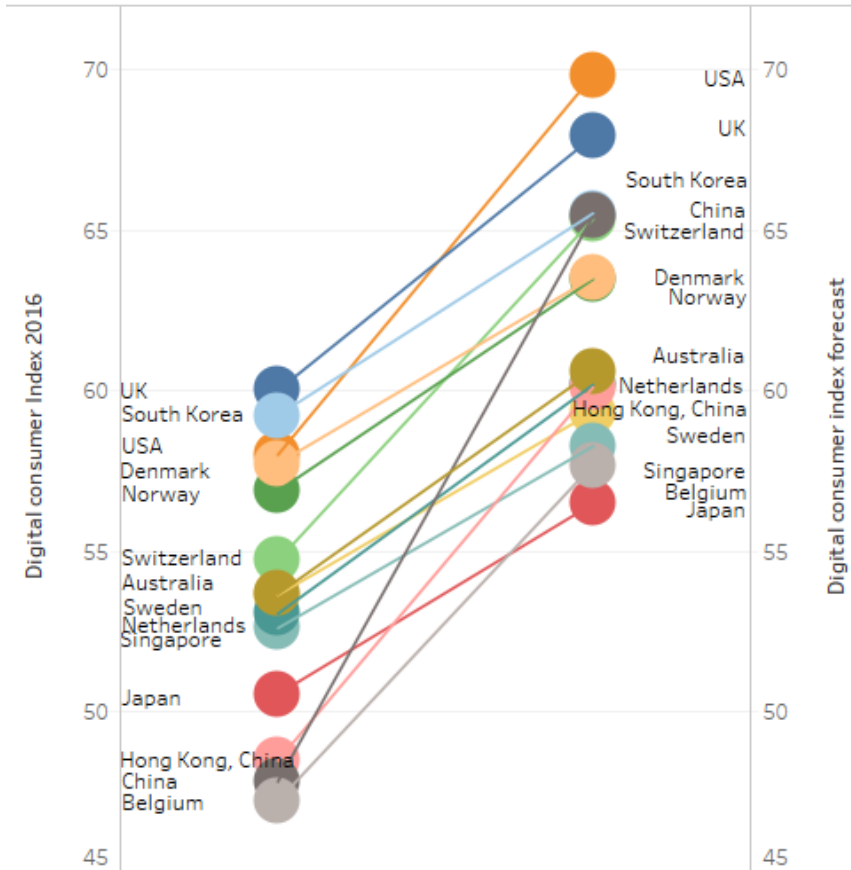
Population segmentation by 2025



The UK leads the Digital Consumer Index but US will do better

Highest scores on the digital consumer index

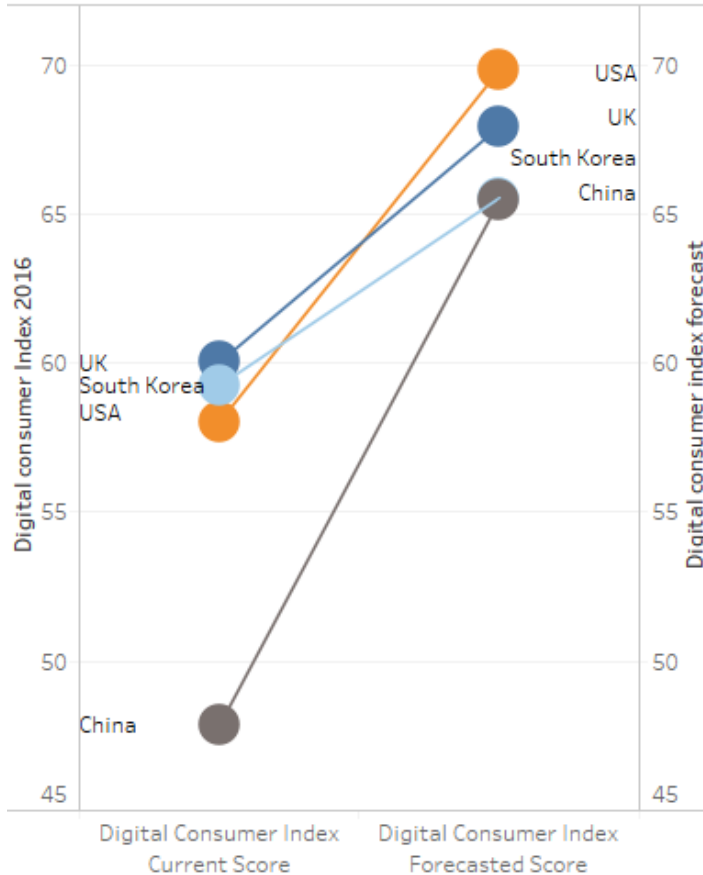
Current score vs forecast score



- The UK is a digital frontrunner, ranking atop the Digital Consumer Index based on current scores. As of 2015, 17% of all consumer payments were executed through a device, equating to USD260.3 billion in digital purchases. That share is expected to reach 22% by 2020. The UK is among the most advanced digital commerce markets. The proliferation of smartphones has led urbanites to embrace the convenience of on-the-go purchases. Consumer can conduct commerce via websites, mobile apps, carrier billing or text message. In fact, most products and services can be bought digitally. Even traditional cash businesses, such as taxis, hairdressers and cleaning services, frequently accept online bookings and payments.
- Based on the forecast scores for the Digital Consumer Index, the US will move ahead of the UK and South Korea by 2020, to take the top spot. The willingness of US consumers to make digital purchases continues to grow, as they become more familiar with browsing and buying online across a range of devices.

The four expected leaders in the forecast digital consumer index

The four leaders on the digital consumer index
Current score vs forecast score



- South Korea and China are outpacing their emerging market counterparts based on current scores on both the Connected Commerce Index and the Digital Connectivity Index, which together equally feed the top line Digital Consumer Index.

South Korea

- The Asian tech giant has ideal demographics to spur digital commerce. The country’s tech-savvy culture is unparalleled, with 99% of the population using broadband connections. It is a leader in technological development, and has implemented some of the fastest and most extensive networks in the world.

China

- China is a standout emerging market. Owing to the slowing economy combined with the increasingly rapid pace of life, digitally savvy consumers have been seeking more efficient, convenient and cheaper ways of purchasing. Digital commerce fulfils these goals.

Four key takeaways to explore new pockets of growth

Digital frontiers

Food manufacturers should look to four digital frontiers when exploring test markets for digitally-driven food innovations. These are the UK, the US, South Korea and China, as these markets are most advanced in adopting digital initiatives such as home connectivity, mobile connectivity, market environment and infrastructure and expenditure through connected devices.

Millennials and Generation Z

These generations represent the part of the population most likely to adopt new ways of browsing for and buying food and services and will hold 47% of global gross income by 2025.

Food innovation should be centred around particular USPs for these consumers such as time-saving solutions, on-the-go formats and simplicity as consumers are overloaded with information, a consequence of being connected everywhere at all times.

Digitisation in food

Shake up for income inelastic staple foods

Staple foods such as rice, pasta, noodles and dairy traditionally have seen little innovation as consumers typically stick to their favourite brand. Yet it is exactly these foods that are least income inelastic meaning price is not the most immediate determinant of purchase. This creates an opportunity for added-value innovations if the USP is right.

Food and consumer electronics can no longer be viewed separate

Globally, over 60% of consumers aged 20-39 years have bought groceries online in 2016, meaning food promotions will need to be geared towards devices and vice versa.

Collaboration must be sought to connect food brands with the likes of virtual baking assistants, nutrigenomics initiatives and food scanners, as these devices will influence how consumers buy food in the future.

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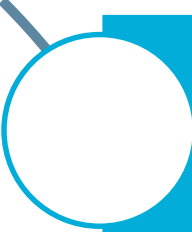
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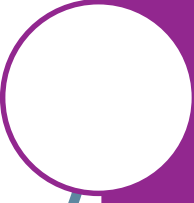
Food for thought



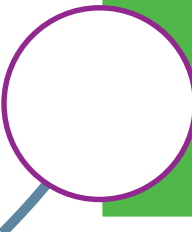
As new digital consumers are more and more connected through their devices, this offers a whole plethora of options for food companies to monitor real consumption habits rather than biased self-reported ones. Business solutions will need to be geared around analysing this big data, which can offer huge opportunities in determining real consumer needs.



As millennial and generation Z consumers will hold 47% of gross income by 2025, added value food launches should be geared to consumer groups where devices play a key part in daily tasks. As such, collaboration should be sought with major players in the consumer electronics industry, which will pave the way in future innovation. Going forward, consumers are likely to buy a service around food rather than just food itself.



Front runners in terms of readiness for the digital revolution are the UK, the US, South Korea and China. In these markets, the fmcg environment, as well as government activity, are most developed, and it is in these markets that innovation in food technology will have the biggest chance of success.



As more emphasis is placed on wellbeing by governments, and there is renewed consumer thinking regarding health, food innovation geared towards health is likely to hold the most potential. Mass nutrigenomics could pave the way in terms of how consumers are informed about what to eat and what to avoid, and it is conceivable that there could be a number of tie-ups between manufacturers of food, consumer electronics and consumer health.

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Methodology for the Digital Consumer Index

Digital Consumer Index and Subcomponents

- Leveraging more than 2,500 data points from Passport, Euromonitor International's syndicated research platform, the Digital Consumer Index helps clients identify which geographic markets are the most digitally attractive and offer the best prospects for future deployment of digital initiatives, including digital commerce. This index utilises 18 different metrics, all weighted using Euromonitor International's industry expertise, to provide an overall market attractiveness score for each component of the index.
- The Digital Consumer Index consists of two central components: the Digital Connectivity Index and the Connected Commerce Index. Each component is given equal weight in the overall Digital Consumer Index. The 2016 Digital Consumer Index contains a current and forecasted score for both the Digital Connectivity and Connected Commerce subcomponents, as well as the combined score. The final score (out of 100 points) reflects the current as well as forecast digital readiness in a particular country.
- The Digital Connectivity Index takes into consideration a consumer's ability to access fixed and wireless broadband and the speed of those connections. The Connected Commerce Index examines the market's consumer profile, the development of the market's commerce infrastructure and digital commerce spend across various consumer-facing industries.

Timeframes and Geographic Coverage

- The Digital Consumer Index measures the digital connectivity and digital commerce readiness in 50 geographic markets at two different points in time. The two different data points are referred to as current and forecasted scores. In the 2016 Digital Consumer Index, the current score reflects the current situation in a particular country using 2015 data as a proxy for the current state of connectivity. In the 2020 Digital Consumer Index, the forecasted score reflects the forecasted situation in a particular country based on 2020 projections.

Methodology for the Digital Consumer Index, continued

Data Sources

- All data used in the Digital Consumer Index were derived from Euromonitor International's syndicated research platform, Passport. The data used in building the index come from a variety of Passport systems, including Digital Consumer, Consumer Finance, Consumer Foodservice, Income and Expenditure, Population, Retailing and Travel.

Estimating Missing Values

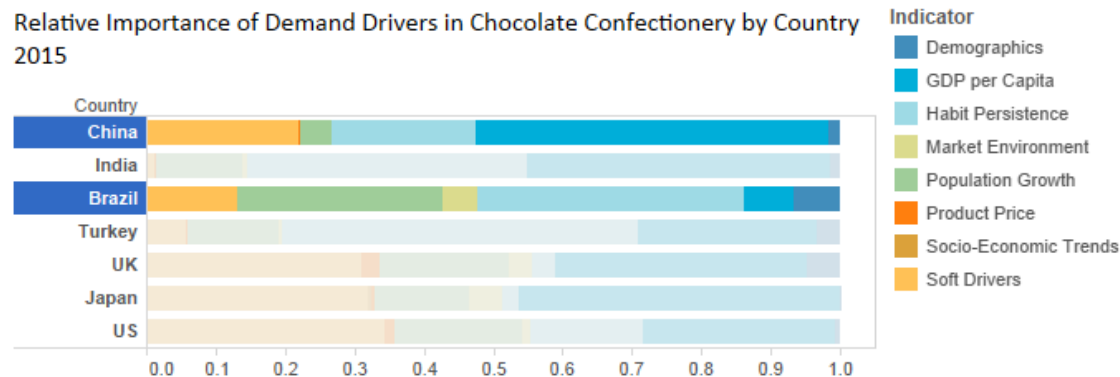
- For a few countries missing one of the indicators, Euromonitor International estimated the missing value by calculating regional averages for each specific metric and applying that figure to those affected countries. In this edition, the number of POS terminals on a per capita basis and mobile commerce were estimated using this manner for four countries: Belgium, Peru, Slovakia and Switzerland.

Weights Applied to Metrics

- The Digital Consumer Index was constructed by calculating a country's score on a particular metric against the leading country for each metric.
- Relative market share offers a way to benchmark one country's performance against the leading country for that metric in order to determine a country's relative position in the past, present and future. For bounded variables, such as household possession rates of digital devices, the theoretical maximum value of 100% was used as the denominator. Three variables – consumer expenditure, mobile internet subscribers and online travel sales – had particularly notable variation among the countries. In order to distribute the figures more normally, logarithmic transformation was applied to these three metrics.
- Across all metrics, 2020 data were used for benchmarking both the current and forecasted scores to allow for better comparison not only between the metrics, but also the two points in time.

Growth decomposition explained

- To help understand and illustrate the impact of each demand driver to a market's retail growth performance and prospects, Euromonitor International employs a graphical tool called “growth decomposition”.
- The fundamental idea behind growth decomposition is that a product category's retail sales performance and future prospects can be explained through changes in underlying demand factors.
- As explained above, the impact of demand driver change to retail market sales can be calculated by multiplying a demand driver's observed elasticity by that demand driver rate of change over a period of time. Multiplying demand driver elasticity by forecast demand driver growth yields the percentage points of overall retail growth that that specific demand driver is contributing to the market forecast under review.
- In addition, Euromonitor analysts estimate the impact of “soft drivers” to overall retail growth via their empirical research. The relative impact and importance of “soft drivers” can be shown alongside that of the measurable demand drivers identified by the Industry Demand Model.
- In the growth decomposition visual below, the percentage points of growth that each demand driver is contributing to overall market growth are illustrated in the coloured segments of the stacked bar charts.



Significance and applications for growth decomposition

- By attributing a fraction of overall retail growth to each contributing demand driver, overall category growth can be “decomposed”. In doing so, an extensive picture of underlying market fundamentals and processes on a category-by-category and country-by-country basis can be provided.
- Ultimately, growth decomposition allows Industry Forecast Model users to:
 - Identify different demand drivers that affect historic sales, and will likely impact future market prospects;
 - Evaluate the relative importance of different demand factors over time and then identify which factors generate the highest deviations in historic - and ultimately future - consumption;
 - Illuminate the underlying market dynamics for each product category;
 - Measure and predict the effects of demand driver shocks, either expected or hypothetical;
 - Facilitate scenario analysis by generating understanding of which demand factors can be influenced by a manufacturer or retailer and which are beyond their control.

Retail Volume Sales, '000 tonnes, 2011 - 2019 CAGR %

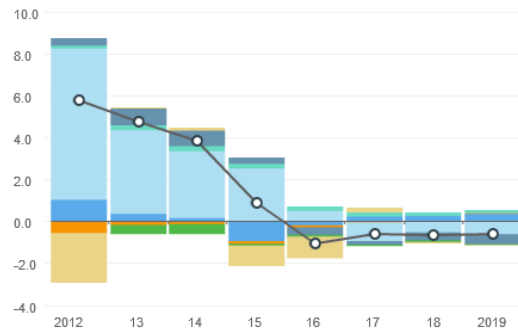
Russia - Baby Food

Retail Volume Sales Growth:

○ Quarterly Update

Driver Effects:

- GDP per Capita
- Product Price
- Habit Persistence
- Population
- Demographics (Babies/Infants; Population Aged 0-2)
- Market Environment (Grocery Outlets)
- Soft Drivers



Retail Volume Sales, '000 tonnes, 2011 - 2019 CAGR %

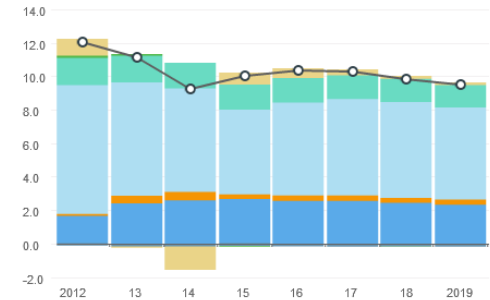
India - Ice Cream

Retail Volume Sales Growth:

○ Quarterly Update

Driver Effects:

- GDP per Capita
- Product Price
- Habit Persistence
- Population
- Demographics (Kids; Tweenagers)
- Market Environment (Convenience Stores Selling Space; Grocery Outlets)
- Soft Drivers (+ Availability; + Competition; + Consumer awareness; + Promotion; - Lifestyle trends; - Maturity of sector)



Key applications for Industry Forecast Models

1

- **Quarterly Forecast Restatements**
 - Regularly updated retail market forecasts to reflect latest macro expectations (ie, quarter-on-quarter real GDP growth revisions) for all markets.

2

- **“What If?” Scenario Analysis**
 - See and compare how a hypothetical event (ie Eurozone recession, China Hard Landing, Grexit) stands to impact different market forecasts.

3

- **Growth Decomposition and Demand Driver Elasticities**
 - Understand, compare and respond to the forces driving expected market growth across different product categories and countries.

4

- **Assess Market Potential**
 - See the ceiling on retail volume or value sales and growth, regardless of a specific forecast scenario. How much more can that market really grow?



Passport

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