Exploring the role of food and drink in the future of health and wellness

Growing the success of Irish food & horticulture
An overview of our report and process

This report, produced in partnership with The Futures Company, explores the key opportunity areas for food and drink companies in the health, wellness and nutrition space, as consumer needs and expectations evolve.

‘What key opportunities may emerge for food and drinks companies in the health, wellness and nutrition space to 2020, as consumer needs and expectations evolve?’

It has been produced using an analysis of the macro, meso and micro level trends that will be shaping health and wellness in the future. A number of different techniques have been used to create this view on the future of health and wellness, including expert interviews, consumer and market data, qualitative research and futures techniques. It highlights the potential opportunities within a range of different markets (the US, the UK, France, Italy, Japan, China, India, Brazil and Russia).
Setting the scene
It is in the context of increasing complexity that the future of health and wellness is being shaped

Today's consumer is living in an increasingly uncertain and resource-constrained world.

The global population is growing, putting more pressure on scarce resources. Increased volatility in energy prices and rising raw material costs are having an impact on food prices – disproportionately affecting low-income consumers. Pressure on food supplies is being exacerbated by water shortages, particularly across Africa and Northern Asia.

Healthcare resources globally are under increasing pressure

The combination of ageing populations, changing lifestyles and surging rates of chronic diseases is putting healthcare systems across the world under immense pressure – particularly in the context of continuing economic uncertainty.

As the cost of treating chronic illness and age-related conditions such as Alzheimer's continues to rise, greater emphasis is being placed on the importance of prevention rather than cure.

Some governments are taking more decisive action in an attempt to safeguard public health. In September 2011, Denmark introduced a tax on high-fat foods, following the lead of Hungary, which now taxes all foods with high levels of sugar, salt, carbohydrates and caffeine1.

A number of key social and demographic shifts will define the health and wellness landscape over the next five to 10 years

In every continent except Africa populations are ageing. As we live longer, the need to manage health and protect quality of life increases. Advances in science and technology are extending life spans – however, age-related diseases such as dementia and osteoporosis are increasing at unprecedented rates.

Changing lifestyles are increasingly affecting diet and health

The need for solutions (increasingly food and drink based) that help consumers maintain good health into old age will increase.

Simultaneously, changing lifestyles and diets are contributing to a rapid growth in obesity and other chronic lifestyle diseases. According to the World Health Organisation, by 2020, chronic diseases will account for almost three-quarters of all deaths worldwide.²

Globally, in 2010 the number of overweight children under the age of five was estimated to be over 42 million. Close to 35 million of these are living in developing countries³.

The other side of the story is equally unsettling: micro-nutrient malnutrition continues to be a huge problem. Despite rapid economic expansion, in India, more than 75% of pre-school children suffer from iron deficiency anaemia and 57% of preschool children have sub-clinical vitamin A deficiency⁴.

Population growth makes the problem hard to eradicate. According to the UN, based on current indicators, halving serious and moderate malnutrition in Southern Asia could take up to 200 years.

**Changing lifestyles affect diet and health**

More people now live in cities. According to United Nations Population Division estimates, the rate of global urbanisation will increase considerably in the coming decades, reaching 59.7% in 2030 and 69.6% in 2050⁵.

More people are also living alone. The fastest growing social unit over the next five to 10 years will be the single-person household – reflecting broader changes in family dynamics⁶. As the pace of life increases and the “domestic unit” changes, this will have a significant impact on eating habits.

Source: 2 and 3. WHO; 4. OECD International Futures Programme; 5. United Nations; 6. OECD
People are willing to take more responsibility for their health

As the pressures on healthcare providers increase, more emphasis will be placed on personal responsibilities for health

The demographic, social and economic changes discussed so far mean healthcare providers are facing significant challenges.

Obesity could cost the NHS in England as much as £6.3bn a year by 2015. Similar statistics apply to other markets – suggesting urgent need for a fundamental shift in public attitudes.

Increasingly, individuals will be expected to take more responsibility for managing their own health. In markets where healthcare is provided by the state this could require significant cultural and behavioural change.

There are, however, already clear signs that consumers welcome solutions that give them more control e.g. The growth in the market for self-testing kits.

The rise of self-monitoring – from a niche or special-interest base – is another. Between February and November 2010, the number of health related applications launched in the Apple App store increased by 67% to 7,136⁶.

For consumers, information and practical guidance will be key

Consumers have unprecedented access to information about nutrition and managing health; but there’s still an “information gap”

In the past two decades, the volume of material available to consumers keen to manage their health has multiplied. As science has strengthened the link between diet and health, more and more of us have become interested in what we eat and drink. But are we really any better informed?

45% of consumers say they are confused by conflicting information about how best to manage their health. With multiplying choice and often conflicting advice, many people are left with limited understanding of what is good for them and what is not.

A key challenge for governments, manufacturers and brands will be to “cut through” the plethora of information with practical and simple guidelines.

Positive food values are threatened by changing lifestyles

As family structures and lifestyles have changed, many of the positive food values that were centred around family meal times in the home have been slowly eroded. Parents themselves are under increasing time, energy and financial pressures making it more of a challenge to provide nutritious and affordable family mealtimes.

Making sure good diet starts from childhood and re-building positive “relationships” with food will be a key part of safeguarding the health of future generations.

Source: 7. The Futures Company Global MONITOR 2011, average of 21 countries
Convenience, simplicity and natural will continue to hold strong appeal

Lifestyle pressures mean convenient solutions will be key

The competing demands of work and home mean consumers will continue to value convenience – particularly in emerging markets where lifestyles are changing quite rapidly.

“Fast food” will increasingly become differentiated from junk food as we seek options that are quick and easy but good for us. Simplicity and naturalness, both for ourselves and our children, will be important.

For parents, securing the health of children remains a top priority

Despite being under increasing pressure, parents will continue to be focused on securing the best possible start in life for their children. Food and drink will play a key part in this, particularly as we develop a greater understanding of the importance of nutrition throughout a child’s development.

Nature and science remain in tension

Consumers continue to prefer food and drink, and in some cases health solutions, that are as close to natural as possible. However, this is increasingly sitting in tension with advances in science and technology that are revolutionising our approach to health and the way we eat.

This is evident in the increasing blurring of the food and pharma categories – with new food and drinks being developed that can target health problems.

The extent to which consumers will embrace these solutions in the future remains unclear. However, it is likely that as necessity drives us towards the need for more affordable, sustainable and nutrient rich foods, consumer attitudes towards ‘enhanced’ foods are likely to shift.
Opportunities
These opportunity spaces have been identified through a process of combining trends, futures and foresight techniques. The key drivers of change shaping the future of health and wellness were identified, including their likely direction of travel, pace, and the nature of the interrelationships that may be created between them. By thinking about different ways in which these drivers might combine, a number of new opportunity areas for food and drink manufacturers were identified.

Hidden and healthy
“I want to give my kids healthy food that they will enjoy eating”

Simple Goodness
“I want my children to eat healthy foods that are free from nasties”

Food as fuel
“I want food and drink that help me perform at my best”

Ageing well
“I want to act and feel younger for longer”

New frontiers of digestive health
“I want to get the most out of the food I eat”

Healthier by nature
“I want healthier versions of the foods I love that still taste great”
Opportunity spaces

Brain food
“I want to boost my concentration, focus and mental stamina”

Fill me up
“I want to feel fuller for longer”

Beauty from within
“I want to eat foods that help me look my best”

Dialling up nature
“I’m looking for natural ways to boost my health”

Food shelf of the future
“I’m interested in foods and drinks that can help people like me address our common health needs”

High benefit, low impact
“I want sustainable food that offers good nutrition”

Mood food
“I want the food I eat to make me feel happier”

Renewal food
“I want my body and mind to be restored whilst I sleep”

Designed for me
“I want solutions that are tailored to me”
Some of the opportunities we identified are already in the formative stages of development; others are more dependant on further scientific or technological progress and the speed at which consumer demand may emerge. The timeline below indicates how close – and how far away – the key opportunities for food and drink companies are.
How the opportunities are presented in this report

Each area of opportunity is discussed in the context of emerging consumer needs and the factors that will shape its development. A snapshot of evidence accompanies each area.

Where does each market sit in relation to each opportunity?

Markets are mapped by two dimensions: maturity; dynamism.

Maturity depends on: the current level of consumer awareness and demand; the extent to which the market is already being “tried and tested” by products and or services. The more familiar a market is to consumers, the more mature it is.

The level of dynamism reflects the potential rate of change in the market and the speed at which opportunities might emerge. It’s determined by factors such as: the scientific and technological progress that underpins the opportunity; the speed at which consumer lifestyles and needs are evolving; the pace at which innovations can be turned into commercial products.
Simple goodness

“I want my children to eat healthy foods that are free from nasties”

Food and drink for children with simple, easily understood ingredients, and ‘no nasties’

Parents are increasingly worried about what goes into the products they give to their children. International food scares have fuelled concerns. So, too, have studies suggesting a link between artificial additives and behavioural problems.

Food fortification – the use of vitamin and mineral supplements – has fallen out of favour with parents sceptical of the benefits to their children’s health. Instead, there’s a growing trend towards the simplification of ingredients, “clean labels” and additive-free food.
Historic and ongoing concerns about artificial additives, colours and flavourings in the West, and health scares in emerging markets – for example, the melamine milk scandal in China – means the world’s parents are scrutinising ingredient lists closely.

When it comes to their children’s health, parents are naturally “risk-averse” – and they are prepared to pay a premium for food they consider “safe”. Concern about pesticides, hormones, antibiotics and toxins found in some non-organic products has ensured the stability of the global organic food market – even through the recession.

Parents, confronted with a vast array of information on what’s good for their children and what’s not, are likely to want a “simplifying strategy” for managing risks. “Pure” products and “clean labels” could provide it.

Early indicators

Three out of four British babies are being fed organic food because of parents’ concerns about pesticides and contamination. Sales of organic food topped £1bn for the first time in 2011.

Source: The Soil Association, August 2011

“The junk food diet turns out to be bad for children’s mental health, as well as their physical health. We need to go further to make parents aware of the potential health problems created by additives, as well as do more to persuade children to eat less E-number-riddled junk food by restricting its marketing and labelling it clearly.”

Source: Richard Watts, co-ordinator of the UK Children’s Food Campaign

Success of simple food for kids, UK

UK-based startup company Ella’s Kitchen is the fastest-growing food brand in the UK. The company’s approach is simple: all products are organic and 100% natural without any artificial additives or preservatives.
Simple goodness

“I want my children to eat healthy foods that are free from nasties”

Future direction

Increased interest in how food for children is sourced and produced is leading to greater transparency in the food and drinks industry – reflected in improved labelling of products and the “free-from” market.

As parents continue to seek the healthiest options for their children, food and drink manufacturers will move towards natural taste enhancers, and focus on simple ingredients. There will be an increasingly important role for natural “super foods” in children’s nutrition.

“Simple goodness” will be particularly important in markets where health risks are perceived to be most acute, and where parents look for “short cuts” to understanding what’s safe for their children.

Challenges and opportunities

• Parents will increasingly want “clean label” products for their children. Re-formulation could be a significant challenge for the food and drink industry.

• Simplicity of ingredients and the absence of artificial preservatives may impact the freshness or portability of children’s food.

• Identifying ingredients with naturally high nutritional value (e.g. super foods for kids) could be a key opportunity for suppliers and manufacturers.
In countries where there’s a fast-growing organic food market and consumers demonstrate strong interest in checking food labels, the market for simple goodness is already mature.

In Italy, 71% of people agree that they always read the label to check the ingredients of the products they buy; in the US, 60%.

The way the food market is regulated is another significant factor. For example, in Italy, a law enacted in 2002 stipulated that the food in nursery and primary schools (three months-10 years) is 100% organic, and the food in schools, universities and hospitals at least 35% organic. Developing products that are simple and “pure” is a huge opportunity here.

In countries scoring low on maturity, but high on dynamism, such as India and China, consumer interest in knowing the ingredients in products is strong, but the organic market less well-established. These countries also have a heightened awareness of health risks – particularly those associated with their children.
Hidden and healthy

“I want to give my kids healthy food that they will enjoy eating”

Creative products, flavours and textures that appeal to children and meet nutritional needs

Rising childhood obesity rates and changing household structures are leading to renewed focus on children’s diet and nutrition. Parents continue to strive to give their children the best start in life, but increasing pressures are making it more difficult for them to freshly prepare healthy food and drink they know their children will like.

Tired and time-poor, parents want solutions that won’t compromise on their children’s health. There’s a significant market for convenient and innovative products that both appeal to children and deliver the nutrition they need.
Childhood obesity is rising at an alarming rate: the WHO states that in 2010 the number of overweight children under the age of five was estimated to be over 42 million, with 35 million of these living in developing countries.

Concern that parents lack the knowledge and skills to provide a diet for their children that is good for them is growing. But the problem is about more than education. Parents are under multiplying pressure that make it even harder for them to ensure their children eat healthy.

Taste and preference is also a significant factor, with children showing similar preferences as adults for foods high in sugar, salt and fat. In some markets, legislators are compensating by trying to curb the consumption of unhealthy foods in schools.

A key challenge facing parents is providing their children with diets high in fruit, vegetables and wholegrains in a format they enjoy. There’s a clear market for healthy, “child-friendly” foods.

Early indicators

In the US, 62% of 1,630 parents with children ages five to 10 say their kids eat junk food one to four days a week. Only 14% of parents say their kids eat at least five fruits and vegetables a day. Source: YMCA survey, 2011

‘For adults, the focus is on food that is enjoyable, that tastes good, and then is healthy ... this is the reverse for children. Mothers will spend a lot more to ensure their child’s health’
Source: Dr Martin Wickham, Head of Nutrition Leatherhead Food Research

Supermarket Tesco introduces ‘rainbow’ cauliflower to appeal to kids, UK
Stunningly coloured varieties of one of the most unloved of all vegetables, the humble cauliflower, are to go on sale in order to widen its appeal, especially to children. Tesco greens buyer Jeni Gray says: 'These cauliflowers are almost works of art and have a real wow factor that should really create a stir with shoppers and hopefully children at dinnertime.'
Future direction

The demand for healthy, fun and accessible food and drink for children is set to increase. Food technology will drive the development of more innovative textures, formats and formulations of products that have high nutritional value and appeal to children. There’s a strong market for products that are able to make healthy ingredients “child friendly”.

Science, meanwhile, is creating a number of opportunities to “disguise” the appearance, as well as taste of fruit and vegetables in children’s food and drink products. These include the bred-to-specification sweeter “sugardrop” tomato, and the use of friendly chemicals such as the enhanced bitterness blocker GIV3616, recently introduced by the American Chemical Society.

Challenges and opportunities

- Making healthier and wholesome ingredients more appealing in children’s food and drinks is a significant opportunity for companies.

- Companies that make it easier to feed children balanced and nutritious diets tap into multiple consumer needs and will be in a strong position.

- Understanding which formats, tastes and textures appeal most strongly to younger palates will be important. Food technology will play a key role in helping manufacturers integrate more fruit, vegetables and fibre into their products.
Hidden and healthy

“I want to give my kids healthy food that they will enjoy eating”

The most dynamic countries are characterised by: relatively high rates of childhood obesity; intensifying pressures on parents and family life; already advanced markets for children’s food and drink.

In less dynamic countries, such as Japan, Russia and India, the incidence of childhood obesity is lower – and the market for packaged foods for children less mature.

In countries where maturity is low but dynamism high, such as China and Brazil, obesity rates are increasing quite rapidly. As these economies expand and the pressures on people intensify, there’s likely to be a strong market for premium-priced, high quality, healthy food and drink for children.
Food as fuel

“I want food and drink that help me perform at my best”

Products that improve physical abilities and stamina

Maximising physical performance and endurance is becoming an integral part of managing health. Products that boost energy levels are moving out of the niche sports market and into the mainstream.

As the pressures and complexities of modern life grow, maximising mental energy and performance is becoming increasingly important, as consumers are looking for ways to increase stamina. Worldwide, the market for performance-enhancing food and drink will be shaped by achievement-focused cultures and the rapid pace of change in developing economies.
In today’s high pressure world, where new technologies have extended working hours; financial uncertainty has increased work-related pressures. The ability to perform at your best – and for longer – is increasingly seen as essential.

There is growing interest in leveraging the performance enhancing benefits of the sports nutrition category and making these appealing and accessible to a broader consumer base.

Having started as a niche category catering only to bodybuilders and fitness enthusiasts, the nutrition bar category has grown into one of the most dynamic segments of the nutraceuticals industry. This can in part be attributed to changing lifestyles: as modern societies continues to move faster, a high premium has been placed on convenience in addition to performance.

Early indicators

The sports drink category has reported annual sales of $7bn. Sports nutrition food and drink brands have the potential for huge growth – if manufacturers encourage mass consumption by widening the appeal of their products.

Source: Journal of Food Science 2010; Datamonitor 2011

‘New segments continue to emerge, as (sports nutrition) products are no longer just for men trying to build muscles. Teenagers and college students, women, and even older individuals are finding out that these products can help them live a more active and healthier lifestyle.’

Source: Dr Greg Paul, global director of sports nutrition for Solae.

Natural performance boosting drinks, Japan

These micro-supplement drinks have recently been launched in Japan, delivering energy boosts naturally for working people in their daily lives.
Food as fuel
“I want food and drink that help me perform at my best”

Future direction
Consumers’ desire to improve their physical performance is a significant opportunity for food and drink companies. Product development and packaging will be critical in exploiting it.

Innovations that improve the design, portability and freshness of performance-enhancing products are already being developed. However, the market for performance-enhancing food and drink has the potential to expand – from supplements and specialist sports products to mass consumer brands.

New ingredients and formulation will mean performance-enhancing effects will be felt more quickly by consumers. For example, Hydration drinks that operate at a cellular level, will work more efficiently in the body.

Challenges and opportunities
• Increasing demand for performance-enhancing food and drink is a key opportunity for manufacturers.
• Overcoming perceptions that performance-related food and drink are “macho” products – or that they’re made exclusively for athletes – will be key.
• Making performance boosting products available to consumers through channels and formats that fit into their busy lives will greatly increase their appeal.
“Achievement” societies such as the US, Japan and the UK are among the most dynamic and mature markets for performance-boosting food and drink. In Japan, we’ve already seen the development of mainstream products that help people cope with increased pressure and stress.

The market in India and China is currently immature and less dynamic – but new peer-group and competitive pressures as the result of economic development may change this. In Italy and France food is less likely to be seen as fuel, culturally food is meant to be savoured – hence, there are currently relatively small markets for performance-enhancing products.
Ageing well

“I want to act and feel younger for longer”

Using food and drink to maintain physical and mental health, extending the capabilities of midlife into old age

Advances in science, rising incomes and better diets mean that average life expectancy is rising in most countries. The corollary is that the incidence of cancer, heart disease, diabetes and dementia is increasing, placing additional burdens on healthcare providers. For consumers there are two main priorities: finding ways to manage health issues as they age; preventing physical and mental decline.

Food and drink will continue to play a key role in helping consumers preserve quality of life. As understanding of the link between nutrition and health improves, we are likely to see more targeted solutions for specific age-related conditions.
Ageing well

“I want to act and feel younger for longer”

Older consumers have a range of health and wellness needs. For some, maintaining a balanced and nutritious diet can be difficult. Tastes tend to change as we age and appetite tends to decrease.

For some consumers, ageing brings a change in taste preferences and reduced appetite, increasing the likelihood of poor nutrition and creating the need for tailored nutritionally rich food and drink that appeals to older palettes.

Increased awareness of the importance of diet in combating disease is likely to lead to an increase in demand for fortified and “functional” foods. Products enhanced with calcium and vitamin D to protect bone density and Omega fatty acids to maintain joint mobility are already on the market.

Early indicators

74% of consumers globally say they are strongly motivated to live a healthier lifestyle because they want to stay active as they age. Source: The Futures Company Global MONITOR, 2010

‘We cannot completely prevent brain ageing, but we can slow it down. I like to think about four major areas in our lives where scientific evidence suggests we can make a difference: mental activity, physical conditioning, healthy diet, stress reduction’. Source: Professor Gary Small, professor of brain ageing and nutrition, US

Development of Alzheimer's drink, US

Souvenaid is a nutritional drink currently being developed by Danone to help prevent memory loss in ageing adults. It contains FortasynConnect, a patented combination of nutrients that includes Omega-3 fatty acids, choline, uridine monophosphate and a mixture of antioxidants and B vitamins.
Ageing well
“l want to act and feel younger for longer”

Future direction
Increased understanding of the role nutrition can play in slowing or reversing the effects of ageing is likely to lead to the development of an increased range of food and drink products for older consumers.

Manufacturers will target an increasingly broad spectrum of age-related conditions – covering both physical and mental health. Scientific research has shown that natural nutrients such as carnitine, curcumin and DHA can prevent cognitive decline and improve memory.

Food and drink that’s good for the brain, heart and bones will grow in importance. Meanwhile, new opportunities will be found in fields such as eye health and sarcopenia (age-related muscle decline).

Challenges and opportunities
• Understanding the tastes and nutritional needs of older people will create opportunities for food and drink companies.

• Nutraceuticals and fortified foods for older generations are likely to be a significant market. Identifying the specific age-related conditions to target will be key.

• Marketing food and drink products as part of a tailored or ‘holistic’ programme to manage health and wellness in old age could play an important role in building trusted brands.
Ageing populations are a global phenomenon in every continent except Africa, potentially creating a huge worldwide market for food and drink that helps older people manage their health.

Increasing awareness of the need to look after yourself in later years is increasing demand in India and China. Currently limited mainly to supplement-based products, these markets are among the most dynamic. Cultural resistance to the idea of being a burden in old age is likely to fuel their growth.

Japan is the most advanced market, with products that address both the “inner” effects of ageing – for example, cognitive impairment – and the physical signs.

In the US, the “baby boomer” population is the driving force behind the market for age-specific food and drink products.

Brazil and Russia are less mature and less dynamic, while interest in managing age-related health problems – particularly, bone health – is growing in France and Italy.

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Healthier by nature

“I want healthier versions of the foods I love that still taste great”

Reformulation of products with natural ingredients – so that they not only taste great but also benefit your health

The global increase in obesity rates and diet-related disease is putting food companies under pressure to develop healthy alternatives to popular products. Although consumers are open to healthier options, they are also unwilling to compromise on taste.

Manufacturers are looking for processing methods that take the “junk” out but keep the taste in. Nature may hold the key. Natural ingredients in product reformulation can offer alternatives to “nasties” – and, in some cases, additional health benefits.
Food and drink companies are under growing pressure from governments and consumers to develop alternative products.

The need for reformulation is being driven by three related trends. Firstly, growing awareness of the impact of salt, sugar, fats and artificial additives on health. Secondly, consumer preferences for “pure”, simple and natural ingredients they understand and finally increased engagement with health, which leads people to interrogate the contents of the products they consume.

The challenge for manufacturers is developing healthier reformulations that still taste good. Sourcing is becoming a critical issue. Finding natural ingredients that are viable alternatives to “nasties” and also promise additional health benefits will be the key to success. New natural sources of natural ingredients – for example, the sea – are being explored.

Early indicators

As part of its self-imposed targets in reformulation, PepsiCo wants 50% of its savoury snacks to be baked or include positive nutrition by 2015.
Source: The Future of Digestive Health Food and Drinks Business Insights, August 2011

‘We’ll be looking to new sources for ingredients, like the sea. Companies are coming to us and asking, “We’re putting this in to reduce the salt; does it have any additional health benefits?”'
Source: Dr Martin Wickham, Head of Nutrition Leatherhead Food Research

‘Seaweed is a rich source of structurally diverse bioactive compounds with valuable nutraceutical properties ... interest in the application of such compounds as natural antioxidants, antimicrobial or texturing agents in different food products is greater than ever’.
Source: Dr Nissreen Abu-Ghannam, Dublin Institute of Technology, June 2011
Healthier by nature

“I want healthier versions of the foods I love that still taste great”

Future direction
Alternative, natural ingredients will increasingly be sought and used to deliver multiple benefits to the health-conscious consumer.

Currently, ingredients such as the all natural sweetener Stevia, tap into the consumer demand for healthier products and no artificial additives. In the future, natural alternatives that deliver additional health benefits are likely to resonate strongly with consumers.

But it’s natural products with additional health benefits that will make the most impact. For example, seaweed is increasingly being used as a successful salt replacement in range of food products. It also has antimicrobial and antioxidant properties, which would reduce the need for artificial additives. In addition, early stage research suggests that it may also have a positive benefit on heart health – delivering the consumer a truly healthier product on multiple dimensions.

Challenges and opportunities
• Reformulation will help satisfy consumer demand for healthier food – and keep regulators and governments happy.

• New sources of health giving ingredients to aid reformulation are likely to come currently untapped sources, such as the sea.

• The ability to combine multiple benefits to consumers in one product – naturalness, healthy alternatives to salt/sugar, ingredients with health-giving properties – is a significant commercial opportunity for food and drink companies.
Large food and drink manufacturers are already focusing on healthier reformulations in markets such as the US and UK, where obesity and “lifestyle-diseases” are relatively common.

Japan, where food science and technology is advanced, is a potentially dynamic market for reformulated products. However, low rates of obesity mean it’s less mature.

Developing economies are also dynamic. Low but rapidly rising rates of diet and lifestyle-related disease, coupled with strong cultural preferences for natural products, make them potentially strong markets for foods that have been reformulated with natural ingredients.

In Brazil, where obesity rates are growing rapidly, food and drink companies are increasingly coming under government pressure to take action.
Using food science to create products that improve digestive health

Consumer interest in digestive health continues to rise; the market for food and drink with pro- and pre-biotics is well established, and the link between digestion and energy levels better understood. Meanwhile, science is beginning to identify specific substances that play an important role in the selection, ingestion, absorption and metabolism of essential nutrients. Food and drink that actively improves the absorption of nutrients will have strong commercial appeal.
The incidence of digestive health problems is increasing. Busy lifestyles, irregular mealtimes, junk food and more culturally diverse diets have all taken their toll on our bodies.

The mainstreaming of pro- and pre-biotic products reflects strong consumer interest in managing digestive health.

The next opportunity for manufacturers is likely to be products that improve the efficiency of the digestive system, aiding the absorption of nutrients and stimulating the appetite.

Research into the enteric nervous system (the network of nerves cells in the stomach and digestive tract) is revealing the impact of the food we eat on the way our digestive system works.

Early indicators

Among all new global functional food and drink products recorded by Product Launch Analytics during 2007-10, 21.2% were claimed to impart digestive health benefits to the consumer.

Source: The Future of Digestive Health Food and Drinks Business Insights, August 2011

‘Umami substances not only add umami taste to foods but also increase their flavour and thereby improve the appetite. Recent studies suggest that these substances play an important role in the selection, ingestion, digestion/absorption and metabolism of foods that are essential for life.’

Source: The Ajinomoto Group

Slow digestion rice starch with better nutritional profile, Japan

New research from the National Agriculture and Food Research Organisation in Japan has shown that adding non starch polysaccharides to rice starch (the fine power used in wide range of food products) can slow down its speed of digestion, creating rice starch gels with a better nutritional profile.
New frontiers of digestive health

“I want to get the most out of the food I eat”

Future direction

Science is revealing the properties of substances such as umami, a form of glutamate that occurs naturally in some foods, and the role they could play in improving digestion.

Increased understanding of the enteric system will help manufacturers develop products that deliver enhanced digestive-health benefits.

Currently, food and drink manufacturers are focusing on umami as a flavour enhancer, but research suggests it has the potential to regulate the digestion of food-based protein and carbohydrate.

In the future, consumers could be encouraged by science to eat umami-rich or umami-enhanced foods to improve the efficiency of their digestive systems and allow them to absorb more nutrients from the food they eat.

Challenges and opportunities

- The success of pro- and pre-biotic products in European and Asian markets indicates strong consumer demand for food and drink that targets digestive health.

- Products that blur the boundaries between food and ‘medicine’ must be carefully launched and marketed. Regulation from the European Food Safety Authority puts greater emphasis on providing scientific evidence for digestive benefit claims.

- Effective communication of the advantages of digestive-health products will be essential. Realistic consumer expectations of the product will be key to repeat purchases.
New frontiers of digestive health

“I want to get the most out of the food I eat”

Consumers in markets in the top right-hand quadrant have access to a growing range of digestive-health food and drink products and have a clearer understanding of the link between digestion and overall health and wellness. Although the market for functional food and drinks is significant in the US, digestive-health benefits (particularly those associated with bacteria) are much less well understood and accepted by consumers. However, there is the potential to move quickly in this market if consumer education improves.

Consumers in China and India have long focused on digestive health, and use a variety of food and drink products and supplements to manage it. The opportunities for umami are likely to be strong in these markets – provided the consumer benefit is articulated in a culturally sensitive way.

The market for digestion-focused food and drink is less significant in Russia and Brazil. Russians continue to use traditional products such as kefir to manage digestive health – nonetheless, from a small base, the opportunities in food and drink with digestive health benefits are increasing fast.
Brain food

“I want to boost my concentration, focus and mental stamina”

Food and drink that optimises mental energy, acuity and alertness

As the complexities of everyday life increase, mental acuity becomes more important. To manage competing demands on our time, we must remain alert and focused.

The concept of “fitness” increasingly extends beyond physical health, and as demands on consumers’ time and energy increases, the desire to get the most from each moment intensifies. Food and drink (both natural and enhanced) that boosts concentration is becoming more popular across different age groups.
Brain food

“I want to boost my concentration, focus and mental stamina”

In the face of growing daily pressures and demands, an increasing number of consumers are looking for ways to stay focused, alert, mentally “fit” and strong.

There are currently two main strategies for boosting brain health. Firstly, as science continues to reveal the health boosting properties of natural food and ingredients, naturally brain boosting foods such as oily fish and nuts are becoming an accessible and easily understood solution for consumers to manage their long term brain health.

Secondly, energy shots, brain boosting supplements and fortified drinks containing ingredients such as caffeine, acetyl-L-carnitine and glutamine are growing in popularity as consumers look to boost their short term mental performance – particularly amongst younger demographics.

Early indicators

The importance of staying mentally active is consistently high to consumers globally. The global average is at 82%, with the highest level of agreement at 86% in Brazil.

Source: Global MONITOR 2011

‘Today, an increasing number of healthy people are using drugs without a prescription as a way to improve their mental function (neuro-enhancement). A surprising number of students are turning to drugs like Adderall and Ritalin, originally developed to treat attention disorders, to boost their brain power and help them make the grade.’

Source: CBS News, April 2010

Chewing gum that promotes mental focus, Sweden

Vigo – a chewing gum claimed to boost mental focus and improve mental performance – is a brand new product on the Swedish market. Its ingredients include caffeine, ginseng, vitamins and minerals.
Brain food

“I want to boost my concentration, focus and mental stamina”

Future direction

The desire for mental “fitness” will increase – across a broad spectrum of consumers. Older people will seek ways to keep their brains active and remain mentally alert; parents will want to include “brain foods” in their children’s diets; younger people, facing increased competitive pressures at work or university, will look for ways to boost short term mental performance and improve mental capabilities.

There are increasing opportunities in both natural “brain foods” and “synthesised”, formulated alternatives.

Energy drinks will continue to dominate the young consumer market, though new formats (such as gum) are likely to become more popular.

Though very niche, emerging interest in drugs such as Ritalin that improve focus indicates there may be wider appetite for food and drink that can re-create the effects of such drugs.

Challenges and opportunities

• The target audience for brain-boosting products spans all demographic segments, including pregnant mothers, babies, toddlers, children, teens, adults and older consumers.

• A key challenge for manufacturers will be developing a broad range of products – and successfully targeting all groups.

• Natural ingredients will be a powerful cue for consumers new to the brain boosting food and drink space.
Japan and China are both open to functional food and drink, and culturally focused on maximising performance. An emphasis on high achievement in education and careers means products that being able to boost concentration levels and mental stamina will hold strong appeal in Asian markets.

The UK, the US and Brazil have shown keen enthusiasm for energy drinks, with growing focus on natural mental energy boosting ingredients.

Southern European markets are much less dynamic in this space. Mediterranean diets are traditionally rich in natural “brain foods” – for example, oily fish and nuts. The Italian and French are much more likely to be sceptical about manufacturers’ claims for performance-enhancing food and drink – and much less likely to see dietary supplements as necessary.
Maximising the potential of natural ingredients and the bio-active components in natural foods

For the majority of consumers, foods and ingredients that are natural hold very strong appeal. Most consumers – rightly or wrongly – associate “natural” with “healthy”.

Scientific research is revealing the active compounds in natural ingredients that benefit our health the most. There’s significant potential for food and drink companies to use natural ingredients and the most nutritionally active compounds found in nature to deliver enhanced health benefits to consumers.
Dialling up nature
“"I'm looking for natural solutions to boost my health”

As the link between diet, nutrition and health strengthens, consumers continue to be drawn to natural food and drink products that are associated with positive health and wellness benefits.

There is increasing consumer awareness and understanding that some food and ingredients are more nutrient rich than others. For example, the term ‘antioxidant’ is becoming more recognised amongst consumers. Companies are leveraging the benefits of these – and communicating them “on pack”.

As scientific research reveals the specific benefits of nutrient-rich foods, there’s a clear opportunity for companies to improve their products – to improve consumers health.

Early indicators

40% of US adults say they very often or somewhat frequently consumed foods described as “rich in antioxidants”.

‘Global sales of antioxidants used as an ingredient have been rising by more than 3% per annum in recent years. At present, usage is heavily skewed towards developed parts of the world, such as the US, Europe and Japan.’

Nescafé Green Blend antioxidant coffee, France

Launched in 2010, Nescafé Green Blend is positioned as antioxidant-rich. Researchers found a way of preserving the antioxidants naturally found in coffee for an instant blend. Nestlé conducted studies to prove that the Green Blend could help fight against ageing.
future direction
Understanding of the power of antioxidants is becoming more widespread – and new research is revealing the increased benefits of such ingredients.

In the future, it's likely consumers will be encouraged to eat naturally nutrient-rich foods in combinations that maximise health benefits. Research has, for example, shown that eating walnuts and blueberries together may help reverse brain ageing.

Identifying ways to use the most potent bioactive compounds in natural ingredients will be a major opportunity for food scientists and manufacturers. The isolation of health-giving phytochemicals (chemical compounds that occur naturally in plants), for example, could be a significant breakthrough: adding these to products will help meet the demand for “preventative healthcare” food and drink.

challenges and opportunities
• Advanced scientific research into the health benefits of natural compounds is leading to new product development opportunities.

• Identifying natural ingredients that deliver additional health benefits to consumers could deliver significant advantage.

• Educating people about the benefits of consuming different food and drinks in specific combinations could be a powerful “easy win”.

Dialling up nature
“I’m looking for natural solutions to boost my health”
Preference for natural food and drinks is consistently high across all markets. However, consumer understanding and interpretation of the link between naturalness and specific health benefits varies widely between markets.

Consumers in the US, Japan and, to a lesser extent, the UK, are becoming increasingly aware of terms such as “antioxidants”, which now feature more commonly on product labels. These markets also tend to be more open to fortified food and drinks, creating a potentially significant opportunity for products enhanced with bioactive natural ingredients.

In France and Italy, there’s greater focus on managing health through a balanced diet – rather than through functional foods or supplements.

There is some limited consumer awareness of terms such as “antioxidants” in India and China. However, the link to specific health benefits and disease prevention is still emerging.
Mood food

“I want the food I eat to make me feel happier”

Managing daily emotional highs and lows through food and drink

Scientists, dieticians and consumers are placing greater emphasis on emotional and mental wellbeing. Many people now choose a self-help approach to psychological health – alongside, or even instead of, prescribed medication and therapies.

As the link between nutrition and mental health becomes more understood, consumers are likely to use food to manage their emotional wellbeing – in both the short and long term.
Increased incidence of depression and mental health problems has led to a sharper focus on emotional wellness. Governments across the world are reprioritising the happiness of citizens and acknowledging emotional wellbeing as a measure of national progress.

It’s known that foods naturally high in the amino acid tryptophan can improve mood. Tryptophan is converted by the body into serotonin, an important brain chemical that regulates impulse control and appetite, elevates mood and feelings of optimism, improves self-esteem and induces calm.

Beyond this, the link between food and mental health is generally quite poorly understood. However, research is revealing new ingredients with mood-enhancing effects – and these could potentially be added to food and drink products.

**Early indicators**

44% of consumers globally say they **suffer from stress** nowadays. 46% say they are satisfied with their emotional wellbeing, **down from 54%** in 2010

Source: The Futures Company Global Monitor 2011

‘Next-generation foods will be custom-designed to meet the needs and the desires of an individual consumer. Food will be engineered to exaggerate its mood-changing power. A consumer will be able to formulate their own food according to their mood’

Source: Shahana Malik, food science analyst, Nerac

**Success of ‘mental balance’ chocolate, Japan**

One of the most successful mood-food products is Ezaki Glico’s stress-reducing ‘Mental Balance Chocolate GABA’, with first year sales of $50m, surpassing all forecasts.
Mood food

“I want the food I eat to make me feel happier”

Future direction

Research into the enteric nervous system is continuing to reveal the impact of different foods on brain activity. New studies have shown fat-rich food affects regions in the brain associated with sadness. In the future, there will be an opportunity for food and drink manufacturers to create healthier products that replicate the mood-enhancing benefits of high-fat or salty foods.

Additionally, new understanding of ingredients that positively impact mood are emerging, such as DHA’s (a type of Omega 3 fatty acid) and L-Theanine, extracted from green tea leaf.

Early-stage research is also revealing a link between pro-biotic bacteria and mood. In the future, pro-biotic agents could be used to treat mood and anxiety disorders. For consumers, this could mean buying food and drink products that benefit both digestive and emotional health.

Challenges and opportunities

• In the future, food and drink could be positioned as a tool for managing emotional and psychological health.

• Reformulating healthy food and drink to replicate the mood-enhancing “rush” of junk and comfort food could be a big opportunity.

• Communicating the link between gut health and positive mood to consumers could reinforce the benefits of certain food and drink products.
Japan is the current leader in the development and use of foods with added ingredients to manage mood. Consumer demand is strong – and advanced ingredients are already being included in a range of functional food and drinks.

Worldwide demand is likely to be fuelled by the economic growth of India and China. As consumers “transition” to more hectic lifestyles, the need to manage stress and maintain “inner” strength and stability will grow.

Though the link between emotional wellness and food is strong in Southern European markets, a somewhat limited consumer desire for functional foods without tangible or visible benefits may limit the dynamism of this opportunity space in the future.
Beauty from within

“I want to eat foods that help me look my best”

Food and drink that improves physical appearance

Looking good and enhancing appearance continues to be a priority for consumers. Many consumers are recognising that eating and living well is reflected in an outward appearance of vitality.

There is a growing desire to take this a step further, by consuming food and drinks with added ingredients that work to visibly improve the health and outward appearance of skin, hair and eyes. Though still a niche area, there will be a growing opportunity for food and drink manufactures to create product that deliver beauty from within.
For consumers in many markets, the immediate motivation to look after their health can be driven more by short term benefits. With increasing focus on outward appearance, there is rising interest in functional foods with aesthetic benefits.

The nutricosmetics market has shown strong growth. Micro nutrients lycopene, lutein, zeaxanthin and beta-carotene are said to promote healthy vision and protect the skin against the adverse effects of UV radiation. Antioxidants can “mop up” the free radicals that damage DNA.

Time-poor consumers will increasingly seek quick and easy ways to improve the way they look. There’s a strong opportunity in food and drink products that deliver visible benefits.

### Early indicators

The global nutricosmetics industry will be worth around $4.24bn by 2017. It is the fastest growing segment in the global skincare market with annual growth per year estimated at around 11% between 2008 and 2012.

Source: Global Industry Analysts Inc, Kline 2010

‘Asia is regarded as the most important region for ingestible beauty, driven by consumer demand and also because the regulatory system there is more sophisticated than in Europe’.

Source: Nica Lewis, head consultant, Mintel Beauty Innovation

### Lato G’s tanning ice cream, Italy

Milan based ice-cream parlour Lato G has introduced three ice cream varieties to improve the skin. Acai, based on Peruvian Açaí palm fruits, rich in A, C, and E vitamins, is marketed as an anti-ageing ice cream. Goiaba, from a Brazilian fruit, is said to stimulate tanning by its high vitamin A content. Finally, Greek Yogurt, rich in pro-biotics, is said to help skin regeneration and elasticity.
Beauty from within
“I want to eat foods that help me look my best”

Future direction
Though a niche area at the moment, consumer interest in food and drinks that deliver outward appearance benefits is likely to show strong future growth.

Focus on outward appearance, not only as a reflection of good overall health, also of status in some markets will not diminish. Natural based ingredients that positively impact appearance and are easily recognised and understood by consumers will be key.

As the market matures, however, consumer acceptance of scientifically based ingredients and more advanced solutions will grow.

Challenges and opportunities
• Investigating whether existing ingredients in food and drink products benefit appearance could be an easy win – and an early opportunity.

• Foods that are able to deliver visible results in a short time frame will appeal most strongly to consumers.

• EFSA regulation in European markets could be a potential barrier in this area, particularly around proving visible benefit claims.
“Beauty food” is big in Asia. Japan has seen the highest number of product launches – and the market there is both dynamic and mature.

Like the Japanese, Brazilians place strong emphasis on looking good – and this is, again, reflected in a high number of new beauty food and drink products.

European consumers are keen to manage their appearance but appear to be less open to using functional food and drink to do so. Scientific credibility in these markets could be key. In France, supplements to improve appearance are used quite widely – and they’re recommended by doctors.

Russia could potentially be a dynamic market for this opportunity area as managing outward appearance is a very key focus for consumers (particularly women). The limited number of appearance enhancing food and drink products that are on the market have been successful to date – indicating potential consumer demand.

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Fill me up

“I want to feel fuller for longer”

True satiety food and drinks that re-programme the body with longer lasting effect

Weight continues to be a key concern for consumers. In the developed world, governments constantly remind them of the rise in obesity and diet-related diseases – and the resulting burden on healthcare.

Many diets have focused on the importance of slow-release energy foods in reducing overall calorie intake. And, in recent years, the concept has been commercialised, with “satiety” products sold directly to the weight-conscious consumer.

Understanding the physiological mechanisms that regulate feelings of fullness and satiety is a key area of scientific research for the food and drink industry.
Obesity and excess body weight is a complex problem – reflecting genetic, environmental and psycho-social factors. Solving it is difficult.

Manufacturers and retailers are increasingly focused on food and drink that helps consumers feel full for longer and reduces the need for snacking between meals.

Current products are based on scientific understanding of how different macronutrients (such as protein and complex carbohydrates) promote feelings of satiety.

But the mechanisms that explain the link between nutrition and satiety are not yet fully understood. At the moment, the best solutions we have are products that “trick” the body into feeling fuller in the short term.

Britons spent £45m in 2010 on ‘satiety’ products designed to fill the gut and satisfy the appetite.

‘The food and drink industry sees satiety as “the golden goose” ... the body has a very good understanding of what we feed it; we can only trick it in the short term’
Source: Dr Martin Wickham, Head of Nutrition Leatherhead Food Research

Britannia NutriChoice cookies, India
‘Diabetic Friendly’ Essentials Oat Cookies were created to help diabetics manage extreme swings in blood sugar levels. They help control blood cholesterol and allow you to feel satisfied and stay active for longer.
Fill me up
“"I want to feel fuller for longer”

Future direction
A significant opportunity lies in unlocking the link between the brain and the enteric nervous system to understand how nutrition can be used to re-programme the body to feel fuller for longer. The physiological biomarkers for appetite in individuals will be an important area of research.

The key lies in re-educating the body to eat less in the longer term, rather than tricking it in the shorter-term. Current “fuller for longer” offerings often lead to “over compensating”: more calories are consumed in the next regular meal as the body tries to readjust.

In the future, food and drink that creates a physiological need for less food could resonate strongly with weight-conscious consumers.

Challenges and opportunities

• “True” satiety products could make a major contribution to the battle against obesity and related diseases.

• Research into “true” satiety products remains in its early stages. Food and drink companies should ensure they are in a position to move fast when it becomes a commercially viable opportunity.

• Considerable investment might be required to educate consumers about the long-term benefits of physically “re-programming” food and drink.
The more mature and dynamic markets are those that already meet consumer demand for “satiety” food and drink – and are actively researching how products could be improved.

Obesity rates in these markets are high. In the US, 16% of people say they eat salty snacks at least once a day, compared with a global average of 9%. Developing products that keep people fuller for longer and help them to avoid snacking is a huge opportunity here.

Markets with a relatively lower level of dynamism and maturity, such as France or Japan, have lower levels of obesity and a strong food culture and tradition that lessens the need for products that control appetite.

Emerging markets show potentially high dynamism in this area as obesity rates increase at a rapid rate (though from small bases in China and India).
Use of population-wide genotype analysis to create foods and drinks to target specific, shared health concerns

Science, the food industry, retailers and consumers are slowly moving from a “one size fits all” approach to diet, nutrition and health.

As consumer awareness of the link between nutrition and health continuously improves, consumer demands are becoming more sophisticated. Individuals want products for people like them – products that address their particular needs and vulnerabilities.

Advances in genetics-based nutrition research will help drive the move towards functional food and drink aimed at different groups of the population.
The global market for functional foods shows potential for strong growth, driven by rising health costs, rising disposable incomes (particularly in developing countries) and ageing populations. Consumers are increasingly open to foods that allow them to see or feel tangible benefits, including preventative healthcare solutions.

Advances in science will allow the development of more targeted food and drink products. Currently, the vast majority of consumers do not have access to an understanding of their genetic profiles or an understanding of their predisposition to certain health conditions. However, as the cost of these services falls, it will be easier to identify groups of individuals within the population who could benefit from targeted food and drink products.

Early indicators

The global market for functional foods and drinks is projected to exceed $130bn by the year 2015. Source: Global Industry Analysts, 2010

‘Disease-focused targeting will improve, creating a clear demand for more personalised nutrition. The demand for foods that offer health benefits and even promote disease prevention will become more important in order to avoid the long-term costs.’

Drinks with added lutein for improving and safeguarding long-term macular health, Korea and the US

Functional foods are now targeting a broader range of health conditions. These drinks contain the nutrient lutein that works to promote eye health.
Future direction

A significant opportunity will arise for food and drink manufacturers to offer products for specific groups with specific health conditions.

Consumers suffering from common chronic illnesses or at risk of common conditions – for example, cancer, heart disease and diabetes – are likely to be targeted first.

In the future, the supplement aisle in supermarkets may be replaced by a functional food aisle; products that help manage the risks of contracting certain illnesses or slow the development of disease could be commonplace.

Challenges and opportunities

- Food and drink products may increasingly be categorised by their health benefits.
- To overcome public resistance to functional food in some markets, companies will need to demonstrate and communicate the tangible benefits on offer.
- Scalable opportunities are likely to arise first for food and drinks targeted at conditions that affect large numbers of people – and are easily identified.
Targeted functional food and drink products represent a significant opportunity in markets that are ageing, and where consumers are more open to seeing food as a tool to actively manage their health and prevent disease. Hence the strong position of Japan, the UK and the US.

China and India represent significant growth areas for this opportunity. Their populations are ageing significantly, and there is existing consumer awareness of the role of supplements or fortified foods to target specific health conditions, such as diabetes, heart health and bone health.

France and Italy, where consumers are “culturally averse” to the idea of food as a “medicine”, show slightly more resistance. The French in particular are sceptical of health-related claims for functional foods; manufacturers will have to convince them that functional food works.

Russia, where male life expectancy is lowest in the developed world, is the least mature and most slow-moving market. The priority here is meeting more basic healthcare and nutrition needs.
Renewal food

“I want my body and mind to be restored whilst I sleep”

Food and drink products that deliver physical and mental benefits whilst you sleep

The importance of sleep to mental, emotional and physical health is well-known. However, increasingly hectic and stressful lifestyles and changing work patterns mean fewer of us regularly get a good night’s rest. As the quantity of sleep declines, the quality of every sleeping hour counts.

The role that food and drink can play in aiding sleep is set to increase as consumers look for solutions that help them find respite in their hectic lives.

In addition, there will be a significant opportunity for food and drink to not only aid sleep, but to enhance the natural repair processes of the body and mind, allowing consumers to feel healthier and revived on waking.
Increasing time pressures, stress and busy lifestyles is prompting a refocus on sleep as a way of resting and revitalising the body. Changing lifestyles means that for many consumers, time to sleep has been increasingly squeezed.

With less time for rejuvenation, consumers are keen to maximise the value they get from every moment of sleep, increasing the importance of the quality, as well as the quantity of rest they receive.

The market for herbal or natural remedies for insomnia and sleep disturbance is well-established. However, more advanced ingredients such as melatonin (a hormone that regulates sleep patterns) are beginning to appear, increasingly in the form of fortified food and drink.

Early Indicators

People see getting more sleep as a key to improving how they feel. Globally, 85% of consumers say they regularly or occasionally sleep extra hours or take a nap to improve their sense of wellbeing.
Source: Global Monitor 2011

‘We are starting to see an increase in foods that impact our sleep and revival … these will hit the mainstream very hard’
Source: Dr Martin Wickham, Head of Nutrition Leatherhead Food Research

Drink that works whilst you sleep, US
This beauty-sleep drink contains clinically proven anti-ageing ingredients to maintain skin tone and elasticity, reduce inflammation, and protect cellular and tissue health. These are combined with ingredients to help induce sleep, giving the skin time to repair.
Renewal food

“I want my body and mind to be restored whilst I sleep”

Future direction

Current offerings in this space include food, drinks or supplements that aid or help induce sleep. In the future, food and drinks will not only aid sleep, but will work to enhance the natural repair processes that the body and mind undergo while consumers rest.

Innovations in sports nutrition are already creating opportunities for food and drink manufacturers. A number of sports drinks contain time-release proteins that are slowly digested to aid muscle repair during sleep.

Leveraging this kind of technology for the mainstream market will be important for food and drink companies.

Challenges and opportunities

• As significant numbers of consumers across markets turn to aids to help them sleep, renewal food could be a scalable opportunity.

• Ingredient or formulation innovations in other sectors (such as sports nutrition) provide an important platform for companies.

• Food science could significantly enhance understanding of the ingredients or components that help repair the body as we sleep.
Renewal food

“I want my body and mind to be restored whilst I sleep”

Markets with relatively higher levels of maturity and dynamism in this area are those where changing lifestyles and the pace of life are taking their toll on consumers in terms of low energy and high stress levels. As a result, consumers here are more open to using products that aid sleep, and will be focused on maximising every moment of rest – showing potential consumer enthusiasm for food and drink products that deliver enhanced renewal benefits.

Markets such as India and China are currently less mature. However, they could develop relatively quickly as consumers look for ways to manage increased pressures in their lives.

In Russia, many consumers live stressful lives and many have difficulty managing their health and wellness effectively. However, high barriers to entry and limited retail access outside Moscow and St Petersburg may impede the development of renewal food and drink products here.
High benefit, low impact
“I want sustainable food that offers good nutrition”

Identifying or modifying food staples that provide maximum nutritional benefits – and cause minimal environmental damage

Population growth, climate change and rising resource prices are putting unprecedented pressure on global food markets.

In countries such as India, where rates of malnutrition are high, population growth and the rise of an affluent middle class “hungry” for Westernised diets, are further increasing the demand for food.

As the price of energy rises, affecting the cost of food and raw materials, governments in the developing world are struggling to secure supplies of nutritious food. At the same time, countries such as the UK continue to rely heavily on imports.
Securing the supply of nutritious food for a growing global population will require a new, concerted approach from governments, scientists and food and drink manufacturers.

Under-used crops such as millet – disease and drought resistant – may hold the key to solving the problem of future resource shortages.

Emphasis will increasingly be placed on super nutrient-rich crops that deliver enhanced benefit to growing populations. Genetic modification and nanotechnology are being used to develop food staples that can be produced in high volumes – and help solve the problem of malnutrition.

Early indicators

Food prices are forecast to increase in the range of 120–180 per cent over the next 20 years as resource pressures mount and climate change takes hold.

Source: Oxfam 2011

‘You can genetically engineer crops to be better organic crops. At the moment, I don’t think many people would accept that, but I think eventually they will’

Source: Gordon Conway, professor of international development at Imperial College, London

Super-nutrient food, India

India is deploying a new weapon against malnutrition: “bio-fortified” crops packed with nutrients. The first of these, high-iron pearl millet, will be introduced in 2012. Indian research facilities are also close to breeding high-zinc wheat and provitamin-A rice and maize. “Together, they have the potential to improve the nutrition of millions,” says Kedar Rai, the director of HarvestPlus, part of a globally funded alliance that has introduced super foods in impoverished Sub-Saharan Africa.

High benefit, low impact

“I want sustainable food that offers good nutrition”
Future direction

Consumer resistance to “engineered” food continues to be high – particularly in European markets. But global population growth could force a change in attitudes. Disease-resistant and nutrient-enhanced crops could provide a sustainable solution to the problem of malnutrition in the developing world.

Technology will increasingly be used to manage the environmental impact of the food industry. Advances such as 3D food printing, already at prototype stage in the US and Japan, may allow us to construct foods on demand, reducing waste.

In the future, stem cell technology could be used to create “laboratory” protein-rich food, dramatically reducing the carbon footprint of the meat production industry and providing future generations with a sustainable source of nutrition.

Challenges and opportunities

- Consumers are likely to become more aware of the environmental impact of the food and drinks they consume.

- Governments meanwhile are under increased pressure to secure long-term supplies of nutritious food. Leveraging scientific advances that enable the production of nutrient-rich sustainable foods could be a significant opportunity – provided companies can meet the development costs.

- The continuing – and escalating – problem of micronutrient malnutrition could force a change in attitude to GM foods, creating more opportunities for manufacturers.
High benefit, low impact

“I want sustainable food that offers good nutrition”

Mature markets lead the way in terms of the development, trialling and adoption of genetically modified crops and foods. In the US, for example, food scientists and agriculturalists are developing perennial versions of corn, wheat and rice that don’t need to be planted every year. The environmental benefits of these kinds of “resource-saving” crops are significant.

High malnutrition rates and population growth is hastening the adoption of GM foods and crops in India and (to a lesser extent) China.

Cultural resistance to the blurring of food and science, and low rates of malnutrition, mean the opportunities for “high benefit, low impact” food in France and Italy are limited.
The use of genetic profiling from birth to develop personalised food and drinks that optimise life long wellness

Scientific advances are leading to a much more sophisticated understanding of the link between genes, nutrition and health. Though still in their infancy, the fields nutrigenetics and nutrigenomics are helping scientists and nutritionists build a better picture of the potential for developing “bespoke” supplements, foods, drinks and diets.

As consumer engagement with their health increases, it is likely that for a small segment, having access to a better understanding of how their genotype might allow them to maximise their nutrition and health will become appealing.
As life spans extend, consumer engagement with managing their long term health will continue to rise. Rising health costs and the burden of lifestyle and age based diseases means consumers are expressing a desire to take more responsibly for and control over their health.

In the long-term future, advances in science may allow people to do this in much more sophisticated ways.

Nutrigenomics explores the influence of nutrients or bioactive dietary compounds on “gene expression” and an individual’s risk of developing certain diseases. Nutrigenetics is the study of how variations in an individual’s genetic makeup can increase or decrease the need for a specific nutrient or bioactive food component.

Both fields could result in the development of supplements, foods and drinks “matched” to an individual’s genetic profile.

**Early indicators**

Nearly half (47%) of UK consumers currently find the idea of using information about their genes to provide nutritional and diet-related advice appealing.

Source: Datamonitor, 2011

*‘The falling cost of sequencing means that we are rapidly approaching an era in which access to personalised genomic information is likely to be widespread.’*

Source: Nature Review: Genetics, Feb 2010

‘As interest among consumers increases, we expect to see a surge in the number of food and drink companies launching products with DNA/genetic influences over the next few years.”

Source: Datamonitor, 2011

**Genetic-based weight loss supplement, US**

Advances in nutrigenomics allow custom-made supplements based on four DNA markers. Biosciences company Salugen currently offers DNA-customized nutritional solutions, marketed under several brands, including GenoTrim(TM) for weight management.
**Future direction**

As the cost of genetics-based testing falls, and consumers become more open to genetic analysis, we could, in the long-term, see personal health managed from birth.

Consumers will be able to make informed choices about the lifestyles that will safeguard lifelong health – including choices about what to eat and drink and what to feed their children. There is likely to be a market for food and drink tailored to genetic-base health profiles.

There will also be a key role for trusted advisors to help consumers navigate and understand their genetic profile, what this may mean for their health, and how this should shape their behaviour.

**Challenges and opportunities**

- The blurring of food and pharmaceuticals will create opportunities for food and drink companies to partner with other organisations – and jointly develop new markets.

- Making “bespoke” food mainstream will be a difficult – and, perhaps, long-term challenge. At first, the market is likely to be restricted to the most engaged customers – or those most at risk of inherited disease.

- Protecting consumer data will be essential – but there may be an opportunity for food and drink manufacturers to offer advisory services.
Research into the link between genes and nutrition is mainly being pioneered in Japan, Canada, Scandinavia, the US and the UK. Though its "commercialisation" is some way off, it's likely the opportunities will emerge there first.

Consumers in Japan, the US and the UK are likely to be the most open to using genetic information in making diet and lifestyle choices. 55% of American consumers in 2011 said they were interested in using genetic information as a nutritional guide, up by 11% since 2008; UK consumers show a similar level of interest.

Emerging Asian markets could show relatively high levels of dynamism, compared with Southern European markets, where the desire for personalised, gene-based food and drinks is likely to be limited due to cultural attitudes that are sceptical of a science-based approach to nutrition.

Attractiveness and attainability
Attractiveness and attainability

The following part of the report outlines the relative attractiveness and attainability of the 15 opportunities from the perspective of Irish food and drink manufacturers. It takes into consideration a range of factors, including the existing capabilities of companies, their brands and products, geographical penetration, and access to science and technology.

Criteria for attainability

• The extent to which R&D is ready to be commercialised; the development of science and technology.

• The extent to which an opportunity depends on further tests and trials – and is impeded by regulatory barriers.

• The extent to which investment would be needed to increase consumer awareness and understanding of product benefits.

• The extent of existing channels to market – and the potential size of the markets themselves.

Criteria for attractiveness

• Potential profitability (e.g. whether the opportunity is high volume and low margin or low volume and high margin).

• Signs of emerging consumer needs (e.g. whether existing demand could yield short-term returns).
Attractiveness and attainability

- Relatively high attractiveness, low attainability
- Relatively high attractiveness, high attainability
- Relatively low attractiveness, low attainability
- Relatively low attractiveness, high attainability
The area of children’s nutrition is a significant opportunity. Developing healthier, convenient, tasty products that appeal to parents and kids requires leveraging food technology as well as ingredient innovation – but important first steps have already been made.

Changing demographics create a big market for food and drink that helps consumers to manage their health into old age. The number of products in the ageing well category is continually increasing – and demand is strong. A key challenge will be navigating increasing regulation.

Dialling up nature means using research into the health-giving properties of natural ingredients in new-product development. The potential for including natural bioactive compounds in food and drink that offer enhanced health benefits could be significant.
Attractiveness and attainability

Relatively high attractiveness, low attainability

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<th>Mood food</th>
<th>Fill me up</th>
<th>Renewal food</th>
<th>Food shelf of the future</th>
<th>Healthier by nature</th>
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Highly attractive opportunities with relatively low attainability show potential for significant or mass consumer demand – provided a number of barriers can be overcome.

In the fill me up space there are technical constraints: we have yet to reach the level of understanding required to truly re-programme the body such that it could significantly impact the problem of global obesity. Mood food and renewal food depend on manufacturers’ ability to commercialise scientific knowledge of the ingredients that help manage moods and stimulate and aid repair.

Developing products for the food shelf of the future requires large-scale, population-wide genetic identification of individuals who would benefit from targeted food and drink. It’s still in its formative stages – and requires significant investment in consumer education. Healthier by nature could involve potentially transformative food technology innovations.
Attractiveness and attainability

The **food as fuel** category is a relatively attainable market – but one that remains low in attractiveness. Scientific understanding of how food and drink can be used to enhance and boost performance is fairly advanced, and, increasingly, transferring from the sports nutrition category. However, future consumer demand is likely to be limited to relatively niche groups of more engaged individuals looking to use food to stretch their physical capabilities and mental stamina.

Consumer interest in and demand for **beauty from within** food and drink products is growing in a number of markets. However, the potential varies quite widely by region. The biggest opportunities will continue to be in Asia, as regulatory barriers potentially limiting their growth in Europe.

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Relatively low attractiveness, high attainability

**Food as fuel**

**Beauty from within**
Attractiveness and attainability

Relatively low attractiveness, low attainability

Brain food

New frontiers of digestive health

High benefit, low impact

Designed for me

Depending on further scientific research and new understanding of “active” ingredients, brain food and new frontiers of digestive health are categories where opportunities are currently quite limited. The significant markets continue to be in Asia. Opportunities in Europe will remain relatively niche in the short term. Proving claims that products can benefit digestive health and the brain function will be a key challenge.

The development and commercialisation of high benefit low impact food requires significant investment – and a change in consumer attitudes, particularly in Europe. The key markets for products are America, where consumer resistance is relatively low, and Asia, where demand is likely to be driven by population growth and high rates of malnutrition.

The designed for me category is part of the longer-term future. Research and development into truly personalised food and drinks based on an individual’s genetic makeup is still in its infancy.
Final thoughts
Final thoughts

Does the desire for more personalised and tailored solutions mean the death of the mass health food market?

We are unlikely to see the complete demise of mass market health foods, but a greater understanding of nutrition and its role in managing personal health risks will change consumer expectations of food and drink manufacturers. Mass-market products will need to work harder to appeal to a more fragmented market where “my needs” are all-important.

Can food and drink manufacturers become credible custodians of health?

As acceptance of the link between physical, mental and emotional health and nutrition grows, people are going to need help to navigate their way through the maize of information and advice.

There is a clear gap in the market for trusted advice; and the key to this will be in the development of partnerships – with both consumers and other organisations, in order to establish credibility.

Will healthy living be defined by healthy eating alone?

Good nutrition is part of a broader strategy to manage health and wellbeing. As personal responsibility for health increases, consumers will look for ways to maximise the benefits of eating the right foods. Keeping the mind and body active will become equally important – particularly in the light of demographic change.

The challenge for food and drink manufacturers is finding ways to develop broader health and wellness programmes that fit with their product portfolios.
Final thoughts

Will sustainability and health issues converge?

Sustainability and human health tend to be discussed in isolation – or as part of a general debate on the effects of pollution and climate change.

However, as the pressure on food and energy resources grows, bringing the two issues together will become a key focus – and may lead to a fundamental review of our agricultural policies. We will see a convergence on a range of issues, but not necessarily all.

Cultivating crops that are not only hardy (grow in arid areas), environmentally friendly (use fewer resources and leave the minimal carbon footprint), but are also nutrient-rich and have a positive impact on health (for example, iron-rich pearl barley millet currently being developed in India) could be the future of farming and food production.

Will success come from providing products that are “better for you” or “good for you”?

It’s simply not enough for products to claim that they are “better for you”. As a bare minimum, food and drink needs to be both healthy and tasty.

The most commercially successful companies will be those offering products and services with multiple benefits.

The future lies in solutions that are “good for you”. They must be healthy, tasty, experiential and have tangible benefits that prove that they work.