New product development for functional foods
Focusing on mega-trends to increase consumer acceptance

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ABSTRACT: The functional food and beverage market offers substantial new product opportunities for food, beverage and pharmaceutical companies. Although the prevalence of functional foods and beverages has increased over the past number of years, product failure rates remain high. Today the process of developing new ingredients and products starts with the consumer. Generating consumer insights aids in the development of in-depth knowledge of the underlying needs and values of the consumer which is key to maximising consumer acceptance. Companies that wish to increase their likelihood of NPD success need to examine current mega-trends and sub-trends - translated into consumer insights - to guide the complex and risky process of developing new products.

INTRODUCTION
European market mega-trends are currently driven by health and wellness, increased quality of life and convenience [1]. Such trends have motivated large-scale investment from multi-national food, beverage and pharmaceutical companies in new product development (NPD) of foods and beverages which can target consumers' needs. For this reason, functional foods have become the cornerstone of food innovation in the past number of years. Within the literature there is general acceptance that a functional food or beverage is a product which offers a benefit or multi-benefits to consumers over and above that of basic nutrition [2]. Globally, regulation and legislation of functional foods and beverages is country specific and these foods are currently regulated through existing food legislation. However, variations to the functional food and beverages definition are numerous [3, 4]. The wide variety of definitions related to the term functional food has made determination of market value and market size difficult. Recorded growth rate within the functional food industry have increased year on year, while reported annual growth rates estimates have varied between 8 and 14 percent [5]. However, the high reported failure rates for new international functional foods suggest a failure to understand issues affecting consumer acceptance. An orientation towards consumer insights and effective knowledge management may prove a viable method for increasing the success rates of novel functional products. The aim of this article is to assess how the current mega-trends within the functional food industry can be used to drive the NPD process in a more market-oriented way, so as to increase consumer acceptance of novel functional foods and, therefore, increase the likelihood of product success.

GROWTH WITHIN THE FUNCTIONAL FOOD INDUSTRY
The global sales of nutraceuticals, including fortified and functional foods, fortified and functional beverages, and vitamins and supplements amounted to US$236 billion in 2009 [6]. Sales of fortified and functional foods and beverages were nearly 2.5 times larger than those of vitamins and dietary supplements for the same time period. The market for functional foods varies greatly across regions. Japan is the market leader for functional foods and beverages, followed by North America and then Europe. A Euromonitor study segmented the functional food and beverage industry into the following categories: beauty, energy, heart-health and other [7]. Gut health and heart health experienced the most significant growth from 2002 to 2007 and were the two most dominant sectors globally in 2007. A 50 percent increase in new product launches for the gut health market was recorded between 2004 and 2009 [8]. Dairy-based products represented over 55 percent of all new products and one third of these products were launched in Europe [19]. The most recent figures available categorised the consumer health market into four sections: over-the-counter (OTC) medicines, vitamins and dietary supplements, weight management and sports nutrition [10].

FOCUSBING NPD THROUGH CURRENT CONSUMER INSIGHTS AND MEGA-TRENDS
Although mega-trends identified vary over time, the trends of health and wellness, quality of life, and convenience have remained central themes in all mega-trends identified in the literature [11-13]. Bleiel [2010] notes ten mega-trends that are relevant for the functional food industry of 2011 and onwards [14] (Table 1). The complexity dimension in trends 1-4 in Table 1 refers to segments of consumers with specific demographic profiles who increasingly think, and behave, in a variety of ways. Other additional mega-trends such as ‘smart-treats’ and ‘sensitivity or allergen training’ have been identified in a variety of studies [15-17].

The increase in life expectancy has led to an increase in the number of elderly consumers with a desire for an improved quality of life [18]. Such individuals born in the “baby-boomer” period represent the new fifties generation. They have increased discretionary income and are more active, and more aware, of the link between diet and health than their predecessors were. However, this generation also faces major lifestyle problems that are synonymous with the modern diet such as obesity, cardiovascular disease and...
diabetes (19). The costs of treating ailments and diseases at old age are high, and represent a considerable burden, not only to state healthcare systems, but also to consumers. This has resulted in the implementation of programmes that educate younger generations on disease prevention and advise older generations on steps towards a healthier lifestyle (20). New products that will attract this target group will offer convenient packaging, that is, easy to open or re-seal, enhanced and amplified flavours and convenient portion sizes. Products that offer increased health protection through fortification are also appealing to these consumers. However, age complexity does not exclusively refer to the fifties generation. Younger generations have higher autonomous spending power than before (21). The offspring of the Baby Boomers have grown up with an increased degree of affluence than generations before them. In many cases, this generation experienced both parents working outside the home which represented increased disposable income within the home and an increased need for products which offered convenient nutrition (22). These younger consumers are more self-sufficient, mature and brand aware. Packaging is a key factor impacting on food acceptance for this age group. Individual portion sizes and quirky designs which allow these consumers to express their individual personality have motivated consumer interest. As the traditional family unit now has multiple variations, gender roles become less defined than before in relation to the purchase and consumption of foods. As life-stage trends change, and as more females work outside of the home, males contribute more to household grocery shops and preparation of meals and are more interested in healthy foods to improve overall nutrition and manage weight (23). To help with life-stage complexity and longer life trends, companies are starting to think about universal design, that is aesthetic packaging which appeals to both young and old consumers, of both genders. Nutritious and ready-to-eat (RTE) meals that can be prepared quickly and foods and beverages that offer health and increased resistance to common ailments will appeal to consumers. Income complexity is a mega-trend which reflects consumer needs for simplicity in everyday basic products. Increased prices should be reflected through additional value that is perceived by the consumer. Products which fail to offer either simplicity, reflected by a lower price, or additional value in a premium priced product, will be overlooked by the consumer (24). Consumers are more aware of their own personal preferences and are more willing to pay a premium price for products which they perceive to target them specifically. Individual portioned products and smaller package sizes all stem from the Individualism mega-trend. The concepts of ethical consumption, sustainability, eco-friendly and organic have all been embraced by the modern consumer and are drawn together under the mega-trend of connectivity. The comfort mega-trend illustrates consumers’ needs for foods and beverages which make them feel good. Cosmeceuticals or nutricosmetics is a category which is growing as a sub category within the functional food market. Retail sales of beauty from within foods, drinks and supplements reached US$4.1 billion in 2009. Japan and China represented the most developed markets in 2009 while the category remained in its infancy in key markets such as the United States and Western Europe (25). There has also been a noted shift in the marketing strategies of products traditionally perceived as indulgent. A shift in repositioning some indulgent products to fit into the broad scope of the health and wellness market has been seen across a variety of product categories. For example, the marketing of the benefit of anti-oxidants within dark chocolate. However, it remains to be seen whether indulgent products will become an accepted, credible carrier for functional benefits or whether the nutritional composition of indulgent food might just become healthier.

KEY AREAS OF FOCUS FOR NEW FUNCTIONAL FOODS AND BEVERAGES

Appealing to consumer trends, as identified above, can lead the NPD process and increase the likelihood of consumer acceptance of new functional foods (26). However, some functional benefits increase consumer motivation to purchase more than others. New products that emphasised a benefit related to gut health, heart health, immunity or weight management were more likely to be accepted by consumers over the past number of years due to highly visible advertising campaigns associated with the potential benefits of these products. Categories experiencing significant investment are safety and sports nutrition. In addition, the...
importance of packaging has increased as multi-national companies attempt to appeal to consumers and create a point of differentiation on supermarket shelves. In spite of rising obesity rates in many countries, slimming products suffered a setback in retail sales from 2008 to 2009 due to increased regulation and the rise of programmes and campaigns that encouraged increased exercise and consumption of healthy foods, rather than increased spending on weight-loss products (27). However, within the weight loss market, products positioned on a satiety platform increased in sales. New products which offered consumers enhanced satiety, rather than reduced levels of ingredients, appealed more to consumers and complemented very prominent health messages and health campaigns. A number of multi-national players active in the weight management market are beginning to invest in the satiety platform, particularly using ingredients such as fibres and proteins. Multinational companies Solaia and Fontana are two examples of companies that have invested in products that enhance satiety through the functional benefits of increased protein. In addition to the use of protein for weight management, it has also become a central focus point for the sports nutrition market, worth an estimated US$5 billion globally in 2009. The European sports nutrition market was worth approximately US$713.6 million in 2009, second only to the North American market which was valued at US$3.2 billion (28). This market has benefited from the implementation of campaigns that promote a healthy diet through an active lifestyle such as The World Health Organisation’s “Move for Health” and the EU’s “Lifelong Learning Programme”. Traditionally a market that catered for a very niche group of mainly male top-athletes, this market has expanded to include products for all activity levels and both genders. Packaging has come to the fore in many markets as consumers interact more with products prior to purchase. As packaging is the first medium the consumers make contact with, labelling, aesthetic aspects of packages and safety mechanisms have become key focal points within the functional food industry (29). As consumers’ awareness of the link between functional ingredients and health benefits increases, more attention will focus on nutritional information and information substantiating claims and health messages on product packaging. Simple packaging, with clear and effective messages, has been found to attract more consumer attention than complex packaging. A number of studies have concluded that as a result of continued advertising and combined marketing schemes, mainly from processors of finished goods such as Danone, the level of consumer awareness of different types of probiotics has increased significantly since 2005 (30). In addition, consumers are demanding more socially and environmentally responsible production; therefore, sustainable green packaging has become an important source of competitive advantage for firms and a method of differentiating products on supermarket shelves.

CONCLUSION

Constant interaction with the consumer is essential for monitoring evolving and new consumer trends. A thorough understanding of the trends which shape markets is essential for a more market-oriented approach to NPD. An in-depth knowledge of the target market will aid companies in uncovering latent and unmet needs within consumer groups and therefore aid in overall consumer acceptance of novel functional food concepts. Over the next ten years there will be continual developments with regard to the mega-trends as trend cycles are emerging more rapidly. New products currently being launched onto the marketplace represent new niche areas, such as cosmeceuticals/nutraceuticals, and expanded niche areas, such as the sports nutrition market. These global developments provide a huge opportunity to add value to current products and also to enter the market with new health propositions. Current trends evident in the functional food market have indicated that consumers are more willing to purchase and consume foods and beverages which can provide an increased health benefit. Furthermore, the more convenient the preparation/consumption of the product, the more attractive the product is to the consumer. However, key to success is ensuring consumer acceptance of these novel products and propositions. A thorough understanding of both the consumer insights and megatrends shaping society, and the needs of the target market, are essential for successful NPD of foods and beverages for the functional food market.

REFERENCES AND NOTES

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NHU, New science technology, Harmonious culture, United service. We focus on nutritional healthy industry, commit ourselves to all kinds of vitamins products for clients. Through the improvement of nutrition fortifier and food additives, we strengthen people’s physique health, improve quality of life and share happy lives.

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- Vitamin AD3 series
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- Lutein series
- Vitamin H series (Biotin)