

Market and marketing of functional food in Europe

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Abstract

In the paper an overview is given about the market situation of Functional Food in Europe. The global market of Functional Food is estimated up to 33 billion US\$, the respective market estimations for Europe exceed 2 billion US\$, representing less than 1% of the European food market. Functional dairy products are the key product sector accounting for sales of around 1.35 billion US\$ in 1999 in Europe. Mostly multinational food companies as well as international suppliers profit from the market growth of Functional Food. A limited number of small and medium-sized companies is active in market niches or offer “me-too” products. Specific efforts in nutritional research, product development and marketing are necessary to realise long-lasting market success of Functional Food products. Therefore the market is characterised by a high rate of product failures. General success factors for the marketing of food (like tasty products, convenience, variety) play a crucial role in Functional Food as well.

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1. Introduction

Food industry companies have rather high expectations in food products that meet the consumers' demand for a healthy life style. In this context Functional Food play a specific role. These foods are not intended only to satisfy hunger and provide humans with necessary nutrients, but also to prevent nutrition-related diseases and increase physical and mental well-being of consumers. However, no clear definition has been developed for Functional Food so far (Menrad et al., 2000). Despite the existing regulatory uncertainties, Functional Food products have been launched in Europe since the mid 90s. In the following an overview about the market situation of Functional Food as well as marketing-related aspects is given, focussing mainly on Europe.

2. Markets of functional food

Due to the differing definitions there are specific difficulties to analyse the development of the Functional Food market, resulting in strongly varying estimations

concerning the market volume of such products. Based on a definition of Functional Food by which ingredients with an additional health-value have been added to foods (and this is announced to the consumers), the global market of Functional Food is estimated to at least 33 billion US\$ (Hilliam, 2000c). The most important and dynamic market represents the USA with an estimated market share of more than 50%. In the USA, the market is differentiated in Functional Food with specific health claims achieving a turnover of around 0.5 billion US\$ and Functional Food without claims with an annual turnover of at least 15 billion US\$ (Hufnagel, 2000). In total, Functional Food have a market share of around 2% in the US food market (Anonymous, 2000a).

Another important market is Japan, where the first products focussing on specific health targets have been marketed. In this context, Yakult Honsha (founded in 1955) plays a significant role by developing products based on the probiotic lactic acid bacteria *Lactobacillus casei Shirota* which are sold as fermented milk drink in 65 ml bottles. In 1984, the concept of Functional Food was first promoted by Japanese scientists studying the relationships between nutrition, sensory satisfaction, fortification and modulation of physiological systems (Hosoya, 1998). In 1991, the Ministry of Health introduced rules for approval of a specific health-related food category called FOSHU (“food for specified health

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uses”) which included the establishment of specific health claims for this type of food. In February 2000, the total number of approvals under the FOSHU label reached 174 with an estimated market value of around 2 billion US\$ (Heasman & Mellentin, 2001). In total more than 1700 Functional Food products have been launched in Japan between 1988 and 1998 (Heasman & Mellentin, 2001) with an estimated turnover of around 14 billion US\$ in 1999 (Hilliam, 2000c).

According to the available estimations, the market of Functional Food products which make specific health claims on the packaging or in the advertising exceeds the volume of 2 billion US\$ in Europe. In case a broader definition is used, it is estimated that the European Functional Food market has a monetary market volume of 4–8 billion US\$ (Hilliam, 2000c). This means that in Europe the current market share of Functional Food is below 1% of the total food and drinks market. Within Europe Germany, France, the United Kingdom and the Netherlands represent the most important countries within the Functional Food market. In general, the interest of consumers in Functional Food in the Central and Northern European countries is higher than in Mediterranean countries. There are no exact figures available measuring the monetary market volume of Functional Food in Germany in 2000. Based on the available information in the most important product categories it can be assumed that the Functional Food market in Germany exceeds 600 million US\$. This still represents a market share of below 1% of the total food and drinks market in this country.

Functional Food products are not homogeneously scattered over all segments of the food and drinks market. This can be illustrated by analysing the distribution of newly launched products in the market. According to the data of the Worldwide Innovations Network of the market research institute Datamonitor (Anonymous, 2001), 305 products have been launched in the Functional Food segment in Germany in the years

1999 and 2000 (Fig. 1). This represents 19% of all innovations during this period. Functional products have been mainly launched in the softdrinks, confectionery, dairy, bakery and babyfood market, while all other product segments contribute to 8% to Functional Food innovations compared to 38% of all innovations in the total food and drinks market in Germany.

This concentration on specific product segments is even higher when analysing the current sales values of specific Functional Food products in Europe. Presently, the European market of Functional Food is dominated by gut health products, in particular probiotics. Among those dairy products are the key product sector accounting for sales of around 1.35 billion US\$ in 1999 (Hilliam, 2000c). Germany, France, the United Kingdom and the Netherlands account for around two thirds of all sales of functional dairy products in Europe (Table 1).

Functional dairy products have shown an impressive growth during the recent six years, bringing the market volume in Germany from around 5 million US\$ in 1995 to 419 million US\$ in 2000, of which 301 million US\$ account for pro-, pre-biotic and other functional yoghurts and around 118 million US\$ for functional drinks (Fig. 2). In the recent three years the latter achieve higher growth rates than functional yoghurts in Germany—a phenomenon which can be registered in

Table 1
Functional dairy products in Europe by country 1999 (Source: Hilliam, 2000c)

Country	Value (million US\$)	Share (%)
Germany	283	21
France	240	18
United Kingdom	222	16
The Netherlands	150	11
Other countries	450	34
Total Europe	1345	100

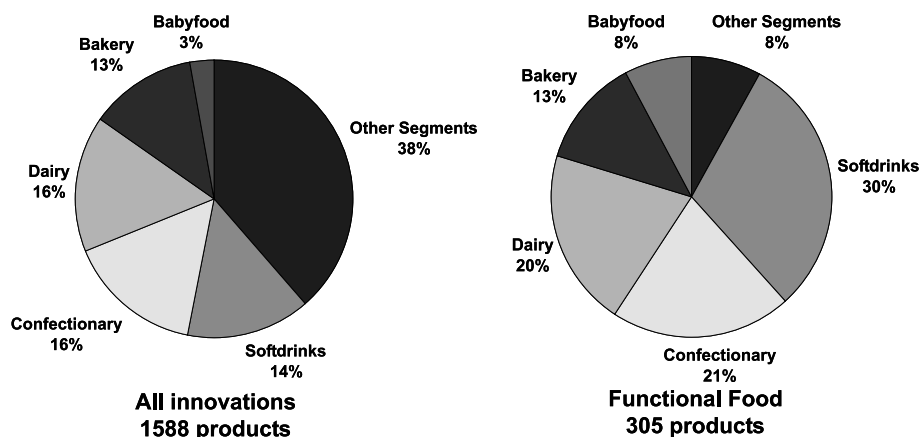


Fig. 1. Innovations in the food and drinks market in Germany (Source: Anonymous, 2001).

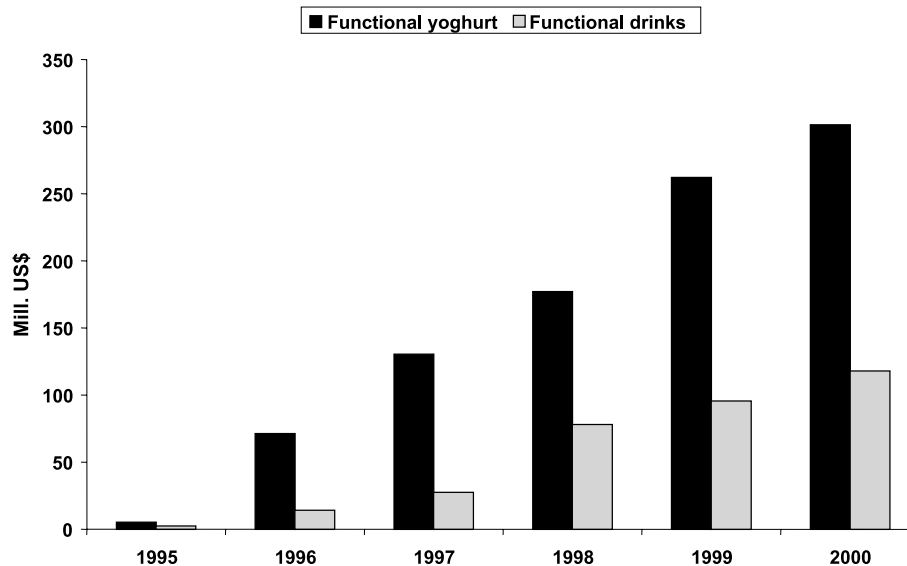


Fig. 2. Market development of functional dairy products in Germany (Sources: Biester, 2001; Hilliam, 2000a; Menrad, 2000).

other countries (e.g. France, Switzerland) as well (Hilliam, 2000a; Menrad et al., 2000). Another important aspect of the market development of functional dairy products in Germany is the fastly growing relevance of private label brands in recent years. In particular the retail company Aldi has gained continuously market shares (to around 26% of the monetary market volume of functional yoghurts in 2000) (Biester, 2001), which was accompanied by decreasing average product prices for functional yoghurts.

Another important product category within the Functional Food segment are non-alcoholic beverages fortified with the vitamins A, C and E or other functional ingredients. Although there is a relatively high number of products available in this segment, the market still is rather small and fragmented in most European countries. Germany is the only country in Europe with a sizeable functional drinks market, mainly due to the success of ACE drinks in this country. In 1999 these beverages reached a market volume of 89 million US\$ up from sales of around 15 million US\$ in 1996 (Hilliam, 2000b). In 2000 more than 117 millionliter of vitaminised non-alcoholic beverages have been consumed in Germany (Von Pilar, 2001), which equals to around 1% of the total consumption of these beverages. Most of the leading fruit juice companies have products in the functional drink market in Germany particularly ACE drinks.

In Europe other relevant product categories in the Functional Food market represent confectioneries and chewing gums for dental hygiene, bakery products and breakfast cereals as well as cholesterol-lowering spreads. In the first two product segments a big variety of products has been introduced in the market in recent years (Biester, 2001; Hilliam, 2000a; Menrad, 2000;

Menrad et al., 2000), without achieving considerable sales values. In contrast to these segments, it can be assumed that cholesterol-lowering spreads will gain increasing relevance in the coming years due to the market introduction of e.g. a functional variety of Becel margarine of Unilever (named “Becel proactiv”), containing phytosterol esters which are supposed to lower the cholesterol level. A product with similar characteristics named “Benecol” has already been launched by the Finnish company Raisio in some Scandinavian countries in the mid 90s (Menrad, 2000). In the babyfood market in particular hypoallergenic babyfood show constant growth in recent years in Germany (Hüsing, Menrad, Menrad, & Scheef, 1999). In addition, several pro- and pre-biotic products have been launched in the babyfood market (Hüsing et al., 1999; Menrad et al., 2000).

According to the available future market estimations, it can be assumed that Functional Food will increase its market volume in the coming years considerably. Most market estimations assume that 5% of the food market represent the growth limit for Functional Food in Europe in the coming 10 years. In this sense Functional Food will not develop to a mass market in future, but represents a multi-niche market with a high number of rather limited product segments and very few high volume product categories.

3. Suppliers of functional food

When analysing the supply structure of Functional Food, the difficulty emerges that the Functional Food “industry” is almost as fragmented and difficult to define as the market. Taking into account these difficulties,

six main types of actors in the commercial Functional Food segment can be identified in the EU and in the German market:

- Multinational food companies with a broad product range.
- Pharmaceutical and/or dietary products producing companies.
- National “category leaders”.
- Small and medium-sized companies (SMEs) of the food industry.
- Retail companies.
- Supplier of “functional ingredients”.

Since the mid 90s several multinational food companies (like e.g. Nestlé, Danone, Unilever, Kellogg, Quaker Oats) have introduced Functional Food products into the EU and German market. This relates in particular to the market of functional milk products which was initiated by the market introduction of Nestlé’s LC1 yoghurt in 1995 followed by the Actimel-line of Danone. One major impetus for the marketing of functional milk products by European food companies was the market introduction of one of the leading Japanese probiotic milk products named “Yakult” in 1994 in the European market (Menrad, 2000). These three companies still have a leading position in the functional dairy market in Europe. Another example represents Unilever which has introduced a specific functional variety of Becel-margarine (named “Becel proactiv”) in the EU in 2000. This margarine is supposed to lower the cholesterol level in the blood.

These multinational food companies with established and well-known brands have the resources necessary for product development and marketing of Functional Food. While in general the total costs from the product idea to market introduction of new food products are estimated to several million US\$ (Weindlmaier, 2000), the development and marketing costs of Functional Food products may exceed this level by far. According to expert estimations the costs for product development and market introduction of Nestlé’s LC1 yoghurt and the Becel proactiv margarine of Unilever exceeded 50 million US\$ each. Most of the multinational food companies offering Functional Food products have their own R&D departments and specific in-house resources and expertise in nutritional and food technology research. Some of these companies spend up to 2% of their turnover for R&D activities (Weindlmaier, 2000). In addition to product development the proof of efficacy of Functional Food products in clinical studies requires some time (several months up to more than one year) and relatively high financial investments.

A second type of Functional Food producers represent pharmaceutical or dietary products producing companies like e.g. Novartis Consumer Health, Glaxo

SmithKline, Johnson & Johnson or Abbott Laboratories. In particular, Novartis Consumer Health has launched a series of Functional Food products including biscuits, cereal, cereal bars and beverages in different European countries under the “AVIVA” brand in 1999. However, due to lower sales than expected, Novartis withdrew the AVIVA products from most markets after one year (Biester, 2001). One important motivation for pharmaceutical companies to invest in Functional Food are the shorter development times and lower product development costs compared to pharmaceutical products (Menrad, 2000). In addition, pharmaceutical companies have intensive experience in organising clinical trials to substantiate health claims of a specific product.

A third group of Functional Food producers are companies specialised in a particular product category which mostly belong to the market leaders on a national level. Examples for this type of companies represent Molkerei Alois Müller (with its functional “ProCult” dairy products), Ehrmann (“DailyFit” dairy products), Bauer (with several probiotic dairy products), Eckes (ACE drinks) or Becker Fruchtsäfte (ACE fruit juice) in Germany. In most countries of the EU as well as in Switzerland, in particular in the dairy industry the leading companies on a national level are often among the producers of pro- or pre-biotic dairy products (Anonymous, 2000b; Menrad et al., 2000).

There is a limited number of small and medium-sized food companies (SMEs) active in the Functional Food market as well. These companies mostly produce functional products for market niches or offer “me-too” products following the pioneering products of the multinational companies (Hüsing et al., 1999). Often these products can “survive” only for a rather short time period (e.g. up to two years). In general, SMEs lack the know-how and resources for own intensive R&D activities and cannot afford to spend high sums in specific information or advertising activities necessary to open a specific segment of the Functional Food market as pioneering company. The same relates to long-lasting clinical trials (e.g. intervention studies with high number of patients) which may be necessary to show efficacy of a specific “functional ingredient” (Menrad et al., 2000).

Food retail companies are increasingly starting to introduce private label brands especially in the relatively “mature” markets of functional dairy products. In Germany this relates in particular to food discounters like Aldi, Lidl and Penny which launched pro- and pre-biotic dairy products in recent years. It is estimated that Aldi which launched its probiotic dairy brand “Bi’AC” in 1997 will generate around 78 million US\$ turnover with probiotic yoghurt (around 26% of the probiotic yoghurt market in Germany) (Biester, 2001). In other European countries (e.g. Switzerland) food retail brands play an important role in the functional dairy segment as well (Menrad et al., 2000).

Like in the food industry in general, suppliers of food ingredients play a significant role as innovation source in the Functional Food segment as well. Nearly all main food ingredient producers have introduced “functional ingredients” or tried to acquire companies specialised in this field in recent years. This relates e.g. to the worldwide most important producers of vitamins (e.g. Roche Vitamins, BASF AG) which introduced specific “bio-active” ingredients in the market. Other examples are companies like SKW Trostberg (now merged with Degussa AG), DSM or Eridania Beghin-Say which have created specific business units for functional ingredients. An important role on the market of prebiotic ingredients play subsidiaries of major European sugar producers (like e.g. the Südzucker subsidiary Orafiti). In addition, a relatively high number of small or specialised producers are offering functional ingredients as well (e.g. in the probiotic field). So far only a limited number of biotechnology companies has specialised on this field despite the expected growth perspectives (Menrad, 2000). In general, the suppliers of functional ingredients try to proof efficacy of a specific substance and sell it to a wide range of food industry companies, thereby creating specific formulations. In this sense, innovative suppliers of food ingredients are of high relevance, in particular for product innovations of SME food companies.

4. Marketing of Functional Food

The markets of Functional Food, excluding Functional dairy products, have developed very fragmented in Europe so far. One indication in this respect is the fact that most “Functional” brands have been launched in a limited number of countries in recent years. In addition, multinational food industry companies as well as other companies mostly have introduced rather single products than fully developed umbrella brands in the Functional Food market.

Like in the food market in general the Functional Food product segment is characterised by a high rate of product failures. One prominent example in this respect represents the AVIVA product range of Novartis Consumer Health which was introduced in 1999 in several European countries and withdrawn within around one year because they did not attain the sales expectations. Expert estimations assume that around three of four newly launched food products are withdrawn from the food market within the first two years (Mehler, 1998). Despite the lack of exact data for Functional Food in Europe it can be assumed that the product failure rates in this product segment most probably will exceed the figures in the total food market, due to the specific challenges in the development and marketing of Functional Food.

Several mid- and long-term developments in society as well as sociodemographic trends are in favour of Functional Food, so that it can be assumed that Functional Food represent a sustainable trend in the food market. These developments include the change of the scientific paradigm in nutritional sciences in order to analyse the causal relationships between nutritional factors and the occurrence and prevention of specific diseases, the enhanced interest of consumers in health and nutrition aspects as well the “ageing” of the society. In addition, various actor groups with relevance for innovations in the food industry favour Functional Food. This relates in particular for the food industry and food retailers, partly also for food scientists and consumer groups.

The future market development is influenced by the degree of familiarity and acceptance of Functional Food as well. According to surveys in different European countries consumers often do not know the term “Functional Food” or similar wordings, but show a rather high agreement to the concept. In the United Kingdom, France and Germany, up to 75% of the consumers have not heard the term “Functional Food”, but more than 50% of them agree to fortify functional ingredients in specific food products (Hilliam, 1999). Thereby the acceptance to a specific functional ingredient is linked to the consumers knowledge of the health effects of specific ingredients. Therefore, functional ingredients which are in the mind of consumers for a relatively long period of time (e.g. vitamins, fibre, minerals, like calcium, iron) achieve considerably higher rates of consumer acceptance than ingredients which are used for a short period of time (Fig. 3) (e.g. flavonoid, carotinoids, Omega-3 fatty acids). In the latter cases consumers often do not know the health benefits of the specific groups of ingredients and therefore are not able to assess the health effects (Menrad, 2000). In this sense, the health image of a Functional Food product or a specific ingredient represents a necessary prerequisite but cannot be regarded as being sufficient for a possible market success. In addition, consumers are not willing to change their daily lifestyle or eating patterns for the consumption of a specific Functional Food product (Hübel, Nowicki, & Weigel, 2001).

Despite the general sociodemographic and behavioural trends which are in favour of Functional Food there are specific challenges in the development and marketing of such products. While in general the total costs from the product idea to market introduction of new food products are estimated up to 1 or 2 million US\$ (Weindlmaier, 2000), the development and marketing costs of Functional Food products may exceed this level by far. According to experts estimations the costs of product development and market introduction of Nestlé’s LC1 yoghurt and Becel proactiv spread of Unilever exceeded 50 million US\$ each. In addition to resources and know-how in nutritional and food

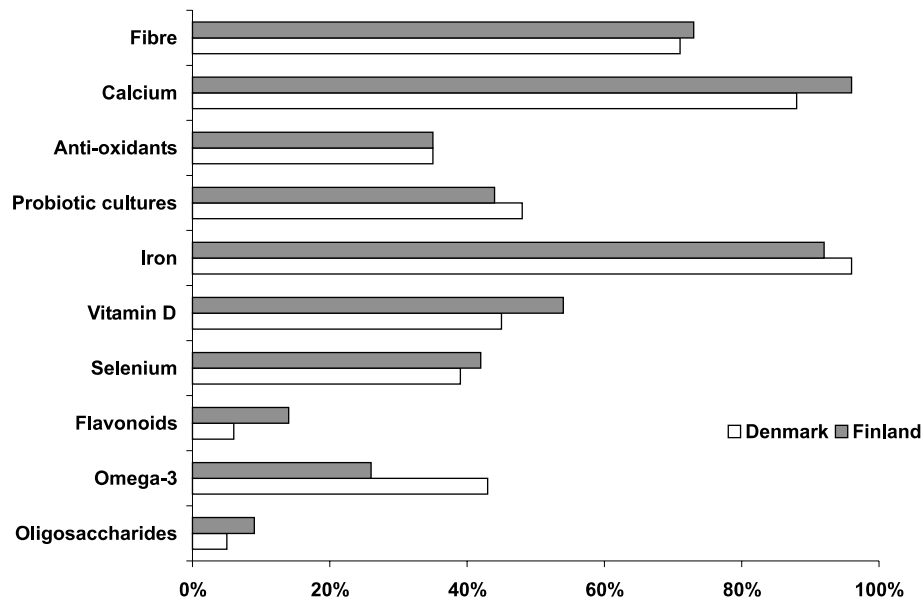


Fig. 3. Awareness of consumers on health effects of various functional ingredients (Source: Bech-Larsen, Grunert, & Poulsen, 2001).

technology research, the proof of efficacy of Functional Food products requires knowledge in the medical field as well. To fulfill the strict requirements of scientific verification of the efficacy of Functional Food, statistically validated data from different model systems, from mechanistic examinations on the cellular and molecular level, from retrospective and prospective epidemiological studies as well as from intervention studies on humans have to be presented (Bellisle et al., 1998). So far only few of the components of Functional Food have been examined on all of these levels (Menrad et al., 2000).

Due to the limited consumers' knowledge and awareness of the health effects of newly developed functional ingredients, there are strong needs for specific information and communication activities to consumers in this respect. This relates in particular to pioneering companies opening a specific market segment, for which targeted information activities to consumers and opinion leaders (like e.g. medical doctors, nutritional advisers) are regarded as crucial success factor for the marketing of Functional Food (Menrad et al., 2000). Examples of successful information campaigns indicate that the message of the health effect of a specific product should be transferred relatively simple and easily to understand to the consumer. In addition, specialist terminology and medical details should be avoided in such campaigns.

Another specific challenge represents the regulatory situation of Functional Food in Europe. From a legal point of view, Functional Food is positioned in a transitional zone between food and pharmaceuticals. In almost all European countries as well as the European Union, these areas are traditionally regulated by sepa-

rate institutions and are subject to different regulation regimes, so that a kind of "grey zone" emerges with a high level of uncertainty. The classification of specific Functional Food products to one of the two categories is of high practical relevance since the factual prerequisites, authorities and procedures related to market entrance differ significantly between the two areas. Definition problems mainly exist for products with functions aiming to prevent nutrition-related diseases and/or to support health (so-called "health claims"). In the EU and related national legislation it is currently forbidden to use disease-related aspects in consumer information or product advertisement for Functional Food. Therefore, industry interest groups try to extend the type of claims allowed for Functional Food.

Another important success factor for the marketing of Functional Food are the price premia for this type of food in comparison to "conventional" food products. Examples of recently launched Functional Food products indicate that consumers are only willing to accept limited price premia for such products. In general, price premia of 30–50% are observed in high-volume Functional Food segments like functional dairy products or ACE drinks (Menrad, 2000; Menrad et al., 2000). It seems most likely that higher price premia are accepted by consumers only for such Functional Food products, which have a proven health effect related to a disease which directly influences consumers in the near future. However, such products have been rarely launched in the European market so far. In this sense, relatively high price premia can be regarded as one reason for the limited market success of several Functional Food products in recent years in Europe.

Consumer surveys and other market analysis studies in the USA and Europe indicate that the general success factors for the marketing of food are valid for Functional Food as well (Bech-Larsen et al., 2001; Childs, 1997; Potratz & Wildner, 2000; Poulsen, 1999). This relates in particular to tasty products, convenience attributes, a certain product variety as well as different packaging volumes. The “functional” component of a Functional Food product is mainly regarded as an added value but hardly determines the choice of the products by itself. In this sense concepts for Functional Food products should be based on food products with a positive health image and avoid a distinct medical or clinical perspective.

For the market success of Functional Food it is additionally required to serve high-volume distribution channels like e.g. supermarkets, general retail stores or discount retailers. In general, these are the most important distribution channels for Functional Food in most European countries. Therefore consumers expect Functional Food in such retail outlets and most of them are not willing to go in specific shops just to buy Functional Food products. Such a strategy does not exclude the possibility to serve specific distribution channels (like e.g. pharmacies, health food shops) either with the same or a modified product. In addition, it should be taken into account that Functional Food products are available for impulse buyings of consumers (e.g. in specific convenience-oriented shops) as well.

5. Conclusions

Functional Food offer interesting growth opportunities for the food industry but specific efforts of different actor groups (e.g. scientists, food ingredient suppliers, food industry companies, food retailers) are necessary to realise these opportunities in future. So far, multinational food industry companies as well as internationally acting food ingredient suppliers are best positioned to overcome the specific challenges in the development and marketing of Functional Food. In general, these companies have the necessary R&D resources and know-how, the human and financial capacities as well as the marketing power to open new product segments as pioneering companies. Pharmaceutical companies often underestimate the specific characteristics of food markets and the needs of consumers in Europe, so that it can be expected that only single companies of this groups will move into the Functional Food market permanently.

There are only limited opportunities for small and medium-sized companies in the Functional Food market due to the specific challenges which have to be overcome in this segment. Potential future strategies for this group of companies are:

- Production and marketing of functional “me too” products in case the original product or functional ingredient is not protected by patents.
- Exploitation and development of functional ingredients which have been discovered in public research institutions.
- Development and marketing of specific functional niche products with the help of innovative suppliers since small and medium-sized companies are in general faster and more flexible than the multinationals.
- Production of functional private label brands.
- Development of functional ingredients in specialised biotech companies.

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