Leveraging growth in the emerging functional foods industry:
Trends and market opportunities
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August 2009
The heart of the matter

Opportunities in the dynamic, fast-growing functional foods market
Foods fortified with nutritional and disease-preventing qualities are invigorating the US food industry. Health-conscious consumers are driving the demand for products that aim to promote better health, increase longevity and prevent the onset of chronic diseases.

Known as “functional foods,” these products include essential nutrients that often go beyond the initial purpose of fostering normal growth and development. These supplements—often called nutraceuticals—are derived from natural foods and can be added to other foods to impart specific health benefits.

Advances in food and medical science as well as changing consumer demand and demographics are fueling growth in this market. Its significant potential is likely to attract further investment by food and food technology companies. Moreover, the industry is well-positioned to respond to emerging healthcare trends, including personalized medicine and greater incentives to reduce medical costs.

Careful consideration of the competitive landscape and consumer dynamics will help prospective investors filter attractive strategic opportunities from trends that may ultimately fizzle. In this report, we have created an initial guide to the functional foods arena. We have also identified potential areas of opportunity and consideration for companies seeking entry.

Any investment has potential challenges and risks. We aim here to help investors understand the dynamics of this market and, from that, build a realistic growth and investment strategy for functional foods.
An in-depth discussion

The competitive landscape, consumer trends and health science advances shaping the market
Food and beverage makers have long fortified their products with vitamins and other nutrients to enhance their health benefits. Advances in nutrition science and food manufacturing are now moving the industry from identifying and correcting nutritional deficiencies toward creating foods that promote optimal health and wellness as well as reduce the risk of chronic disease.

Many large multinationals, often in collaboration with specialized ingredient makers, are already established in the market. Yet smaller participants are successfully creating and defending niches in the market. From a sales perspective, soft drinks and dairy products are leading product categories; while if we look at the market by health benefit, energy drinks are the top category.

With between $20 billion and $30 billion in sales a year, functional foods comprise about 5 percent of the overall US food market. Recent estimates for sector growth range from 8.5 percent to as much as 20 percent per year, ahead of the overall industry, where growth is estimated at 1 percent to 4 percent per year.

Changing demographics, in particular the aging baby boomer population, are helping to set the foundation for future growth. Healthcare trends, including pharmaceutical investment and research into diseases and chronic conditions that are rapidly gaining greater significance, are a further source for potential growth. At the same time, inorganic growth to date has been largely driven by acquisitions, licensing and partnership agreements.
The first fortified food products resulted from public health endeavors. Vitamin B-enriched flour was introduced in the 1940s to combat pellagra; iodine-fortified salt substantially decreased incidences of goiter; and vitamin D-enriched milk virtually eliminated rickets.

More recent initiatives, however, are emerging wholly from the private sector.

In a movement that originated in Japan about 20 years ago, companies are creating and marketing “functional foods,” nutrient-rich products aimed at consumers who appreciate the role of diet in their health, and seek to prevent the onset of chronic disease through the adoption of specific behaviors.

Some examples of nutraceuticals in functional foods include probiotics (microorganisms that provide digestive benefits), omega-3 (fish oil) extracts, and phytonutrients (found in plants such as soybeans, blueberries or grapes).

Functional foods are used, distributed and regulated differently from medical foods and drugs. The primary distinction is that functional foods may be consumed freely as part of everyday life. Medical foods and drugs are used in specific cases to treat or manage a condition under medical supervision (see table).

### Figure 1. Comparing functional foods with medical foods and drugs

<table>
<thead>
<tr>
<th>Difference</th>
<th>Functional foods</th>
<th>Medical foods</th>
<th>Prescription drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses</td>
<td>Energy enhancement; weight management; bolster gut, bone or heart health; disease risk reduction; memory improvement</td>
<td>Dietary management of a disease or condition with distinctive nutritional requirements (e.g. difficulty swallowing, loss of appetite, nutrition repletion postsurgery)</td>
<td>Treatment of disease, symptom, or condition</td>
</tr>
<tr>
<td>Method of obtainment</td>
<td>No prescription or supervision needed; consumer selects</td>
<td>Used with medical supervision</td>
<td>Prescribed by health provider</td>
</tr>
<tr>
<td>Distribution channels</td>
<td>Supermarkets, drugstores, online, major retailers</td>
<td>Hospitals, pharmacies, drugstores, online</td>
<td>Pharmacies, hospitals</td>
</tr>
<tr>
<td>Regulatory body</td>
<td>No specific body, but is considered food and is therefore subject to FDA regulation</td>
<td>No additional FDA review/approval needed, but must abide by regulations concerning foods, e.g., labeling</td>
<td>FDA approval needed, a multiyear, multistage review process</td>
</tr>
<tr>
<td>(FDA regulates any specific health claims that might be made)</td>
<td>(FDA regulates any specific health claims that might be made)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount consumed</td>
<td>As desired</td>
<td>As needed</td>
<td>As prescribed</td>
</tr>
</tbody>
</table>

Sources: company reports, Nutraceutical World, The New York Times, US Food and Drug Administration, Institute of Food Technologists
Industry dynamics

The US functional foods market is estimated to be the largest in the world, representing between 35 and 50 percent of global sales. Asia-Pacific is the next biggest market. Together, the US and Asia-Pacific are estimated to account for approximately three-quarters of the current global market for functional foods.\(^5\)

Food and beverage companies are the primary force and the market is largely consolidated, with US companies playing a major role. Yet partnerships often factor into functional food production; companies enter into these agreements largely to share development costs and technical expertise.

Nutraceutical extraction can be relatively costly; research and development is often significant, and there can be specialized technology needs as well. The groundwork for a product may be conducted in-house, or it may be outsourced to specialized suppliers dedicated to food ingredient technology research and product development.

Figure 2. Functional food supply chain

- **Agricultural & biotech researchers**
  - Plant yield and hardiness, inputs
  - e.g., Monsanto, DuPont

- **Food and beverage companies**
  - R&D; manufacturing and packaging
  - e.g., Nestlé, PepsiCo, Kraft

- **Ingredient suppliers**
  - Food processing R&D;
  - synthesis and formulation
  - e.g., Cargill, ADM, Danisco

- **Retailers**
  - Distribution to consumer
  - e.g., Walmart, Safeway

- **End consumers of functional food**

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5  Scientia Advisors
Downturn may provide market entry opportunity to retailers

Private-label brands may be poised to gain traction in the functional foods market during the current recession. These brands tend to gain unit market share during recessionary times because of their appeal to price-sensitive consumers looking to pay less for comparable items. From 1990 to 1991, unit share for these brands increased from 17.6 percent to 20 percent, and from 2001 to 2003, from 20 percent to 21.8 percent. The trend appears to be holding in the current downturn. In 2008, sales of private-label food and other consumer products increased 10 percent, compared with 3 percent growth for branded products. It is likely the trend could extend to functional foods; some manufacturers, such as FACT Corporation, already provide functional foods through private-label retail channels.

Niche players remain active and innovative

The top 20 functional food companies are estimated to account for about 70 percent of the US market, with a small number of multinational companies comprising a significant share. Smaller players are nonetheless able to maintain a presence by creating niche markets; for example, Grupo Pascual produces milk drinks containing prebiotic fiber from chicory.

Key functional food players

<table>
<thead>
<tr>
<th>Player†</th>
<th>Key functional brands</th>
</tr>
</thead>
<tbody>
<tr>
<td>PepsiCo (1)</td>
<td>Quaker, Gatorade</td>
</tr>
<tr>
<td>Coca-Cola (2)</td>
<td>Vitamin Water, Odwalla</td>
</tr>
<tr>
<td>General Mills (3)</td>
<td>Cheerios, Yoplait</td>
</tr>
<tr>
<td>Kellogg (4)</td>
<td>Special K, Kashi</td>
</tr>
<tr>
<td>Kraft (8)</td>
<td>Capri Sun, Balance Bar</td>
</tr>
<tr>
<td>Nestlé (9)</td>
<td>Nesquik, PowerBar</td>
</tr>
<tr>
<td>Danone (11)</td>
<td>Activia, Essensis</td>
</tr>
<tr>
<td>Unilever (na†)</td>
<td>Slim-Fast, Blue Band</td>
</tr>
<tr>
<td>Yakult Honsha (na†)</td>
<td>Yakult 400, Jole</td>
</tr>
</tbody>
</table>

† Ranking according to US functional food sales in 2006. na = not available.


6 PLMA
7 The Wall Street Journal
Key categories and emerging products

Soft drinks and dairy dominate

Functional foods are categorized both by food and by health benefit. Soft drinks and dairy products constitute 60 percent of the market among foods. The soft drink category includes enhanced water, which has grown in popularity as consumers seek alternatives to carbonated beverages, perceived by some as high in sugar or artificial ingredients and therefore less healthy.

Dairy is gaining in popularity, driven in large part by innovations in yogurts. By now, enough consumers are likely aware of the helpful bacteria naturally present in yogurts, increasing receptiveness to the idea of probiotic and prebiotic yogurts. Moreover, consumers do not need to markedly change their behavior to reap the benefits associated with functional yogurts—a single yogurt portion may be sufficient. In contrast, phytosterol-infused margarines are meant to be consumed three times a day—a behavioral change that may be undesirable to many consumers.

Energy is the single largest segment by health benefit

Foods claiming to boost energy levels constitute 29 percent of the market categorized by benefit. These products tend to have attributes that the consumer can quickly feel, which has contributed significantly to their popularity.

Products in the gut, bone, and heart health categories comprise a sizable share of the market and have traditionally been purchased by older consumers. Other functional foods include products with claims to help manage weight, sharpen mental faculties, and improve infant health. These products tend to be sought by younger consumers, especially those with or expecting children.

Other potential areas of interest

Products for enhanced cognitive health, such as omega-3 fatty acids, are expected to be a $7 billion market by 2011, according to Packaged Facts. Other areas to watch are products for weight management, mood enhancement, and those that promote healthy, beautiful skin.

Figure 3. US functional food revenues ($B), by food category, 2002-2007

<table>
<thead>
<tr>
<th>Food Category</th>
<th>2002</th>
<th>2007</th>
<th>CAGR '02-'07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft drinks</td>
<td>$5.4</td>
<td>$9.6</td>
<td>12.3%</td>
</tr>
<tr>
<td>Dairy</td>
<td>4.6</td>
<td>6.8</td>
<td>8.1%</td>
</tr>
<tr>
<td>Bakery &amp; cereals</td>
<td>3.1</td>
<td>4.6</td>
<td>8.0%</td>
</tr>
<tr>
<td>Confectionery</td>
<td>1.7</td>
<td>2.3</td>
<td>6.7%</td>
</tr>
<tr>
<td>Savory snacks</td>
<td>0.5</td>
<td>0.5</td>
<td>1.5%</td>
</tr>
<tr>
<td>Other</td>
<td>2.8</td>
<td>3.4</td>
<td>3.6%</td>
</tr>
<tr>
<td>Total</td>
<td>$18.1</td>
<td>$27.2</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

Figure 4. US functional food revenues ($B), by benefit, 2002-2007

<table>
<thead>
<tr>
<th>Benefit</th>
<th>2002</th>
<th>2007</th>
<th>CAGR '02-'07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>$5.8</td>
<td>$7.9</td>
<td>6.2%</td>
</tr>
<tr>
<td>Heart health</td>
<td>3.6</td>
<td>5.0</td>
<td>6.9%</td>
</tr>
<tr>
<td>Bone health</td>
<td>2.8</td>
<td>3.7</td>
<td>5.3%</td>
</tr>
<tr>
<td>Gut health</td>
<td>0.4</td>
<td>0.7</td>
<td>15.8%</td>
</tr>
<tr>
<td>Other</td>
<td>5.5</td>
<td>9.9</td>
<td>12.5%</td>
</tr>
<tr>
<td>Total</td>
<td>$18.1</td>
<td>$27.2</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

† CAGR=compound annual growth rate

Sources: Nutrition Business Journal, BusinessWeek, Mergent, Euromonitor, Datamonitor, Dairy Council of California
Greater health awareness by consumers and the potential for premium pricing are helping to fuel growth in the functional foods market. Sustaining this growth will hinge on manufacturers’ ability to focus on food qualities, market effectively, and target the appropriate segments, ideally aligning with the wider public and consumer health and wellness agenda.

Functional foods marketing fundamentals

- Products with an easy-to-feel effect, such as an energy boost, are likely to be more successful (at least in the short term) than a product like omega-3 milk, which provides an important nutrient but fails to give consumers instant gratification.

- Innovative packaging can also differentiate products and enable premium pricing. Optimel Control, for one, uses “daily-dose” packaging, contributing to a significant premium over regular products.8

- Consumers need to grasp the health benefits associated with a given nutraceutical in order to appreciate its relevance and premium pricing. Manufacturers of functional foods need to consider what actions they can take to better educate potential customers and provide this level of understanding.

- Manufacturers must be able to target a niche, communicating a specific health benefit linked to a common ailment or incorporating multiple desirable qualities into a single product. Kraft, for example, introduced a shelf-stable probiotic nutrition bar—the first mass-distributed product of its kind—in 2008.9 The product appealed to consumers seeking the benefits of probiotics in a convenient form (without the need for refrigeration).

Public and private sector factors that support functional foods’ market growth

Public sector factors

Label legislation: In 1997, the FDA approved the first food-specific health claim under 1990’s Nutrition Labeling and Education Act. Subsequent legislation has simplified the approval process for health claims on functional food labels.

Disease prevention: The US government’s efforts to reduce healthcare costs by investing in disease prevention are raising consumer awareness of the link between diet and health. As a result, some consumers are switching to products they perceive to be healthier or more purposeful. The trend toward functional products can be seen in the carbonated soft drink market: whereas volume growth in the 1990s approximated 3 percent a year,10 volumes in each of the last three years have declined. In contrast, strong organic growth and M&A activity is holding in the energy-enhancing drinks segment.

Private sector factors

Emerging technologies in food processing are leading to new methods for stabilizing ingredients, optimizing texture, and improving product taste.

Premium pricing potential is attracting food and beverage companies to the market. Conventional foods face volatile margins as commodity prices fluctuate and competition intensifies. Margins on functional foods, on the other hand, tend to be consistently higher. Although these products typically require greater initial R&D and ingredient costs, price premiums may reach 30 percent or higher, depending on the product.11


8 Nutraceuticals World
9 Nutraceuticals World
10 Beverage Digest
11 World Bank
Healthcare trends and potential impact

The functional foods industry is well-suited to participate in emerging healthcare trends, including personalized medicine and the inexorable shift of more healthcare costs to consumers.

<table>
<thead>
<tr>
<th>Healthcare trend</th>
<th>Impact on functional foods</th>
<th>Key issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus increases on personalized medicine</td>
<td>Functional foods may be offered in more specific variations</td>
<td>To what degree can markets continue to fragment before niches become too small to be attractive?</td>
</tr>
<tr>
<td></td>
<td>As people gain greater appreciation of their unique disease risk profiles, they may increasingly seek foods that address their specific health concerns.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This demand, paired with food companies’ growing ability to finely segment products, is likely to lead to greater varieties of functional foods. For example, in recent years, the enhanced water market has grown faster than the overall bottled water market, partly because manufacturers have created dozens of varieties, each product offering a specific benefit.</td>
<td></td>
</tr>
<tr>
<td>Health costs are pushing employers to provide wellness incentives and/or shift costs</td>
<td>Greater financial incentives to consume functional foods are possible</td>
<td>What is the dollar value associated with preventing diseases? Will consumers become more attuned to the potential savings?</td>
</tr>
<tr>
<td>Some companies provide incentives...</td>
<td>Studies have demonstrated the effectiveness of wellness programs. Financial incentives such as gym discounts or reduced insurance co-pays help to motivate employees to manage their weight. In the future, companies could invest in financial incentives supporting the consumption of functional foods as a weight-management tool, which would drive industry growth.</td>
<td></td>
</tr>
<tr>
<td>...and others shift costs to employees</td>
<td>As the burden of health payments shifts to consumers, they may try to limit their exposure to co-pays and other costs. Consumption of functional foods may come to be seen as an alternative, affordable way for consumers to better manage health.</td>
<td></td>
</tr>
</tbody>
</table>

Sources: S&P; PwC Health Research Institute, The Wall Street Journal, Watson Wyatt
What this means for your business

A successful investment strategy involves filtering real opportunities from the flurry of trends
The functional foods sector is expected to continue to attract further investment and deals; there is little indication of deceleration in advances in food science and technology or a waning of the increasing consumer appetite for foods that may bolster natural defenses. Moreover, the sector remains dynamic and evolving. Demographic changes in advanced nations are likely to support new products; pharmaceutical and medical advances are likely to further seed demand for new, narrowly tailored food products.

Food and beverage conglomerates are reshaping to reflect these fundamental demand trends. Five years ago, Nestlé declared it was “moving from an agrifood business to an R&D-driven nutrition, health and wellness company.”12 Other top food and beverage companies have signaled similar intentions, including Danone, Unilever, General Mills, Kellogg, PepsiCo, Coca-Cola, Yakult, and Kraft.

Nonetheless, opportunities appear to exist at various stages of the supply chain, in new segments and in niches. Determining the right opportunity depends largely on strategic priorities. A review of recent deal drivers, the fastest-growing products and innovation trends can help businesses identify the most promising entry points to this market.

12 The Economist
How are companies growing inorganically in the functional foods market? Frequent approaches involve acquisitions, partnerships, or licenses. Major food and beverage manufacturers have engaged in deals that tend to be large, complete acquisitions.

The multinational food companies, as part of their health and wellness ambitions, recently invested in functional foods, with 17 related deals struck since 2003. The average functional food deal approximated 6.2 times the size of the average nonfunctional food deal during this period, in instances where deal size was known.

Most deals (14) consisted of complete acquisitions, with the remainder consisting of acquisitions of minority stakes. Deals involving functional beverages were the most common, followed by functional foods, and finally nutraceutical ingredients.

Figure 5. Three ways of entering or expanding in functional foods

<table>
<thead>
<tr>
<th>Players</th>
<th>Acquisitions</th>
<th>Joint ventures</th>
<th>Licenses and partnerships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involving ingredient suppliers</td>
<td>Private equity firm Gilde acquired DSM Bakery Ingredients, a nutraceutical supplier</td>
<td>Coca-Cola formed a joint venture with Nestlé to create Envija, a negative calorie drink (Nestlé supplied the nutraceutical)</td>
<td>Kraft Foods has formed a research and licensing partnership with Medisyn Technologies to discover effective bioactive ingredients for use in functional foods</td>
</tr>
<tr>
<td>Involving food and beverage companies</td>
<td>PepsiAmericas bought functional drinks maker Ardea Beverage</td>
<td>Danone and Yakult set up a joint venture in India to enter that country’s probiotic dairy market</td>
<td>General Mills and Curves partnered to launch a food brand with extra fiber for weight management</td>
</tr>
<tr>
<td>Other</td>
<td>N/A(^{14})</td>
<td>Healthcare group Novartis Consumer Health formed a joint venture with Quaker Oats Company to produce functional foods</td>
<td>Kellogg licensed Martek’s DHA omega-3 technology to create Live Bright Brain Health Bars</td>
</tr>
</tbody>
</table>

Sources: Thomson Financial, Jefferies International, Nutraceuticals World, Mergermarket, Dairyreporter.com

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13 Does not include joint ventures
14 To date, there has not been significant evidence of acquisitions involving parties other than ingredient suppliers and food and beverage companies.
Identifying opportunities in functional foods

Which products and health benefits are forecast to lead growth rates?

Top product—beverages: Globally, beverages are forecast to be the fastest-growing segment and to assume the largest share of the market (56 percent in 2013). Two key drivers are consumer preference for the convenience and versatility of beverages and the relative ease of creating tasty products and innovative packaging. Both aspects generally are more difficult in the case of food.

Figure 6. Beverages lead global market for functional foods, growth by form, 2007-2013F ($M)

Top health benefit—energy: Energy drinks are expected to remain popular because consumers can quickly “feel the benefit” of the product. In particular, certain kinds of energy drinks and isotonics (beverages that replace lost electrolytes or rehydrate) are cited as growth niches.

Figure 7. Energy leads US market for functional foods, growth by benefit, 2007-2012F ($M)

**Top food categories—soft drinks and dairy:** The soft drink category includes sports drinks, enhanced waters, and other beverages. Functional dairy brands such as Danone’s are seen to be growing because of their emphasis on “feel the benefit,” convenience, and good taste. Danone’s functional brands are forecast to grow approximately 5 percent to 15 percent annually over the next four years, outpacing the company’s nonfunctional dairy brands. Danone’s four functional brands are forecast to constitute 74 percent of the company’s dairy revenues by 2012.

**Figure 8. Soft drinks and dairy lead US market for functional foods, growth by category, 2007-2012F ($M)**

What alternative opportunities can be penetrated or created?

Good areas to explore are those that advance functional food technologies or successfully defend specific health or food categories.

<table>
<thead>
<tr>
<th>Potential opportunity</th>
<th>Advanced technology</th>
<th>New or underpenetrated health category</th>
<th>New or underpenetrated food category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identifying key targets</strong></td>
<td>Which companies are creating technologies to advance functional food possibilities?</td>
<td>Which companies are providing products with health benefits not yet adequately met by current functional foods?</td>
<td>Which companies are seeking to extend applications of known nutraceuticals to new food subcategories?</td>
</tr>
<tr>
<td></td>
<td>Emerging technologies may make functional foods more effective or deliver more timely benefits.</td>
<td>Companies are researching products that will expand an existing health benefit category or bring a new benefit to the market.</td>
<td>Are there companies that are trying to add nutraceuticals to foods consumers eat regularly?</td>
</tr>
<tr>
<td><strong>Research areas</strong></td>
<td>Some companies are currently researching:</td>
<td>Some companies are currently researching the immune system benefit category. The Food Institute Report suggests researchers have been experimenting with adding probiotics, prebiotics and synbiotics to not only yogurt and dairy beverages, but also to juices, baked goods, soups and coffee to improve the body’s defenses against disease and infection.</td>
<td>Companies are currently researching the inclusion of:</td>
</tr>
<tr>
<td></td>
<td>Technologies that enable the creation of more stable functional food formulations.</td>
<td></td>
<td>Probiotics in beverages and baked goods.</td>
</tr>
<tr>
<td></td>
<td>Technologies that improve taste/smell.</td>
<td></td>
<td>Fibers in beverages and dairy products.</td>
</tr>
<tr>
<td></td>
<td>Technologies that remove grainy textures of fibers added to beverages.</td>
<td></td>
<td>Healthy oils in dairy products.</td>
</tr>
</tbody>
</table>

Sources: New Nutrition Business, The Food Institute Report, Scientia Advisors
Strategic approaches that reflect demographic, health dynamics

Looking beyond individual opportunities to consider broader growth trends

Potential segmentation approach: age

Aging baby boomers to influence demand

Different age groups have different functional food preferences and needs. As such, a close look at the age distribution of the US population can suggest which types of functional foods may become more popular. For example, it may be relevant to consider that the 65 and over category is expected to grow the fastest in the coming years, replacing the 5- to 14-year-old segment to become the largest category of consumers.

Potential segmentation approach: disease

Which diseases are likely to attract pharmaceutical investment?

One common way to segment the functional foods market is by benefit. However, demand for particular benefits may grow in line with certain disease trends. Therefore, considering those diseases that are anticipated to increase in terms of prevalence, diagnosis, or treatment may provide insight into new functional food opportunities.

One proxy for disease growth categories is found in the pharmaceutical therapy areas expected to expand the most.

Pharmaceutical companies tend to invest in diseases for a number of reasons, including estimates of the size of the potential patient population.

Considering the leading pharmaceutical therapy areas, therefore, may provide insight into which patient populations are expected to grow and which benefits (existing or new) could become more popular.

These areas include: oncology, anti-rheumatics, anti-diabetics, anti-hypertensives, and anti-virals. Populations seeking these sorts of pharmaceutical therapies are not likely to look to functional foods as a substitute for the drugs they receive; rather, they may seek complements to their prescribed course of treatment. For example, patients being treated with chemotherapy may become anemic, and could therefore seek iron-fortified foods.

Figure 9. Share of US population, by age, 2009F–2030F

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>2009</th>
<th>2015</th>
<th>2030</th>
<th>Delta (2030 v. 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5</td>
<td>6.9%</td>
<td>6.9%</td>
<td>6.7%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>5 to 14</td>
<td>13.1%</td>
<td>13.2%</td>
<td>13.2%</td>
<td>0.1%</td>
</tr>
<tr>
<td>15 to 19</td>
<td>7.1%</td>
<td>6.3%</td>
<td>6.4%</td>
<td>-0.7%</td>
</tr>
<tr>
<td>20 to 24</td>
<td>7.0%</td>
<td>6.8%</td>
<td>6.3%</td>
<td>-0.7%</td>
</tr>
<tr>
<td>25 to 29</td>
<td>7.0%</td>
<td>6.9%</td>
<td>6.1%</td>
<td>-0.9%</td>
</tr>
<tr>
<td>30 to 34</td>
<td>6.5%</td>
<td>6.8%</td>
<td>6.6%</td>
<td>0.1%</td>
</tr>
<tr>
<td>35 to 39</td>
<td>6.7%</td>
<td>6.4%</td>
<td>6.6%</td>
<td>-0.1%</td>
</tr>
<tr>
<td>40 to 44</td>
<td>6.9%</td>
<td>6.3%</td>
<td>6.4%</td>
<td>-0.5%</td>
</tr>
<tr>
<td>45 to 49</td>
<td>7.5%</td>
<td>6.5%</td>
<td>5.9%</td>
<td>-1.6%</td>
</tr>
<tr>
<td>50 to 54</td>
<td>7.1%</td>
<td>6.9%</td>
<td>5.7%</td>
<td>-1.4%</td>
</tr>
<tr>
<td>55 to 64</td>
<td>11.4%</td>
<td>12.5%</td>
<td>11.9%</td>
<td>0.5%</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>12.9%</td>
<td>14.5%</td>
<td>18.2%</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

Sources: AstraZeneca, S&P, PwC analysis, University of Pennsylvania
What other factors might drive opportunities in the functional foods market?

New possibilities may arise as scientific and other improvements address the following questions:†

• What if scientists bred genetically modified foods with functional properties? Pigs that produce omega-3 fatty acids have already been cloned (and have been the subject of some controversy).

• What if medical practice requires the consumption of functional foods as a prerequisite for treatment of a certain medical condition?

• What if functional foods become more potent? What if it becomes possible for food companies to begin to incorporate off-patent, over-the-counter drugs into functional foods?

Filtering the promising from the more challenging

In a field dominated by multinationals, as well as increasingly choosy consumers and likely increasing price sensitivity, potential investors will need to weigh certain questions and factors carefully.

Large incumbents

A number of large multinational functional food providers may create barriers to entry. These companies may possess desirable distribution channels, premium client lists, and brands that “own” specific food categories or health claim markets. Their scale may afford them an advantage in coping with the higher cost of researching, developing, and sourcing functional foods.

But opportunities appear to exist at various stages of the supply chain, in new segments and in niches. Determining the right opportunity depends largely on strategic priorities. Investors will need to ask themselves the following questions:

• What is the investor’s strategic objective—to add products, geographies, distribution capabilities, or demographic groups?

• What is the investment horizon?

• What is the amount to invest? Would developing new skills or potentially costly technologies be necessary to compete in the chosen segment?

• What are the core competencies of the investor?

† These questions are not intended to reflect actual trends in the marketplace, but rather to stimulate discussion of opportunities.
**Consumer skepticism**

Consumers may already understand the concept of a functional yogurt and the role of helpful bacteria that traditional yogurts already contain. However, other functional products may be less intuitive to consumers, who may question their purpose.

If the objective is to create a new functional product, is it likely to work better than current alternatives? Will the investor be able to source natural products and incorporate them into functional offerings? Does the company have the ability to alter the ingredient makeup of typically unhealthy products?

Does the investor have the capacity to educate consumers about the benefits of the functional foods it or the target creates and/or why they are better than the competition?

**Price sensitivity**

In the near term, as disposable incomes fall, consumers may be more sensitive to the higher prices at which functional foods are typically sold. Investors should ask themselves:

New innovative products can be a way to spark enthusiasm in a food category—what products can be developed and marketed without costly trials to prove health claims?

Private label goods tend to be offered at lower prices—how attractive is the private label opportunity, strategically and operationally?

An acquisition might lead to synergies and cost savings which could enable a manufacturer to lower prices without hurting profits. Which targets would maximize cost savings?

What is the capacity to educate consumers about the value of consuming a particular functional food as a way to promote health? Industry experts suggest that functional foods may appeal to consumers seeking to avoid unnecessary spending on healthcare, making communication of potential health benefits critical.

**Functional foods: possibilities and challenges**

In conclusion, the functional foods market holds numerous possibilities, but also a number of challenges. In this document, we have provided a brief overview of some of the key characteristics of the market, but additional questions will almost certainly arise as investors look more deeply into this space.
To have a deeper conversation about how this subject may affect your business, please contact:

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