The Strategic Marketing Institute

Rapid Opportunity Assessment: Vegetable Sector

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How to use this Rapid Opportunity Assessment

If you are reading this assessment, then there is a strong probability that you are interested in understanding and seeking out high-value products and businesses. That is to say, you are seeking differentiated or niche products and not commodities. Business success and profitability with differentiated or niche products typically rely on three success factors: (1) a unique idea for a product or service, or a unique process to produce, deliver, or market a product or service, (2) the entrepreneurial skill and drive to commercialize the idea, and (3) a sound business or product development plan to bring the product to market.

This rapid opportunity assessment gives insights into where potentially successful and profitable unique product ideas may be found in today's marketplace. The assessment points the direction toward likely uniqueness in two ways. First, critical customer trends are highlighted: wellness, indulgence, convenience, value, and ethnicity. In addition, demographics are presented to support these trends. Any unique product idea today must address the five trends or the key demographics in some significant way. Second, product categories are then analyzed to determine which have greater or lesser potential to capitalize on the trends and demographics. Profitable business and product ideas will be those that are more unique, more likely to fit the trends, and more likely to fit the product categories with the greatest potential.

What this assessment does not do is present profit or detailed sales estimates for a particular product or business. At the specific product level, prices, costs, and market volumes for these high value products are not necessarily known. If they are known, the information is likely proprietary. Profit and sales estimates for unique products can only arise from the additional work typically done in a business or product development plan. Feasibility studies to determine profitability are often complex and rely on specific and well defined product ideas. In addition, they analyze the set of current and likely competitors for that product or service, a defensible competitive strategy, estimates of total capital required to be successful, and an assessment of the major risks involved in the proposed venture. All of these factors must be done for the specific opportunity under consideration. If this assessment provided information on specific products claiming to be unique, such a claim would not likely be true because the idea would be well known and the profit potential has probably already been tapped by others.

If you are an agricultural producer or other business person elsewhere in the agri-food system, you can use this assessment in one of two ways. First, if you have a specific product idea in mind, you can use the analyses in this assessment to confirm or test the potential of that idea in regard to (1) whether it goes with or against the five trends and demographics driving consumer demand today, and (2) whether it fits in a product category that has broad, selective, or limited potential. Ideas that go against trend or arise from a more limited category are not necessarily ideas to avoid. These ideas need considerably more care to define whether customers see the value in the product.

If you do ***not*** have a specific product idea but would like to create one, then the second way to use this assessment is to learn about key market trends and product categories. Product or business innovations that are on- trend or fall into the broader opportunity categories are good places to spend time developing a unique product attribute or unique method of production, marketing, or delivery. The process of idea creation is not an easy one, but there are ways to take on this task. For example, you can ask yourself what is missing from existing products or businesses in the market. You could also visit with potential customers and ask what they like or dislike about current market offerings. Your creativity is central to discovering the specific idea.

If you are a policy maker, economic developer, industry association executive or faculty member interested in these markets, you can also use the assessment in your work. You may be asked to support business efforts in developing or commercializing new products or businesses. Policy changes, industry-wide strategies, product-based research or infrastructure development are some of the many supporting activities that may be critical to allowing agri-food firms to convert opportunities into profitable businesses or products. This assessment suggests potential areas for judging where your support might be most beneficial. Again, greater potential for success arises from product ideas that go with the trends and fall into the broader opportunity categories. If an idea that is seeking support falls outside the trends or in the narrower opportunity categories, you should scrutinize that idea more heavily as opposed to just saying no to the idea.

In summary, this rapid opportunity assessment identifies the potential for business and product success across broad product and attribute categories, and thus the assessment provides a basis for sound planning. The assessment has been thoroughly researched based on relevant public and private information sources. This assessment can help you start the business or product development process, but it is not an end in itself.

Executive Summary

Consumption trend and market drivers

Vegetables have been one of the fastest growing food items over the past many years. In particular, due to consumers' shift towards fresh products in recent years, per capita consumption of fresh vegetables has seen a significant increase over the last two decades. In contrast, consumption of canned vegetables has declined, while consumption of frozen vegetables remained unchanged. Vegetable juices and juice drinks appear to follow consumption trends of other processed vegetables. Frozen vegetables remained to be the least popular way to consume vegetables in the U.S.

The domestic demand for vegetable products is shaped by a myriad of market forces. A combination of factors such as wellness, indulgence, convenience, ethnicity, value, and demographic forces acting interdependently or independently, influence consumption patterns and demand for fruit products.

Growing number of new products

Overall, new product numbers across all vegetable categories have seen a steady growth during the last couple of years. More than 1,500 products have been introduced in major global markets in the first eleven months of 2004. New products have been introduced in more than 13 product categories including products in the main vegetable category (fresh and minimally processed vegetables, vegetable juices and juice drinks, canned vegetables, dried vegetables, frozen vegetables), and vegetable-containing products (spreads, sauces and seasonings, soups, baked items, fresh prepared and processed meals, side dishes and baby foods and drinks).

The new products have a broad array of diversity in their flavor combinations, product mixes, forms, appearances and size. Many new products have positioned themselves as ready-to-eat healthy snacks, salads, side dishes, etc. Others are coming combined or stuffed with other food items for use in prepared meal kits, soups, baked items, sauces, dressings, dips, or as pizza toppings. Products are also entering the market with different innovative package designs being more convenient, highly portable and storable. Some new products are targeting specific consumer groups (e.g., products designed for school children, older adults, specific ethnic groups, etc.), while others enter the market in the upscale and gourmet product lines. There are also new products that are entering the market for use in specific time of the year or as products tied to special occasions (e.g., vegetable containing foods for consumption around Christmas, in wedding ceremonies, etc.), while others are coming as a substitute to other products. New products are also coming strictly designed for sale through specific retail channels (e.g., vegetable products for sale through mass merchandise retail outlets or food service operators).

Diverse product development and market opportunities

The wellness, indulgence, convenience, ethnicity, value and demographic market segments provide a broad array of product development and market opportunities for vegetable growers, shippers, manufacturers, wholesalers and retailers. Depending upon the potential to raise gains from sales, opportunities in these market segments can be broad, selective or limited (Matrix 1 and 2).

Broad product development and market opportunities for fresh and minimally processed vegetables

Vegetables are highly regarded for their variety, convenience and health benefits. Consumers continue to use fresh vegetables as salad mixes, side dishes or ingredients in prepared meals. Fresh products that contain complex and colorful blends incorporating a wide variety of vegetable mixes and flavors would especially benefit from sales in all market segments. Pre-washed, pre-cut or pre-cooked vegetables are making the product more convenient and popular. Bundling of vegetables with other products and improvements in packaging innovations would make the product more appealing to the consumer. In general, as consumers continue to lead a healthy lifestyle, there are broad product development opportunities in this category. Currently, supermarkets and the food service outlets are the primary retail outlets for these products. Future sales growth through the mainstream retail channels will, however, depend on the availability of shelf spaces in these stores.

Matrix 1: Positioning product development opportunities by market drivers

Vegetable product	Wellness	Indulgence	Convenience	Ethnicity	Value	Demographic structure
Fresh & minimally processed	Broad	Broad	Broad	Broad	Selective	Broad
Vegetable juice	Broad	Selective	Broad	Selective	Selective	Selective
Canned vegetables	Selective	Selective	Selective	Selective	Selective	Selective
Frozen vegetables	Selective	Selective	Selective	Selective	Selective	Selective
Dried vegetables	Selective	Selective	Selective	Selective	Limited	Selective
Vegetable spreads	Selective	Broad	Broad	Limited	Selective	Limited
Vegetable sauces & seasonings	Selective	Broad	Broad	Broad	Selective	Selective
Vegetable soups	Broad	Broad	Selective	Broad	Selective	Selective
Vegetable baked items	Selective	Broad	Broad	Selective	Limited	Broad
Vegetable prepared meals	Selective	Broad	Broad	Broad	Selective	Limited
Vegetable processed meals	Selective	Selective	Selective	Selective	Limited	Selective
Vegetable side dishes	Selective	Selective	Broad	Selective	Selective	Selective
Vegetable baby foods	Selective	Selective	Selective	Broad	Limited	Selective

Matrix 2: Positioning opportunities by retail market channel

	Supermarkets	General retail/Wal-Mart	Specialty retail	Specialty food retail	Broad food service
Fresh and minimally processed	Broad	Selective	Selective	Selective	Broad
Vegetable juice	Broad	Selective	Selective	Selective	Selective
Canned vegetables	Selective	Broad	Limited	Limited	Selective
Frozen vegetables	Selective	Selective	Limited	Limited	Selective
Dried vegetables	Broad	Selective	Selective	Limited	Selective
Vegetable spreads	Selective	Selective	Selective	Selective	Selective
Vegetable sauces & seasonings	Broad	Broad	Selective	Selective	Selective
Vegetable based soups	Broad	Broad	Selective	Selective	Broad
Vegetable baked items	Broad	Broad	Selective	Selective	Broad
Vegetable prepared meals	Broad	Broad	Selective	selective	Limited
Vegetable processed meals	Broad	Selective	Limited	Limited	Selective
Vegetable containing side dishes	Broad	Selective	Limited	Limited	Limited
Vegetable baby foods	Selective	Selective	Limited	Selective	Limited

Selective to broad product development and market opportunities for vegetable juices and vegetable containing spreads, soups, sauces and seasonings, prepared meals, and baked items.

In general, variety, flavor and convenience will play an important role to expand the market for these products. Some of these products could also benefit from an increasing demand for healthy foods. Vegetable juice manufacturers who can focus on variety, texture and flavor will have broad opportunities to raise gains from sales. Vegetable spreads, soups, and sauces and seasonings can also benefit from such product innovations. Vegetable soups would especially benefit from the trend towards eating smaller and healthy meals throughout the day. Flavor, quality, texture and ingredients would be the leading factors in raising sales from vegetable containing meals. The growing demand for variety, convenience and interest for ethnic food flavors among the general population would also provide broad opportunities for vegetable containing meal products.

Convenience and packaging will also influence future market growth for these products. Packaging innovation that makes the products easier to store, carry, open or chill would provide broad opportunities to expand the market. New sauces and seasoning, meals, and soup products that are coming simple as heat and eat food items will appeal to a broad array of consumers. As a ready-to-eat food product, vegetable containing baked items are important food items that fit into the present consumers' lifestyles. Cross-merchandising or cross-promotion of these items with other products may help manufacturers to raise sales.

Regarding retail market outlets, a continuous challenge for most of these products would be the fast growth in new product development that is currently saturating the existing mainstream retail channels. Shelf space allocation would particularly continue to be a primary problem to sell these products through the mainstream retail market channel. Some of these products are also currently facing high competition from other convenient, fresh and healthier food items that are entering the market. Individuals who can find alternative market outlets such as specialty food stores or make cross-merchandising and ties with fast food chain operations, restaurants and other food service operators will benefit from these market outlets.

Selective product development and market opportunities for dried vegetables

The market for dried vegetables is not widespread. Most of the dried vegetables are currently used as ingredients in other food products including soups, side dishes, snacks, sauces and seasonings, and baked items. Dried vegetables, in general, fit the healthy food qualities that are in growing demand. But, due to a high competition from other products that are fresh and come with better flavor, the category will not open broad sales opportunities for manufacturers. They are, in fact, convenient products in terms of packaging, transportation and shelf life. These products, however, are not widely used by different ethnic and demographic groups. Supermarkets would provide broad market opportunities for these products. In the future, the food service outlet can also play an important role, if product innovations continue to raise the use of dried vegetables as important components in restaurant food preparations or as toppings and dessert ingredients.

Limited to selective product development and market opportunities for canned vegetables, frozen vegetables, and vegetable containing side dishes, processed meals and baby foods.

A steady growth in fresh and minimally processed vegetable consumption has significantly affected the market for canned vegetables, frozen vegetables, and vegetable containing side dishes. Consumers increasingly demand for more freshness, variety and convenience in food products. Thus, many consumers perceive these products as old fashioned and not as healthy and convenient as fresh and minimally processed products. In addition, side dishes have high competition from complete meals and other convenient foods. So, manufacturers of these products will have limited to selective product development opportunities in most of the market segments. Vegetable containing processed meals could be considered a healthy alternative to other processed meat products. But, these are products that are not appealing to consumers who want to purchase fresh products. The baby food and drinks market is restricted by a finite period of use, making it difficult to expand sales from this product. In general, those manufacturers who can focus on baby foods and drinks that are healthier and convenient to use (e.g., easy to mix, portable, microweavable, etc.) would have better opportunities to raise sales. Mass merchandise retail outlets and supermarkets would remain the primary market outlets that provide better market opportunities for some of these products. Even in this case, with the ongoing challenge for space and an increasing number of new products entering the market, sales through most retail channels will be limited.

Branding and private label products – Selective to broad opportunities

Currently most branded vegetable products are coming from national manufacturers. But branding in some of the products such as fresh-cut vegetables is not widespread. Individual manufacturers and retailers have thus still selective opportunities to develop private label products focusing on new product lines (e.g., functional juice drinks or brand extensions to fill the gap between different types of products). There may also exist a broad opportunity to develop private label products for some of the products that are relatively new for the market (e.g., fresh and minimally processed vegetables, dried vegetables, etc.)

Co-branding and bundling products with other products can also provide a better opportunity for some of the products. For example, some emerging food trends such as the Home Meal Replacement (HMR) category may provide a unique product opportunity especially for manufacturers who want to bundle their product with supermarkets through co-branding or introducing new package designs to their products. Fresh-cut vegetables, in particular, can benefit from this arrangement. Canned vegetables and frozen vegetables can also be co-branded or make tie-ins with other products such as baking good or sports and other activities that can raise consumption. Dried vegetables can be bundled with other food products to create meal kits, meal replacements, toppings, etc.

In general, vegetable products continue to offer a variety of healthy and convenient meal solutions for the consumer. Both the conventional and organic production segments will benefit from this trend.

Introduction

U.S. food consumption is in a state of constant change. Consumers are increasingly expanding their food demand horizons and are embracing sophisticated new food products. As a result, agri-businesses are facing increasing competition and markets that demand more frequent innovation and higher quality products and services. People currently have a wide range of knowledge on domestic and global threats and challenges agri-businesses are facing. The solutions to these challenges have, however, a tendency to stick to traditional economic approaches that mainly focus on cost and productivity measures or simply to changing someone else (e.g., customers, government, competitors) rather than change what the industry/sector is doing. There are also blurred lines between threats and internal weaknesses that made it difficult in seeking solutions. These approaches ultimately do not appear to fix the problems, and many food and agricultural commodities are eventually suffering from low prices and profits.

Fundamental to future successes of agribusiness in this fast-paced food system is to fully grasp contemporary food consumption patterns, their driving forces and growth opportunities that exist inside and outside the box. (1) Future agri-business and industry growth will primarily come from product innovations. Successful product innovation starts and ends with consumers purchasing something they want and need. So, agri-businesses can raise gains from sales by adapting their ideas, technologies and resources to the ever-changing consumer wants, needs and perceptions. Currently, these consumption patterns and their driving forces are not well understood and articulated. (2) Growth solutions and opportunities for most agri-businesses are viewed just with-in-the box, and thoughts are mostly caught up with threats and challenges. Firm and industry strengths are not well articulated and not connected with potential opportunities or there are no focused and well defined approaches for their realizations. There seems to be lack of recognition for the need to look for non-traditional opportunities and solutions, partly due to the predominance of traditional views and industry culture not well prepared for change.

The argument here is that product innovations that meet the rapidly changing customer demand should be the key in the constant search for success in agribusinesses. New product development opportunities are not limited just to “physical” outputs. Opportunities can also be sought or spotted within the supply-chain system in product processing, marketing or branding or they can exist outside the box in a form of bundling one product with another, co-branding, cross-marketing, tie-ins, etc.

The purpose of this paper is to broadly identify and assess new product development opportunities for the vegetable sector of Michigan, Ohio, and Wisconsin. The paper is intended for vegetable growers, packers, processors, wholesalers and retailers who want to take advantage of new product development opportunities based upon consumers’ wants and needs and turn away from a traditional commodity-oriented production and marketing approach. In broader terms, the paper provides a wide range of product development opportunities that can be used as a basis to formulate industry-wide innovation strategies for the vegetable sector. Academic researchers and other partners in the vegetable sector can also benefit from the outcome in a form of identified issues, challenges, opportunities, etc. in many vegetable product categories that require further investigation, interpretation or analysis.

The paper is developed based on consumers’ reports in different vegetable product categories and details are presented and structured as follows. Section 1 will briefly describe U.S. vegetable consumption trend and major market drivers. Then in section 2, consumer reports and databases specific to vegetables are used to identify new product introductions in recent years for a broad array of vegetable product categories. In section 3, product development opportunities in each category are summarized based upon market drivers. In addition, this section will look at retail market channels and branding opportunities, and implications on production practices. Finally, a conclusion is made reflecting overall implications of these available opportunities for the vegetable sector.

Consumption trends and market drivers in the vegetable sector

Food consumption in the U.S. has seen significant changes over the past four decades. One of the distinct features of these changes is that people these days are consuming more red meat, grain products, and fruits and vegetables. Consequently, vegetables have been one of the fastest growing food items over the years. From 1991 to 2000, per capita vegetable consumption has increased from 398 pounds to 428 pounds. Due to consumers’ shift towards fresh products in recent years, fresh vegetable consumption has seen a significant increase during this period. In contrast, consumption of some processed vegetables such as canned vegetables has declined, while consumption of frozen vegetables remained unchanged. Vegetable juices and juice products appear to follow consumption trends of other processed vegetables. Frozen vegetables remained to be the least popular way to consume vegetables in the U.S. (about 33 pounds per person). This consumption trend, however, represents only the main vegetable categories. There are many other vegetable-containing products that will briefly be covered in section 2. Annual spending on fruits and vegetables has also seen an increase. Between 1998 and 2001, average household expenditure on fruit and vegetables rose by 11% (Mintel, *canned fruit and vegetables*, 2003).

One significant issue worth mentioning here would be the impact of imports on vegetable consumption patterns in the U.S. First, imports of fresh and processed vegetables to the U.S. market have shown an increase over the years. For example, in 2001, imports of vegetables as a share of domestic consumption averaged 12.3% (Cook, 2003). Between 1990 and 2000, imports of fresh vegetables have increased at an annual growth rate of 8.1% (Mintel, *canned fruit and vegetables*, 2003). Given the fragile nature of some of the vegetable products, most of the vegetables mainly green salads are normally grown closer to processing facilities. Therefore, the import data may reflect vegetable crops that can be packed and shipped more easily. Second, there are vegetable products available in the U.S. market today that many consumers did not know some years ago. For example, the sector is currently experiencing challenges from the growth in imports of non-native produce such as specialty lettuces and peppers (Mintel, *canned fruit and vegetables*, 2003**).**

Third, for many years, vegetable availability has largely been affected by seasonality of production. But in recent decades, year-round domestic production and international trade has been successful in leveling out consumption fluctuations of some vegetable products in the U.S. market. This situation has not only created a more stable supply for consumers but has also played a major role in changing consumer demand for vegetables. As imports increase and the general population becomes familiar with new varieties and vegetable products, demand continues to grow and new vegetable products become regular items in the market (Charlet and Henneberry, 1992; Pollack, 2001; Cook, 2003).

Market drivers in the vegetable sector

The domestic demand for vegetable products is shaped by a myriad of market forces. A combination of factors such as wellness, indulgence, convenience, ethnicity, value, and demographics, acting interdependently or independently, influence consumption patterns and demand for vegetable products[*].

Wellness

Wellness reflects foods and food categories that have perceived impacts on the consumers' health and wellbeing. There are many health and diet concerns consumers are facing today. One growing concern is the existence of many people that are overweight or obese. There are thus wide spread nutrition education programs to address the issue and endorse the idea that people need to avoid food with trans-fatty acids, high calories, etc. This situation has positively affected the consumption of several food products in the past couple of years. Products like fruits and vegetables that are high in fiber and low in fat are among products that have been benefiting from these efforts. Vegetables have, in general, been seen to be an important part of any diet leading towards good health. The sector has primarily benefited from consumers' shift from a focus on diseases related to nutrient deficiencies to the linkage between different diet and major chronic diseases (Mintel, *healthy snacking*, 2003).

The other consumer concern is the presence of chemical residues on fresh produce, which has impacted consumption trends in some food items. The average consumer seems to be increasingly interested in food products that are natural and with low pesticides, including organic foods. As a result, there are a wide variety of organic fresh and processed vegetable products that are currently available on the market.

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[*] These are market drivers identified at a brain storming session that included experts from The Hale Group and MSU product center.

Indulgence

Indulgence considers a broad array of food product attributes designed to meet consumers' deeply felt desires, as opposed to their needs. Although some consumers are actively trying and succeeding in adding healthy foods in their diets, the mainstream consumer is still turning towards comfort and indulgence foods. Consumers demanding indulgence foods have multi-faceted food consumption habits and behaviors that go beyond considering food just as a functional item. These are luxury or impulse buyers who buy food products for different reasons; they might have connection to the food since childhood, they like cooking the specific food item, they buy it because it is natural, they like tasting new flavors and new products, etc. This consumption habit is the key to a continued success in the consumption of most of the regular and gourmet food items. There are a wide variety of vegetable products that are currently benefiting from this market trend.

Ethnicity

This market driver focuses on products that arise from the food traits of specific ethnic groups. In the 50s and 60s, the middle class defined the U.S. food market. Consumer products were marketed to the predominant, largely homogenous middle class. But since mid 80s U.S. consumers have become more diverse, with distinctly different food consumption habits and the market is breaking up along regional, ethnic and demographic lines (Senauer, et al. 1991). Today, there is a significant growth and change in the ethnic mix of the U.S. population, with Hispanics and Asians being the fastest growing ethnics groups. The U.S. Hispanic population grew by 5.7 million in 1998-2003, and is expected to grow by 5.6 million in 2003-08, becoming an increasingly important demographic target (Mintel, *canned fruit and vegetables*, 2003; *non-alcoholic beverages, volume II*, 2004). In the 90s, Hispanics were not seen as an important consumer group, because their purchasing power was negligible. But in recent years, their income has shown a significant increase. They also spend the larger part of their income on food than the average U.S. consumer (Food system group, 2004). This growth in purchasing power has been acknowledged by food and beverage manufacturers and retailers, and it is spurring demand for various food items. Currently there are different kinds of new food products being offered on the market targeted at Hispanics. For example, in the past few years, Goya Foods introduced about 30 varieties of canned beans directed towards this market (Mintel, *canned fruit and vegetables*, 2003). The vegetable sector can have many advantages from this trend.

One other important area in the ethnic food category is foods marketed to the wider population that have been influenced by ethnic tastes and ingredients. There are many ethnic food categories in the U.S. food market that are not widely consumed by the larger population. These foods, traditionally preferred by the ethnic groups, have the potential to crossover to the general market and attract the attention of a broad array of consumers. One unique advantage for the vegetable sector, in this regard, would come from the use of vegetables as one of the components in the preparation of these foods. There are some emerging trends of the market for ethnic foods. One example is the food network TV channel that displays cooking a wide variety of exotic foods. Consumers interested in trying new foods are using this channel to get ideas how to prepare and cook foods, and there are many consumers who are currently trying things at home.

There are also well established ethnic food restaurants like the Moosewood restaurant in Ithaca. Besides opening well known vegetarian ethnic food restaurants, this restaurant has published different cook books focusing on a wide range of ethnic foods extending from Mediterranean/middle eastern style to Asian or Far East foods. One other emerging trend is bundling of foods from ethnic food restaurants with fresh food supplies in specialty food retail stores. For example, Foods for Living has started offering ethnic foods from local ethnic restaurants in its retail stores. These foods are coming in plastic containers and claim to be fresh and high quality. The good news for the vegetable sector is that most of these foods are generally vegetarian and, in most cases, vegetables are the main ingredients used in preparing foods.

Convenience

Convenience refers to anything that makes life easier for the customer. Convenience is becoming an increasingly important factor for consumers when buying food products. There are an increasing number of consumers who are busy and perceive that they have less time for cooking and eating food at home. This dramatic change in lifestyles has influenced what, when and where to eat breakfast, lunch or dinner. Many people have eventually changed their eating habits. Some are escaping meals while others are eating food on-the-go as snack.

Today's consumers are also less able to cook food at home or prepare meals from scratch ingredients. This situation has led to a significant growth in commercial food establishments, and prepared foods that are convenient. In addition, packaging innovations have helped in developing food products that are easily portable or storable. The vegetable sector, in this regard, is well positioned to take advantage of these trends.

Value

Prices have significant effects on food expenditures and eventually play an important role in explaining part of the trends in food marketing. People with low income tend to buy less expensive foods, and they are attracted to low-price shops. Private-label products are leading in this category, since they, in most cases, are sold at lower prices than branded products. One good example in this regard is the trend in the canned fruit and vegetable category. Until recently, these products have been widely available in supermarkets and other retail shops. But currently they are becoming old fashioned food products that do not appeal to many consumers. So, sales are being concentrated through mass merchandise stores as manufacturers continue to offer low-price canned products in bulk.

Demographic structures and changes

This mainly refers to changes in the age, gender and household structure of the U.S. population. One distinct pattern in the past few decades has been the decrease in the teenage population and increase in the elderly population. These changes are partially responsible for shifts in food consumption patterns, and have implications for the vegetable sector. Older people will be more concerned about health and nutrient implications of their food and would want food products that meet their special needs. Therefore, this expanding population of middle-aged and elderly people will remain to be a potential consumer of fruits and vegetables in the coming decades. In addition, the sector would benefit from an increasing number of health conscious younger consumers (Mintel, *healthy snacking*, 2003). The gender structure is also becoming very significant in terms of food consumption. There are, for example, many vegetable products that are more preferred by women than by men or vice versa. Changes in household composition are the other demographic factors affecting consumer food demand. In general, the average household in the U.S. is declining. But there are still household size and purchasing habit variations among different demographic groups. So, identification of these various market segments would play an important role in raising sales from vegetable products.

New product developments

According to the Mintel Global New Product Database (GNPD) report, there are two major types of new vegetable products that have been introduced in recent years. (1) New product lines. These are new product categories that allow manufacturers to enter into a new market. (2) Product line extensions. These are product categories that support existing product lines to expand their range and scope to a larger market segment.

Most of the new products entering the market are in the second category, because it is a quick and efficient strategy for manufacturers to enter a market with less spending in introducing the product.

Between 1999 and 2004, the vegetable sector has displayed consistent growth of new products. New products have been introduced in major global markets, which include more than 50 countries. With the introduction of more than 1,500 vegetable and vegetable-containing products (new and line extensions) in the first eleven months of 2004 alone, the sector is expected to exhibit a significant growth of new products by the end of the year (table 1). The following sections provide a brief description of recent trends in new product developments for fourteen vegetable and vegetable-containing product categories.

Table 1: Vegetable and vegetable-containing new products introduced in major global markets (1999-2004)

	1999	2000	2001	2002	2003	2004*
1. Vegetable category						
Fresh & minimally processed vegetables	18	28	22	29	63	69
Vegetable juices and juice drinks	25	36	28	41	70	73
Canned vegetables	16	11	19	25	38	39
Frozen vegetables	30	30	63	75	86	99
Dried vegetables	27	23	34	56	40	63
Vegetable spreads	6	20	24	12	17	27
2. Vegetable-containing products						
Vegetable based sauces and seasonings	65	77	118	125	194	193
Vegetable based soups	73	81	114	132	179	183
Vegetable containing baked items	15	14	34	36	63	63
Vegetable containing meals	135	157	252	326	321	384
Vegetable containing processed fish & meat meals	24	47	57	78	101	102
Vegetable containing side dishes	37	27	46	65	57	57
Vegetable based baby foods & drinks	16	24	22	34	55	49
Other vegetable-containing food products**	39	36	55	69	103	157

*through 11/19/04. **Primarily includes vegetable containing dairy products.
Source: Mintel GNPD database report

Fresh and minimally processed vegetables

Per capita consumption of fresh vegetables is on the rise. In 2000, consumption of fresh vegetables was 202 pounds, up from 171 in 1991 (Mintel, *canned fruit and vegetables*, 2003). However, there are differences in the consumption patterns of individual vegetable products. For example, between 1999 and 2001, per capita consumption of head lettuce, cauliflower, sprouts and broccoli declined, while consumption of romaine and leaf lettuce, spinach and snap beans showed a significant increase (Mintel, *bagged salad and salad dressings*, 2004).

In 2003, fresh-cut vegetables represented 31% of all pre-packaged produce retail sales (Cook, 2003). In particular, the market for bagged salads and salad dressings has shown a steady growth over the last few years. Between 1998 and 2003, for example, retail sales of these products grew at 28% in constant 2003 prices. Convenience, increasing demand for healthy foods and introduction of new salad dressing flavors contributed to this growth (Mintel, *bagged salad and salad dressings*, 2004).

In terms of new products, the category has experienced growth in recent years. According to the Mintel GNPD report (table 1), there were 69 fresh and minimally processed vegetables introduced in the first eleven months of 2004. Since many new fresh and minimally processed vegetables are normally sold through local and regional retail stores, the mintel GNPD data may not reflect the whole picture of new products that are entering the market. Therefore, the actual number of new products entering the market could be higher than the above figure. Besides, many new vegetable products and salads in the mintel report appear to be added under other food categories such as vegetable containing meals, side dishes and snacks.

Most of the new fresh and minimally processed vegetable products are coming as mixes of a wide variety of vegetables that are pre-washed, fresh-cut or shredded, pre-cooked, steamed or dehydrated and ready-to-eat as side dishes, salads, snacks, etc. Others are ready to steam or need to be microwaved or heated. There are also stuffed vegetables and pureed vegetable mixes. Some of the vegetable/salad mixes are coming seasoned and spiced or with additional sauces, dips, and dressings. Some products position themselves in the gourmet product line. Norpac/Flav-R-Pac/USA, for example, presents a gourmet vegetable blend side dish which is said to be made from natural vegetables. The product is available for sale through food service operators.

Manufacturers are also working to make the product more convenient for the consumer and to improve packaging to keep the product fresh. There are a range of vegetable mixes packaged in tubs, trays or flexible plastic containers designed to maintain freshness. Most products in this category are chilled while some are entering the market as shelf stable products. Some products come in single-serving packets ideal for single individuals and for the on-the-go consumer. For example, river ranch fresh foods/USA introduced a line of various vegetable snacks suitable for on-the-go consumer. The line includes snap peas & carrots, snow peas, and snap peas & celery. These vegetable combinations are said to be a convenient, healthy alternative to salty snacks. It also introduced a vegetable mix that is packaged in a microwave-ready bag.

Some of the new products are introduced for the ethnic market. For example, Theodor Kattus/Germany introduced a selection of Asian vegetables suitable for wok cooking. There are also pickled vegetables designed for children. Some products are designed to address health and diet concerns of consumers. These products claim to be calorie-free, GM-free, all natural or organic. Others are said to be suitable for vegetarians.

Vegetable juices and juice drinks

This section covers only juice and juice drinks that contain vegetables. Overall, the market for juice and juice drinks is not growing. For example, between 2000 and 2002, sales of fruit and vegetable juices eligible for FDA-approved health claims were relatively flat (Mintel, *FDA-Approved health claims*, 2003). With the growing number of new products in the non-alcoholic beverage sector, this category is expected to face high competition from other drinks that include fruit juice drinks, enhanced water, milk, yogurt mixes and other hot and carbonated drinks.

Compared to fruit juice and juice drinks, the number of new products in the vegetable juice category is very small. In 2004, there were 73 new products introduced in major global markets. The overall picture, however, shows an increasing trend.

Many juices and juice drinks in this category are coming as drinks made from mixes of vegetables, while others are part vegetable and part other products such as fruit and dairy products. Also, some drinks come as cocktails, concentrates and smoothies made from mixes of vegetables and fruits. Most of the new products have positioned themselves as healthy and functional drinks fortified with additional ingredients like vitamins and minerals or they claim to be calorie-free, no/low fat, natural, no added sugar, no preservatives, rich in antioxidants, etc.

There are some drinks that enter the market claiming to be suitable drinks in specific seasons of the year. For example, Ito En/Japan introduces a blend of vegetable and fruit juices, comprising ginger, Chinese lemon, chili, carrots, spinach, apples, and lemons that claim to have warming effects for the winter.

Although convenience and packaging have been the focus of some manufacturers, most of the new products in this category do not show new innovations and improvements in this area. They are rather coming in relatively large size plastic bottles, cartons or cans. Most of them are shelf stable while some need to be chilled.

In addition to vegetable juices and juice drinks, there are also some other new vegetable containing beverages that are currently entering the market. For example, Phap Quoc/Vietnam introduced a red wine that is said to have been produced from a natural vegetable. There are also hot beverages, enhanced water products, iced tea and coffee products, and concentrates that are made from plain vegetables or contain vegetables. Chicobel/Belgium introduced an instant soluble chicory mix drink which is said to be 100% vegetable and contains fibers and minerals. Asahi soft drinks/Japan introduces a sugarless, calorie-less coffee product that uses deep-roast coffee beans, vegetable cream, milk and milk powder.

Canned vegetables

Overall, vegetable consumption trends do not favor canned vegetables. Per capita consumption of canned vegetables has dropped from 114 pounds in 1991 to 105 pounds in 2000. During the same period consumption of fresh vegetables has risen from 171 pounds to 202 pounds (Mintel, *canned fruit and vegetables*, 2003). The rising consumption of fresh vegetables and their year-round availability has partly contributed to the market share reduction for canned vegetables. Besides, imports of processed vegetables have affected the market for canned vegetables. Between 1998 and 2002, imports of these products have increased by 18%. Of these imports, however, the share of canned vegetables is very small, but the product tends to be lower priced than domestic products (Mintel, *canned fruit and vegetables*, 2003).

In terms of new products, there are few new canned vegetables that are currently entering the market. There were 39 new canned vegetable products introduced in the first eleven months of 2004. Most of the new canned vegetables are coming as mixes of a variety of vegetables that can be used as side dishes, pizza tops, and entrees or they can be used as ingredients in casseroles, soups, and stews. There are many products entering the market as mixes of different beans or beans mixed with other vegetables. Some products are coming mixed in sauces.

Canned vegetable manufacturers have also focused on convenience and product packaging. Some canned vegetables are designed to be closer to minimally processed vegetables. There are, for example, canned vegetables that are coming as ready-to-serve products. There are also some canned vegetables that are said to be in an easy-open can. Others claim to be microwaveable in few minutes. Some manufacturers have also started repackaging their products. There are new canned vegetables that are being introduced for sale through specific discount retail stores. For example, Aldi/USA introduced marinated artichokes that are available for sale in its stores. There are also some canned vegetables that claim to be fat free, cholesterol free, high in fiber or rich in vitamins and minerals.

Frozen vegetables

Per capita consumption of frozen vegetables was 80 pounds in 2000, down from 83 pounds in 1996 (Mintel, *canned fruit and vegetables*, 2003). This decline can partly be attributed to the overall increase in the consumption of fresh and minimally processed vegetables. In addition, an increase in away-from-home consumption has negatively affected the market for frozen vegetables.

Retail sales of frozen vegetables reflect this consumption trend. From 1998 to 2003, for example, sales of frozen vegetables have experienced a slight decline at constant 2003 prices. In these years, store brand frozen vegetables have shown better performances than sales of these products overall (Mintel, *store brand foods*, 2003). .

In terms of new product introductions, the category has experienced a moderate growth. There were 99 new products introduced in the first eleven months of 2004, up from 30 in 2000. New products are entering the market as pre-cut, pre steamed, pre boiled or pre cooked and seasoned/spiced mixes of vegetables. Many new frozen vegetables position themselves as vegetable side dishes and salads or as ingredients to be used in soups and prepared meals. There are also some products that are coming in the gourmet vegetable lines. Some products are currently coming in special steam bags designed for microwave ovens, while other products are designed to be heated in a wok or pan on stovetops. Some are coming with recipe ideas on the back of the packages.

Some products claim to be made from the season’s vegetables to attract consumers that look for products that are closer to fresh vegetables. There are thus frozen vegetables that position themselves, for example, as winter or summer vegetables. Other manufacturers try to tie their products with some occasions. For example, Bonduelle/France is to launch a pack of festive star-shaped frozen vegetable patties intended for use as part of special meals particularly around Christmas.

There are some new products aimed at specific demographic groups. Birds eye foods/USA offers frozen vegetables packaged in cartons for kids. They come in the following varieties; macho nacho corn, groovy green beans, crinkly carrots, powerhouse peas, broccoli trees & cheese, and radical sweet corn. Some products are designed to meet special needs of specific ethnic groups. The new products also have a healthy line of extension. For example, there are frozen organic vegetable mixes that are entering the market. These vegetables claim to be grown from organic agriculture without the use of chemicals. Other related products include all natural, low fat, low calorie, preservative free or they contain vitamins and minerals.

Dried vegetables

The market for dried vegetables is very fragmented. New products that are entering the market as plain dried vegetables are very few. Rather this product is used as an ingredient in many other new food products. Therefore the new product data in this section includes both plain dried vegetables and dried vegetable-containing food products that entered the market in recent years. In general, the number of new products in this category has grown from 27 in 1999 to 63 in 2004.

Most of the dried vegetables are coming as mixes of dried vegetable or as a range of freeze-dried vegetables that recover their original shape when boiled or thawed. New dried vegetable-containing products include prepared meals, dry soups, side dishes, spreads, snacks, dairy products, sauces and seasonings, baked items, and baby foods. Of all these products, soups, side dishes and prepared meals appear to be the leading products in terms of the number of products that entered the market in recent years. Dried vegetable containing dips are also on the rise. For example, Au Printemps Gourmet in Canada introduced a sun dried tomato and basil dip mix that can be served with snacks such as chips, pretzels, fresh vegetables, or baked potatoes. Some of the dried vegetable containing products claim to be healthy, natural, cholesterol free, etc. Convenience has also been given some importance in creating these products. There are, for example, some single-serve products.

Vegetable spreads

Although there are no available consumption data, it appears that vegetable spreads are not widely used products by the consumers. Also, the market for these products seems to be very fragmented. Hence, there are no many new vegetable spreads that are entering the global market. There were 27 new products introduced in 2004, up from 17 in 2003.

New products in this category are coming not only as bread spreads but also as mousse, humus, cream, paste, and chip and vegetable dipping. Szegedi Paprika in Hungary introduced a vegetable paste suitable for sandwiches. It is said to be made from fresh vegetables. Also, new under the LM Produktions/Hungary is a kidney beans and vegetable cream spread.

Some products are mixes of vegetables and other food products. For example, Briska in Canada introduced a line of mousse with different mixes; shrimp and vegetable, lobster and dried tomatoes, and salmon and spinach. There are especially many cheese spreads that are coming mixed with a variety of vegetables. Unilever bestfoods/Turkey has launched a spread mix containing pickles, dill, vegetable oil and cheese. There are some premium roasted vegetable dip selections. Roberts dairy/USA, for example, introduced a sour cream dip now available in varieties that include toasted onion and mixed vegetables.

There are also some spreads aimed at children. QP in Japan launched a curry spread with onions, mushrooms, carrots, potatoes and other vegetables with a touch of mayonnaise and apples to make it easily edible for children. Some of the products claim to be cholesterol free, organic or suitable for vegetarians. Many vegetable spreads are entering the market as chilled products in tubes while some others are coming as shelf stable products in jars, tubs, cans, trays or in flexible plastic containers.

Vegetable based sauces and seasonings

Sauces and seasonings are highly diversified category. There are no specific consumer reports available on vegetable based sauces and seasonings. Mintel sauce and seasoning reports include many categories such as pasta sauces, pizza sauces, seasonings, table sauces, condiments, etc. Each category contains a wide variety of products. Mintel, for example, defines condiments to include Mexican sauces (cooking sauce, salsa, taco sauce), ketchup, barbecue, mustard, steak sauce, oriental sauces (soy sauce, teriyaki sauce), hot/cajun sauce, seafood sauce, chili/hot dog sauce, tartar sauce and horseradish sauce (Mintel, *condiments*, 2003). Therefore, sales and consumption trend assessments in this category require careful interpretation and understanding of available data. From 1998 to 2003, overall sales of condiments have increased 1.5% at constant 2003 prices (Mintel, *condiments*, 2003).

Introduction of new vegetable based sauces has experienced a slight increase in recent years. There were 194 products introduced in 2003. With 193 new products in the first eleven months of 2004, the category is expected to see a growth by the end of the year.

New products in this category include salsa made with vegetables; dressings/seasonings that use plenty of vegetables and that can be used for meat or vegetable dishes; sauces to be used for different purposes (e.g., vegetable based pasta/rice sauces/pastes, a curry sauce made with vegetables, instant vegetable mixes and vegetable stock cubes/concentrates for cooking or direct using, vegetable based multipurpose grilling sauces, a range of table sauces, etc.), and a range of pickled and marinated vegetables. There are also gourmet line sauces. For example, Renee's Gourmet in Canada introduced gourmet line vegetable sauces that are said to be great for roasting, grilling, and marinating. Spice hunter/USA introduced herbs and vegetable blends that are said to be suitable seasonings for enhancing gourmet dishes. They are available in roasted red bell pepper, dill salad and basil varieties.

This category also includes many vegetable oils and vinegars for cooking and seasoning. Most of them are said to be natural, cholesterol-free and low in saturated fat. There are also some salsa and sauce products that claim to be organic or all natural.

Some products are intended to be used as substitutes to other products. Superbom in Brazil, for example, introduced a mayonnaise-like vegetable sauce that is said to be cholesterol-free, egg-free, and a 100% vegetable product. Probios in Italy introduced an organic mayonnaise that is said to be 100% vegetable.

Some manufacturers are also introducing vegetable based sauces aimed at the ethnic market. For example, Masterfoods in Greece has introduced a Chinese sauce with ginger and vegetables. S&B Foods in Japan has launched a vegetable curry sauce made from slowly simmered vegetables that replicates the curry from Ethiopia.

Manufacturers are also producing convenient sauces. Most of the sauces and seasonings are coming as shelf stable products in bottles, cans, jars, and flexible plastic containers. There are also frozen and chilled products. Many sauces are ready to serve after heating them in a microwave for a few minutes. Sauces are also available in single packs or in packs for two or three persons.

Vegetable based soups

There are no specific data available on consumption trends for these products. But the overall soup market will provide an indication on future product development and market opportunities for vegetable soup manufacturers.

From 1998 to 2003, the soup market has seen a slight growth in current prices, but the market declined by 1.6% at constant 2003 prices. Most of the decline in recent years came from sales of dried and condensed soups, while sales of ready to serve soups show a slight increase. In general, this trend reflects the difficult position soup manufacturers are currently facing. Soup is one of the traditional sit-down foods that are not most convenient for the present on-the-go consumers (Mintel, *soup*, 2004).

In terms of new product introductions, the vegetable based soup product category has experienced a steady growth in the last six years. There were 179 products in 2003, up from 73 products in 1999. With 183 new products in the first eleven months of 2004, the category is expected to see a growth by the end of the year.

New vegetable-based soup products have been introduced to be used in different forms. Some are developed to be used as a starter or a light meal. Others are coming as products to be used for soup-based recipes.

Some soups are coming as a mixture of vegetables and other food products. These include soups from vegetable mixtures and pasta, meat, cereal or rice or soups in meat broth with vegetable pieces. Others are plain vegetable soups that use plenty of mixed vegetables. These soups in many cases contain lentils/beans and other mixed vegetables. Designed to enter the gourmet soup line, some soup products claim to be made from finest ingredients, best vegetables, or manufacturers used special procedures to prepare the soups.

There are also instant/dried plain or mixed vegetable soups to be made in a cup by adding hot water. For example, Unilever has introduced a pack of instant tomato soup with vegetable mix to be made in a cup by adding hot water. There are even some soups coming tied to occasional events or recommended to be used with other foods and drinks. Heinz/Germany has, for example, introduced a newly reformulated soup "Hochzeitssuppe" (a wedding soup) with fine vegetables and dumplings under the Sonnen Bassermann brand. Buitoni in Italy introduced a vegetable and cereals soup that is recommended to be used with soft red wine. There are also soups recommended for use in summer times.

Some soups have been introduced for sale through specific retail channels. For example, Blount seafood in the U.S. launched seven vegetarian soups to be sold through foodservice operators. There are also a variety of soups developed for sale through retail food and mass merchandise stores such as Wal-Mart, Aldi and Target stores.

Soup flavor and texture are very important in selling soups. So some manufacturers try to develop soups that are said to have the same taste found in restaurant soup kettles or they claim to taste as if homemade. Others, for example, like Campell foods/Germany introduced a new range of soup which is claimed to have been cooked in a very special way to preserve all the valuable nutrients.

Manufacturers have also focused on convenience in developing these products. Most of the soups are coming as shelf stable products in flexible plastic containers or in cartons, cans and tubs. There are also some frozen and chilled soup products. Some of these soup products are microwaveable or “ready to heat and serve”. There are single portion vegetable soups or soups in a pack containing two servings. There are also some soups entering the ethnic market. For example, Campbell introduced a Mexican style chicken tortilla soup that consists of different vegetables including tomato.

Many vegetable-based soup products claim to be all natural, organic, low-calorie, etc. For example, Anke Kruse/USA Organics introduced organic dry soups available in mixed vegetables, tomato and leek, and potato flavors. Others claim to be a natural source of vitamins and dietary fiber including valuable proteins. Some soups are coming as a mix of vegetables and herbs without preservatives and coloring. Some claim to be suitable for vegetarians.

Vegetable containing baked items

Vegetable-containing baked items have seen some growth in recent years. In 2004, there were 63 new products in this category, up from 15 in 1999. Most of the new products are in the cracker sub-category that contains mixes of a variety of vegetables. For example, Albertson’s/USA introduced vegetable crackers that include carrots, onions, celery, tomatoes, and red and green peppers. Ezaki Glico Foods in China introduced vegetable crackers with leek, green vegetables and spinach. There are also crackers that have positioned themselves as products suitable for vegetarians. Other vegetable containing baked items are in the biscuit and bread sub-category where vegetables are used as baking ingredients and mixes.

There are also some gourmet line products. Salem baking/USA introduced savory wine biscuits that complement popular beverages. They are available in different varieties including sun-dried tomato, grilled vegetables, black pepper fennel, and fig and balsamic vinegar.

Some products are designed for specific demographic groups. Kuan Sheng food/Taiwan produced a vitamin and mineral enriched vegetable flavored crackers, especially designed for teenagers and older people. There are also some vegetable-containing baked products that have been introduced for the ethnic market. For example, Pietercil Resta in Belgium launched a range of vegetable crackers with cassava. They are said to fuse the taste of Africa.

Some products are coming as organic crackers. There are also some vegetable biscuits that claim to be low in sugar or enriched with vitamins and minerals. Most of these products are coming as shelf stable products in cartons or flexible plastic containers. There is also a very small number of frozen and chilled vegetable containing baked products.

Vegetable containing meals

This section covers three types of vegetable containing meals: meal kits, prepared meals, and pizza and pies.

Meal kits comprise food components that are to be assembled to create a complete course of meal including salads and other side dishes. The category was first introduced in the 1970s. These foods were mainly made for stove preparations and their purpose was to help working families by encouraging homemade meal preparation using them as add-ins during cooking (Mintel, *meal kits*, 2004). But through time, tastes, attitudes and behavior towards home cooking have changed and consumers these days are demanding more convenient foods. So, in the late 90s, manufacturers started offering meal kits that have better taste and provide greater convenience in preparation. These new style meal kits were designed to better compete with fast foods and take out or prepared meals. Therefore, they are said to be closer to the quality of take-out and home-prepared foods, and they are designed to be appealing to younger consumers who want to cook food at home (Mintel, *meal kits,* 2004).

Prepared meals are all complete (main course) meals, generally including protein, starch and vegetables. These meals are coming as shelf stable, chilled or frozen meals. The pizza and pie category includes all pizza, pies/tarts, quiche and other related food items ((Mintel, *meal kits*, 2004).

Between 1998 and 2003, retail sales of meal kits have experienced 48% growth at constant 2003 prices. This growth has been attributed to new product introductions and updating the meal kit market (Mintel, *meal kits*, 2004). Also, convenience in packaging might have contributed to the growth in the market for these products.

As regards prepared meals, this report considers two types of products: frozen meals and shelf stable meals. Between 1999 and 2004, frozen meal sales have remained unchanged at constant 2004 prices. This slow growth could in part be attributed to the increased availability of alternative meals from in-store delis and carryout foods from restaurants, and the increased emphasis on consuming healthy meals (Mintel, *frozen meals*, 2004).

Shelf stable meals have also experienced a declining trend in recent years. This is mainly due to the aging of the majority of the decade-old shelf stable products that make up the bulk of the offerings. These products are also faced with steady competitions from other categories on the basis of taste, convenience and suitability to current consumption trends (Mintel, *shelf stable meals*, 2004).

In the case of pizza, the major interest regarding vegetables is pizza toppings and sauces that are mainly made of vegetable ingredients. The overall market for prepared pizza, hence, affects sales of vegetable products that are to be used as toppings and sauces. Prepared pizza products are coming to the market as frozen, refrigerated or shelf stable pizzas. Frozen pizza accounts for over 90% of the sale. From 1998 to 2003, sales of prepared pizza at current prices showed an increase of 22%, while sales at 2003 constant prices declined by 1.5% (Mintel, *pizza*, 2003). Growth was mainly limited due to a decline in sales of refrigerated and shelf-stable pizza segments. In general, the prepared pizza, pizza sauces and pizza kit market is faced with high competition from a range of products including fresh pizzas made in supermarkets and pizzeria pizzas. In recent years, this competition might have led to more pizza products to be sold on sale (Mintel, *pizza*, 2003). In the pizza sauce market, however, sauces that could be used with other food products such as bread, casseroles, meat and pasta, rather than just for making pizza have gained some ground (Mintel, *pizza*, 2003).

In terms of new product introductions, between 1999 and 2004, most of the vegetable containing meal products that entered the market have been within the prepared meal segment. The share of vegetable containing meal kits in terms of new products has been very small. There were 315 vegetable containing prepared meals that entered the market in the first eleven months of 2004. In contrast, only 18 new vegetable containing meal kits and 51 pizza and pie products have been introduced during the same period.

The new vegetable containing meal kits are coming as a blend of vegetables and other food ingredients to be sautéed with or added to other grains like rice or noodle; fish and vegetable mixtures for making soups; ready to roll mixed vegetable tortillas; mixed vegetables and meat quesadillas; meat and vegetable filled dumplings, etc. Some are instant vegetable and meat packs that can directly be added just in hot water for direct consumption. Most meal kits are coming in cartons or flexible plastic containers as shelf stable products, while others are coming as products that need to be chilled or frozen.

In the case of prepared meals, most of the new products claim to be fresh with a variety of flavors and blends that include mixes of vegetables and other food items (e.g., frozen vegetables and rice mix, meat/fish/noodle and vegetable mixes in different sauces, vegetable lasagna, a range of vegetable mix bakes, vegetable sandwiches, etc.). There are also some fresh vegetable salads that are coming as whole meal replacements. These include fresh or ready to serve colorful vegetable salads with different sauces and dressings (e.g. herbal-yogurt sauce, garlic sauce, green salad with a mix of crab and vegetables, chicken noodle salad with oriental style vegetables, Greek salad, etc.). Some of the prepared meals claim to have healthier appeals to the consumer. There are thus meals with organic vegetables. Others are prepared for vegetarians.

Convenience has also been one area that has been given due attention in introducing new products. There are, for example, prepared meals that come in single-serve packages and are designed to be a complete meal for one person. There are also many meals and vegetable stews that require just few minutes to heat or they are ready to eat once boiling water has been added to them. Some meals can also be microweaved without opening the package. For example, new under the Hotcan brand in UK are self-heating canned meals comprising vegetable chili, sausages and wedges. Ethnic gourmet foods/USA introduced gourmet vegetable korma, a mixture of fresh vegetables sautéed with fresh ginger, garlic, onions, tomatoes, raisins and cashews, with seasoned, long-grain brown rice. Birds eye foods in Ireland introduced steam fresh rice vegetables in a light yogurt dressing, sealed into a special steamer bag that is claimed to keep-in the vegetables' natural goodness.

One of the significant features in this category is the introduction of new products that are aimed at different ethnic groups. There are different Asian, Mediterranean, African and Latino type foods that have been introduced in recent years. For example, M&M meat shops in Canada recently introduced Asian style meal kits that contain rice, and mixed vegetables. Williams foods /USA introduced a mix of vegetables and rice with honey-flavored sauce that is claimed to be authentic oriental meal. Picard in France has recently launched a range of African microwaveable meals that mainly include different vegetables and chicken. Mark & Spencer in UK introduced a Latino meal that includes lime marinated vegetables and Brazilian style spicy potatoes. These introductions in effect allowed to expand the flavor profiles of complete meals beyond the traditional local or regional meals.

New pizza and pie products are dominating the pizza and pie subcategory. There are a wide variety of prepared pizzas that are entering the market with different vegetable mix toppings. Some are claimed to be restaurant style pizzas topped with different roasted vegetables and cheese. In the case of pies, some of the products claim to be designed for the gourmet market. For example, Tastee in Australia introduced a gourmet pie range containing microweavable pies filled with vegetables and pieces of lean beef in a light pastry. Other related products include burritos/tortillas flavored and filled with different vegetables, pancake slices filled with vegetables, ready to eat pastry pasties that contain mixed vegetable fillings, and vegetable quiche. There are also a range of organic vegetarian pizzas and pies made with organic vegetables, meats and flours.

Vegetable containing processed fish and meat meal

In terms of new products, this category has seen some growth. There were 102 new products introduced in 2004, up from 24 in 1999. The new products mainly include two types of processed vegetable containing meals. First, there are processed meat and fish products that contain vegetable ingredients. These are, for example, different processed fish/meat products with vegetable mixes or fish/meat and vegetable patties. Ajinomoto Frozen foods in Japan introduced calamari and vegetable cutlets that are microwaveable. Herta in Austria introduced a poultry and vegetable sausage. Abdelen in Germany has introduced “Gemüse-Frikadellen”, meatballs filled with vegetables which are said to have been cooked without fat and they can be eaten hot or cold. Addressing the growing demand for vegetarian and health-conscious meat-free food choices, some manufacturers like Sysco/USA have introduced meat alternatives to food service operators. The foods are ground beef alternatives made based on a blend of vegetable protein concentrates and chili flavors.

Second, there are processed products that primarily contain vegetables. These products position themselves as healthy products. For example, Cia Brasileira de Distribuição in Brazil, introduced vegetable hamburgers that claim to be rich in fiber. This new burgers are said to be free of artificial colors and preservatives, and contain no animal meat. It also introduced new vegetable hot dog that is said to be free of animal meat, preservatives and artificial coloring. There are vegetable meatballs that are rich in fiber, free of preservatives and artificial coloring, and free of animal meat. Asda in UK launched vegetable & nut cutlets - seasoned blend of mixed vegetables with peanuts, hazelnuts and almonds.

Most of the vegetable containing processed meat and fish products are entering the market as shelf stable products packed in cans, trays, jars, boxes or flexible plastic containers. There are also products that need to be chilled or frozen. Some products are packed in easy-open ring-pull cans. There are products that are microwavable or take little time for baking, frying or cooking. There are also products aimed at specific demographic groups. There are, for example, meat and vegetable mixed burgers that are said to be ideal for children.

Vegetable containing side dishes

There are no specific consumer reports available on vegetable containing side dishes. But reports on the overall side dish market can provide an indication on future consumption trends and market shares of products in this category. According to mintel, the side dish market is segmented into products such as rice mixes, plain rice, baked beans, pasta mixes, potatoes and prepared salads (Mintel, *side dishes*, 2003).

From 1998 to 2003, sales at constant prices have been declining mainly due to aging product lines, a lack of innovation and marketing support, and competition from other convenient foods (Mintel, *side dishes*, 2003). There is, however, some market performance differences among the different side dish products. For example, between 2001 and 2003, sales of rice mixes, baked beans and potatoes and pasta mixes have shown a slight to moderate growth, while sales of plain rice and prepared salad experienced a slight decline. The market for prepared salad declined mainly due to a decline in sales of branded products in this segment resulted from low interest by manufacturers (Mintel, *side dishes*, 2003). In general, the trend indicates the existence of a better market for side dishes made from mixes of different food products including vegetables. This situation has in fact opened a better opportunity for private label products.

In terms of new products, there were 57 new vegetable containing side dish products in the first eleven months of 2004, up from 37 in 1999. Overall there were 289 new products introduced in the last six years.

Many new vegetable containing side dishes are coming as rice/pasta mixed with a variety of vegetables. Different kinds of vegetable stuffed shells and salad kits are also available. Many of the products claim to be suitable for cooking or heating in a microwave for a few minutes. There are also some ethnic-oriented side dishes that are entering the market.

Most of the side dishes are coming in flexible plastic containers, while others appear in cartons, jars, trays or tubes. Shelf stable side dishes are dominating, while some products need to be chilled or refrigerated. Some products claim to be without preservatives, artificial flavors or fat. Others are made from organic ingredients and claim to be suitable for a vegetarian diet. Some vegetable containing side dishes are coming targeting specific demographic segments. For example, Wakodo in Japan launched a soybean and vegetable mix side dish designed for older people. The food can be chewed without teeth.

Vegetable based baby foods and drinks

Sales and consumption trends of baby foods and drinks are primarily affected by the number of babies born each year. In the U.S., the number of births and the fertility rate are slightly on the rise (Mintel, *baby food and drink*, 2004). For example, in 2003, the number of births was up 1.8%. Between 1994 and 2004, baby food and drink sales have grown slightly less than 1% at constant 2003 prices (Mintel, *baby food and drink*, 2004).

In terms of new vegetable based baby foods and drinks, there were 49 new products introduced in 2004, up from 16 in 1999. Products in this category enter the market as plain vegetable foods/drinks/formulations or as mixes of vegetables and other food products such as meat and/or cereals. Many products in this category are age-specific. For example, Nestle/Netherlands has introduced a 100% natural baby food with baby carrots and garden vegetables that is said to be suitable for babies aged four months and over. Golden Circle in New Zealand introduced a baby food from mixed vegetables designed for babies from 4 months. They are products that claim to be free from preservatives, artificial colors and flavors. Some of the products also claim to be organic.

Other vegetable containing food products

This section briefly addresses new product development trends in other vegetable containing product sub-category. There were 157 new vegetable containing dairy products introduced in 2004, up from 39 in 1999. New products in this category are two types. First, vegetables mixed with dairy products. There are some yogurt and milk drink varieties with vegetable flavors, and cream and cheese products that are mixed with vegetables. There are also some milk, yogurt, butter and cream products that are made with a mixture of vegetable fats and oils. Land O' Lakes/USA has introduced a fresh buttery taste spread that contains 60% vegetable oil. Tesco in UK introduced grated mozzarella style cheese substitute, made from skimmed milk and vegetable oil.

Second, there are new vegetable products to be used as a substitute to dairy products. For example, there are 100% vegetable shortenings and 100% vegetable creams. Some of these products claim to be organic or contain no preservative, no cholesterol, etc. Most of the vegetable containing dairy products come as products to be chilled in tubs or in flexible plastic containers. Others come as shelf stable products in bottles, cartons or flexible plastic containers.

Other vegetable containing new products include breakfast cereals that contain vegetables, vegetable based desserts and ice cream products, vegetable containing snacks and bars, and vegetable confectioneries. There are even many pet foods that are made from vegetables. This report will not address details of these products.

Future product development and market opportunities

This section will briefly examine and summarize future new product development and market opportunities that are potentially available for growers, shippers, manufacturers, wholesalers and retailers of different products within the vegetable sector. The section will have four major parts. Part 1 will deal with future product development opportunities that are identified based on consumption trends and market drivers. Here, opportunities in product categories are ranked by major market drivers such as wellness, indulgence, convenience, ethnicity, value and demographic changes. Part 2 will briefly present future opportunities to raise sales through different retail market channels. The third part will focus on opportunities in branding and sales of private label and specialty products. Finally, a brief description will be presented on the effects of these new opportunities on different production practices.

Opportunities in part 1 and 2 are ranked as broad, selective and limited (matrix 1 and 2). A broad opportunity represents the existence of a high potential to raise gains from sales by introducing new products in this specific market segment or by using the specific retail market channel. Opportunities are selective, if the potential to raise gains are dependent on just part of the broader market segment or if the retail channel does not provide broad opportunities to distribute the product. Limited opportunities reflect low probabilities of raising sales in the specific market segments or by selling the product through the specific market channel. This may be due to a dying market segment or the retail channel's limited capacity or interest to carry the product. But "limited" does not mean that there are no opportunities at all. It only reflects the existence of a range of constraints to expand sales in this market segment or through this channel.

Matrix 1: Positioning product development opportunities by market drivers

	Wellness	Indulgence	Convenience	Ethnicity	Value	Demographic structure
Fresh & minimally processed vegetables	Broad	Broad	Broad	Broad	Selective	Broad
Vegetable juice & juice drinks	Broad	Selective	Broad	Selective	Selective	Selective
Canned vegetables	Selective	Selective	Selective	Selective	Selective	Selective
Frozen vegetables	Selective	Selective	Selective	Selective	Selective	Selective
Dried vegetables	Selective	Selective	Selective	Selective	Limited	Selective
Vegetable spreads	Selective	Broad	Broad	Limited	Selective	Limited
Vegetable based sauces and seasonings	Selective	Broad	Broad	Broad	Selective	Selective
Vegetable based soups	Broad	Broad	Selective	Broad	Selective	Selective
Vegetable containing baked items	Selective	Broad	Broad	Selective	Limited	Broad
Vegetable containing meals	Selective	Broad	Broad	Broad	Selective	Limited
Vegetable containing processed fish & meat meals	Selective	Selective	Selective	Selective	Limited	Selective
Vegetable containing side dishes	Selective	Selective	Broad	Selective	Selective	Selective
Vegetable based baby foods & drinks	Selective	Selective	Selective	Broad	Limited	Selective
Other vegetable-containing products	Varies	varies	varies	Varies	Varies	varies

Opportunities in new product development

Fresh and minimally processed vegetables – Broad Opportunities:

Vegetables, in particular salads, are sources of a number of minerals, provide needed fiber, and are low in fat, calories, and sodium (Mintel, *bagged salad and salad dressings*, 2004). Health and diet conscious consumers will thus continue to be core consumers of these products. Beyond this consumer group, indulgent consumers will continue to add vegetables as salads, side dishes or as ingredients in prepared meals on their plates. Therefore, excluding potatoes, fresh and minimally processed vegetable manufacturers will have broad opportunities to raise sales from these products in the wellness and indulgence market segment. One significant issue that needs to be addressed here is that, due to the availability of a wide variety of vegetable/salad mixes in supermarkets and through food service operators, consumers currently are becoming more sophisticated in their vegetable/salad mix choices. So, manufacturers' benefits would be high from vegetable products that contain complex and colorful blends that incorporate a wide variety of vegetables/salad mixes and flavors.

Convenience and packaging innovations would also provide broad opportunities for fresh and minimally processed vegetable manufacturers. There is no doubt that introduction of pre-washed, pre-cut or pre-cooked vegetables has made the product more convenient for the consumer and contributed to increased sales in recent years. Product innovation that allows vegetables to have shelf stability is extending beyond lettuce to pre-cut onions, peppers, and other vegetables. It has also extended to spinach, which resulted in a significant increase of per capita consumption of spinach in recent years (Mintel, *bagged salad and salad dressings*, 2004). In the future, for example, all-in-one salad kits or vegetables will be appealing to many consumers that lack the time to prepare foods.

Product innovation in salad dressings is one other important factor that will affect the market for salads. There are a wide variety of new salad dressings that are now available on the market. From 1998 to 2003, sales increased by 18% at current prices. Salad dressing manufacturers have mainly focused on variety and packaging. New products are coming in different packaging options that include glasses, plastics, squeezable or pourable. Many salad products are coming bundled with salad dressings in the same package (Mintel, *bagged salad and salad dressings*, 2004). There are also healthy versions of dressings that are low fat, low calorie, etc. Therefore, in the future, bundling of a variety of salad dressings with different vegetable/salad products will make the product more convenient and appealing to the consumer. One future challenge for manufacturers of these products will be the competition from alternative products such as olive oil and vinegar. There are currently some consumers that are turning to olive oil and vinegar instead of salad dressings.

As consumers continue to lead a healthy lifestyle and improve their dietary awareness, manufacturers will continue to have broad opportunities in selling their products in all ethnic and demographic market segments. But gains in these market segments will be high, if manufacturers create products that meet demands by different consumer groups in these market segments. For example, Mintel consumer survey report indicates that younger consumers are less likely than their older counterparts to use some of the basic salad ingredients such as iceberg lettuce. On the other hand, younger consumers have a great interest for convenience-oriented salads (e.g., all-in-one salad kits) (Mintel, *bagged salad and salad dressings*, 2004). This situation suggests the existence of high market for these products, if manufacturers continue to introduce packaging innovations that are appealing to different consumer groups.

On the other hand, as consumers continue to show their willingness to pay a premium price for convenience and quality, and retailers become selective in having products that move best in their market, gains from low-priced bulk vegetable products will not be high.

In the long term, vegetable growing and packaging technology may be critical to remain competitive in the fresh vegetable industry. For example, Canada's growing hydroponics industry for products such as butter lettuce as a ready-to-eat salad is creating new competition areas in this type of product (Mintel, *bagged salad and salad dressings,* 2004).

In general, **the rising demand for healthy vegetarian foods and the product's appeal to a wide variety of ethnic and demographic groups provide broad product development opportunities** for individual fresh and minimally processed vegetable suppliers and packers.

Vegetable juices and juice drinks – Selective opportunities with some broad opportunities; Although vegetable juices have currently high competition with other healthy drinks including bottled water and fruit juices, they will continue to be considered a healthy beverage. With less sugar and calorie content, they are even in a better position to compete with fruit juice drinks. So, wellness will continue to be the primary driving force that provides broad opportunities to increase sales from these products. In this regard, one significant product innovation area manufacturers can aggressively pursue will be the development of new products/line extensions that can better compete against healthier water drinks and fill the gap by encouraging all day consumption.

If manufacturers continue to focus on variety and flavor, these drinks will also have better acceptance by many consumers as indulgent drinks. But, currently, due to the availability of broad non-alcoholic beverage choices, manufacturers will have selective opportunities to raise sales in the indulgence market segment.

Convenience and packaging innovation will be other areas, manufacturers of vegetable juice and juice drinks need to focus on. Most of the current new products appear in traditional and old-fashioned packages and containers that do not match with the present consumers' lifestyle. Future packaging innovations should thus play an important role in the introduction of products that are convenient for consumers in different market segments (e.g., school children, different ethnic groups or for on-the-go lifestyles). This could include packaging that is easier to store, to carry, to open, or to chill boxes, bottles and other containers. More single-serve packaging will allow the product to better compete with other non-alcoholic beverages for the consumer who wants to grab this drink and go. These improvements would be key to increase sales for the indulgent consumer.

The ethnic market would provide selective opportunities for manufacturers. According to Mintel, for example, immigrants and Hispanics are more likely than the general population to drink vegetable juices (Mintel, *Hispanics and beverages*, 2003).

Traditionally, because of their strong flavor, these drinks are not favored by children and young consumers. Overall, the older adults seem to drink more vegetable juices than their younger counterparts (Mintel, *beverages, volume 1, the consumer*, 2002). Currently, there are no new vegetable juice drinks that are especially designed for children or young consumers. Despite this situation, however, Mintel reports that households with children are still more likely than without children to consume vegetable juice drinks (Mintel, *Hispanics and beverages*, 2003). Therefore, manufacturers who can introduce new formulations, flavors and packages that meet the preferences of the younger consumer group will have a better opportunity to raise sales.

Value may also have a selective role in raising market shares. Manufacturers who can supply high volume low-priced juices and juice drinks through mass merchandise retail stores may have the ability to raise their sales. But the ongoing high competition among different non-alcoholic beverages may make it difficult to substantially raise gains from these low-price drinks. Consumers who consider vegetable juices and juice drinks as their preferred functional beverages may not see price as the main factor affecting their purchase. These consumers, however, are not purchasing the product in bulk and they are not frequent customers of mass merchandise retail stores.

Overall, **the health benefits of vegetable juice and juice drinks, and growth in consumers' demand for more flavor, variety, and convenience provide selective to broad product development opportunities** for individual manufacturers.

Canned vegetables - Selective opportunities: Consumers are currently increasingly demanding for more freshness, variety and convenience in food products. They are also willing to pay more, if they perceive that the product they purchase meets these demands. This situation has stimulated changes and innovations in new product development in the vegetable sector. There are different kinds of minimally processed vegetables that are currently available on the market. Because of these trends, canned vegetables are currently losing their market shares.

In addition, an increase in away-from-home consumption has affected the market for canned vegetables, which are normally used by a household that prepares meals at home. Also, although some canned vegetables have health benefits, compared to fresh and minimally processed vegetables, these products are perceived as less healthful and less safe or traceable. These situations signal the fact that canned vegetable manufacturers will have selective opportunities in raising gains from canned vegetable sales in the wellness and indulgence market segment. But, manufacturers can still increase sales from those canned vegetables that are closer to fresh and minimally processed vegetables, which can be used as a substitute when the preferred fresh products are not available.

In addition, compared to other vegetable products, canned vegetables are said to be old fashioned and not the most convenient. Packaging innovation (for example, packages that allow to prepare the food in the container they come in) may help manufacturers to attract some convenience-driven customers, but this change may have little impact on the consumer who wants to buy a product that is fresh and be used immediately for consumption without further preparation.

According to the Mintel consumer survey report, Hispanics consume more vegetables than the average consumer (Mintel, *canned fruit and vegetables*, 2003). Therefore, manufacturers like Goya Foods introduced over 30 varieties of canned bean products that are designed for sale in the Hispanic market. Also, some manufacturers carry Hispanic product lines for sale through the food service operators. In the future, canned vegetable manufacturers will have some opportunities in the ethnic market segment, if the new products meet the specific flavor and variety preferences of this consumer group. Older adults and larger households may also continue consuming canned vegetables providing limited product development opportunities. But this market outlet will not be sustainable.

Value would be the single most important market driver that can provide better opportunities for canned vegetable manufacturers that can offer low-price canned vegetables in bulk for sale through discount retail stores.

In general, a **growing consumer demand and preference for product freshness and convenience, and canned vegetables' limited attractiveness to a broad array of consumer groups provide selective product development opportunities** for individual canned vegetable manufacturers.

Frozen vegetable – Selective opportunities: Consumption of frozen vegetables is not growing, although introduction of new products show an increasing trend. This may be due to the fact that frozen vegetables have high competition from fresh and minimally processed vegetables. Consumers these days are increasingly looking for easy ways to make meals or, for health reasons, want to eat more fresh vegetables than processed ones.

The general perception about frozen vegetables is that they are not fresh and convenient. This would continue to limit gains from sales of these products.

Value will remain the single most important market driver that may provide some opportunities for frozen vegetable manufacturers. Even in that case, because of competition for space in retail stores and the product being an item that can not be sold in bulk, the chances are not broad. For many reasons, wellness, indulgence and convenience may provide only selective opportunities to raise sales from these products.

Manufacturers can consider introducing a product/packaging innovation that will allow consumers to eat frozen vegetables without wait and effort. Even with that innovation, the product may not be competitive in the current market, because consumers today have many vegetable product choices that are fresh and convenient, and they generally seem skeptical about the quality of frozen products.

The aging population seems to be the main demographic group that appears to present a market potential for frozen vegetable suppliers. But this market will not be sustainable, unless suppliers are able to penetrate into other market segments. The product also seems to have limited market potential in the ethnic market.

In general, **as consumers continue to look for fresh, healthy and convenient food products, there are just selective product development opportunities for individual frozen vegetable manufacturers**.

Dried vegetables – Selective opportunities: As described in the new product development section, there are few new dried vegetables that entered the market in recent years. Most of the new products are in other food product categories such as soups, side dishes, spreads, snacks, sauces and seasonings, and baked items that used dried vegetables as ingredients in food preparation. Dried vegetables, in general, fit the healthy food qualities that are in growing demand. But, due to a high competition from other vegetable products that are fresh and have better flavor, the category will not open broad sales opportunities for manufacturers in the wellness and indulgence market segment. In addition, for those dried vegetables that are used as ingredients in other foods, market opportunities will probably be determined by factors other than the added-in dried vegetables. Similarly, since these products in plain or added-in form (except some vegetable chips) are not coming as ready to eat products, they will not be considered convenient food items for the present consumer's lifestyles.

Also, these products tend to carry higher prices compared to other dried products including some of the dried fruits. Given the products' significance in healthy food preparations and their potential to create strong flavors, future product innovations that are supported by appropriate market promotion activities would create broad opportunities to raise sales. The vegetable chips and snacks market segment is one other potential area that can provide broad opportunities, especially, if manufacturers focus on creating products that can compete with other chips and snacks on the market and be perceived as healthier alternatives by the consumers.

Manufacturers have selective opportunities to sell dried vegetables to different ethnic and demographic groups. Consumers in these market segments would primarily use these products as ingredients for cooking. Thus, dried vegetable products that come with different recipe ideas, and new food cooking and baking concepts would benefit from sales in this market. Young adults and high income groups who want to cook food at home and are willing to pay more for dried vegetables would be potential future consumers for these products.

Dried vegetable manufacturers who offer low-price products can raise their sales, if they are able to sell these products in bulk or in large family style packaging through mass merchandise or food retail stores. But gains from this market will be very limited, since, with the current consumption trend, the use of these product items in large quantities is very limited.

In general, **manufacturers will have selective product development opportunities as dried vegetables continue to have fragmented market outlets and limited use for the consumer.**

Vegetable Spreads – Selective opportunities: Due to lack of data on consumption trends and sales, it is not so easy to identify product development opportunities in this category. But, it is still possible to make some arguments based on the overall consumption trends in the spread category.

Given the variety choices and strong flavors of these products that meet many consumers' demands, indulgence will remain to be one of the most important market drivers that provide broad opportunities for vegetable spread manufacturers. Individual manufacturers can thus benefit from product innovations that focus on combination of flavors and texture. As seen in the new product section, vegetable spreads that enter the market with multiple uses will have a better chance of growth. Also, one market segment manufacturers can jump in is the gourmet product line extension, which appears to be currently dominated by imports that serve upscale restaurants and hotels.

Manufacturers will have selective opportunities from new products that address consumers' wellness issues. In general, these products tend to be healthier than fruit spreads that have high sugar content. So, if there is an increased market promotion activity, especially vegetable spreads that are functional and natural will have the potential to benefit from sales. Those manufacturers who can bundle their vegetable spreads with other healthy foods can also raise their market shares.

Convenience is the other market driver that can provide broad opportunities in this category. Many vegetable spreads are currently entering the market in relatively large containers that are not suitable for the convenience-oriented consumer. There are some spreads that are coming in squeezable containers making the product easier to use. Future sales from these products can be increased from single-serve portions that can be taken with breakfast or lunch boxes.

Value as a market driver will have a selective role. Vegetable spreads generally tend to be sold at high prices. But manufacturers can potentially raise gains from volume sales at low-price mass merchandise retail stores. Given the significant presence of brand products in these stores, however, entering this market channel for individual manufacturers will be less easy.

Growth opportunities in the ethnic and demographic market segment appear to be limited. If manufacturers want to raise sales by expanding their customer base, there is a need of reinvigorating the vegetable spread market by focusing more on young consumers. Manufacturers can increase sales in this market segment by introducing new vegetable spreads that are appealing to the young consumer who is usually interested in trying new products. Adding some exotic vegetables or new package designs aimed at this market segment may increase sales.

One of the biggest challenges for vegetable spreads in the coming years would, however, be competition from fruit spreads and from breakfast foods that are not eaten with sweet spreads. These are primarily breakfast snacks or foods that are ready-to-eat or ready-to-drinks breakfasts (e.g., breakfast juice or yogurt drinks), and their consumption is growing fast.

In sum, **because of its selective appeal to health conscious consumers and the existence of high competition from other indulgent and convenient foods, vegetable spread manufacturers will have selective product development opportunities**.

Vegetable based sauces and seasonings– Selective to broad opportunities: Indulgence will be the leading market driver that provides broad market opportunities for manufacturers of these products. Currently, consumers are becoming more interested in a variety and flavor. Manufacturers that introduce products with a variety of flavors will thus have better chances to raise gains from sales. Also, manufacturers can raise sales by expanding the premium or gourmet line of sauces. For example, sauces and seasonings that can be infused with liquor to provide more depth and variety or those sauces with exotic and unexpected flavor combinations will be important to indulgent consumers (Mintel, *condiments*, 2003).

In addition, healthy sauces and seasonings will continue to have demand from consumers who have health and diet concerns. However, since these sauces and seasonings are used in a limited amount to enhance food flavors, future opportunities to raise sales in this market segment will remain to be selective. In the future, this market segment could, however, provide a broad opportunity, if manufacturers offer sauces and seasonings that meet the flavor preferences of a broader consumer group.

Convenience and packaging will also influence future market growth for vegetable based sauces and seasonings. Products that come in squeezable plastic containers or single-serve sauce products designed for individual persons will help increase sales.

In the U.S., the growing ethnic cuisines have inspired the use of different spicy sauces that are exotic and have a variety of flavor. In the future, the growing Hispanic and Asian population, which traditionally consumes different vegetable based salsas and sauces will provide broad opportunities for manufacturers of these products. Especially vegetable sauces with Mexican and oriental flavors will benefit from this expanding market segment.

Manufacturers of vegetable sauces and seasonings have selective opportunities to raise sales in some demographic groups. For example, according to Mintel, large households with children may remain the core target consumer group for several sauces and seasoning products such as ketchup, mustard, and barbecue sauce (Mintel, *condiments*, 2003).

With the growing number of private label sauce products that are entering the market, manufacturers who can offer these products in bulk at discount prices will have selective opportunities to raise their market shares.

One important factor that limits future market growth in vegetable sauce and seasoning products is that the current consumers are increasingly lacking both the time and skill to prepare meals from scratch, which ultimately limits consumption of sauces and seasonings that are made for home consumption. But those manufacturers who can bundle their sauces and seasonings with prepared meals and carry out foods will likely increase their gains from sales.

Overall, **the growing demand for variety, convenience and interest for ethnic food flavors among the general population will provide broad opportunities for individual sauce and seasoning product manufacturers, while opportunities in other market segments remain selective.**

Vegetable based soups – Selective to broad opportunities: There is no doubt that some soup products are high in fats, calories, etc. But recent trends in new product development indicate that most of the vegetable based soups have positioned themselves as healthy and functional foods with added nutritional ingredients such as herbs, vitamins and minerals. There are also organic or all natural vegetable soups that are increasingly entering the market. Thus, wellness will be one of the most significant market drivers that continue to provide broad opportunities for manufacturers of vegetable based soups.

Indulgence will also play a significant role in raising sales from soup products. Results from Mintel consumer survey indicate taste to be the major factor consumers consider when purchasing a specific soup product (Mintel, *soup*, 2004). So, manufacturers have broad opportunities to raise sales from vegetable based soups, if they are able to offer soups with a variety of flavors that appeal to different consumer groups. Manufacturers can also gain from sales of gourmet type soups that have great taste and quality to be used as an alternative to home cooked soups that are made from scratch. Other opportunities include the use of high quality vegetable based soups and broths as an ingredient for gourmet recipes. Since making such ingredients from scratch takes a lot of time, this product will especially be appealing to home cookers and restaurants that have a time concern in cooking. Still, another opportunity for manufacturers is to cross-merchandise soups with other products such as crackers, breads or other foods or general merchandise items such as soup-pots and spoons.

Convenience in soup manufacturing will also play a significant role in attracting consumers. Given the fact that even the most convenient ready to eat soups still need to be heated, they may not be able to attract many convenience-oriented consumers who want to grab their food and go. But there are still many consumers that tend to prefer to eat several sit-down smaller meals through out the day than having two or three large complete or whole meals a day. Since soup is one of the “light” foods that can be consumed in a variety of meal occasions, this trend may help growth in the soup market.

In order to improve portability of the product, however, future product and packaging innovations that focus on making vegetable based soups a "grab and go" item will be very critical to raise sales in this category. Most of the new soup products are currently coming in flexible plastic bags. In the future, small size containers that are resealable and avoid the use of can openers, bowls, spoons and other utensils may be more appealing to smaller households and individual consumers. Also, dual-compartment packaging systems that contain, for example, instant soup with added ingredients could be one other area of development manufacturers need to consider (Mintel, *soup*, 2004). New vegetable based soups and formulations that meet flavor demands of different ethnic groups may also provide broad market opportunities. There are currently branded and private label soup products that are available at low prices in retail stores. This indicates the existence of relatively high competition in the soup market. Therefore, gains from selling high volume low price soup products would remain selective.

This product category will also have selective opportunities in certain demographic market segments. However, although these days soup preparation is becoming easier, young consumers and small households still may not have the time and experience to cook meal at home, which will limit the use of soup by this group. Manufacturers can still increase sales in this group through different approaches including different market promotion activities and by using soup-related recipes that can be attached to soup packages. Soup sales (mainly family-size packages) will continue to benefit from large households who will be using soup as an alternative to home cooking that requires much time.

One challenge for the soup manufacturers will be the image of the product as a seasonal product. For many consumers, soup appears to be a winter food. Manufacturers, in this regard, may need to make concerted efforts to promote sales in other seasons of the year. As discussed in the new product section, for example, there are some new soup products that are currently entering the market as summer soups.

In sum, **the trend towards eating smaller meals throughout the day and an increasing demand for variety, flavor and healthy foods will provide broad opportunities for vegetable based soup manufacturers.**

Vegetable containing baked items – Broad opportunities with some selective opportunities: This category is dominated by vegetable containing crackers. Many consumers in the general population buy crackers. As in other food categories, health conscious consumers will be looking for healthier cracker types. In this regard, vegetable crackers seem to be well positioned to benefit from sales to this consumer group. But most of the crackers, in general, may belong to the processed food category that contains trans fats, which are linked with high cholesterol. The low-carb trend will also have a negative impact to attract consumers with health and diet concerns. Therefore, vegetable crackers that contain trans fats may not have broad market opportunities in the wellness segment. However, manufacturers who want to expand the organic product line or create products that are fortified with vitamins and minerals will have better opportunities to raise their market shares in this market segment.

On the other hand, crackers are important snack items for many consumers. As a ready-to-eat food item, they fit into the present consumers' lifestyles. Therefore, if manufacturers focus on varieties and flavors, indulgence will provide broad opportunities for these products. Crackers are not only topped with cheese or meat, but many consumers crumble them into soups, stews and chilies (Mintel, *crackers*, 2003). So, the creation of multipurpose crackers and cross-merchandising or cross-promotion of these items with other products may help manufacturers to raise sales.

Convenience is the other driving force that can expand the market for vegetable containing crackers. Manufacturers who can make the product a more convenient snack by making it more portable or by introducing single-serve products will have broad opportunities to raise sales. Consumers normally buy smaller size of such snack foods to eat on the go or at work places. The market share of larger size crackers or bulk products that may be purchased to eat at home or to serve when entertaining will not be high. Therefore, manufacturers will have limited opportunities to raise gains from volume-sales of low-priced cracker products.

Future sales growth from crackers in the ethnic market will depend on manufacturers' ability to develop flavors and varieties that are appealing to this consumer group. Therefore, currently this market segment may not provide broad opportunities for manufacturers.

However, manufacturers have broad opportunities to raise sales among all population segments. Although there are differences in the type of products that are purchased, consumers at all ages buy crackers. Older consumers have, for example, an established habit of purchasing crackers. Also, younger consumers buy crackers, but they may have different preferences. For example, younger children prefer cheese-flavored crackers (Mintel, *crackers*, 2003). Therefore, if manufacturers focus on product innovations that can help to create a variety of vegetable containing crackers to meet different demands, they can have broad opportunities to raise sales from these products. In addition, the category may benefit from families that have concerns about their children's health and diet. These families try to keep consumption of sweet products to a minimum by switching to healthy substitutes that include crackers.

Overall, **the increasing demand for relatively healthy and convenient snacks, and the product's ability to fit into the present consumers' lifestyles would provide broad opportunities for manufacturers of vegetable containing baked items**.

Vegetable-containing meals – Broad to selective opportunities: Indulgence, convenience and ethnicity will provide broad opportunities for vegetable containing meals. Flavor, quality, texture and ingredient will continue to be the leading factors in determining sales growth from these products. Thus, there is a broad opportunity for vegetable containing food manufacturers that focus on the creation of shelf stable comfort foods that provide variety and flavor.

The addition of vegetables in these foods will also enable manufacturers to compete with alternatives by conveying unique product benefits. As opposed to older generation meals, the new ones that incorporate vegetables have more nutritional values attracting consumers leaning towards the consumption of healthy foods. For example, increased sales of vegetarian pizzas, organic pizzas, and calorie-control pizzas are evidences of consumer interest in healthier pizza options (Mintel, *pizza*, 2003). Despite this situation, however, vegetable containing meal manufacturers will have selective opportunities in the wellness market segment. First, although these meals tend to be healthier than non-vegetable meals, still, they may not be fully accepted by consumers that have health and diet concerns. Second, in some of the products like frozen meals, there is a general perception that they are not relatively healthy and fresh.

Convenience will be the other market driver that will provide broad opportunities for vegetable-containing meal manufacturers. New meals that are coming simple as heat and eat meals (e.g. foods that are microwaveable and in convenient packaging) will appeal to a broad array of consumers. Complete meals that are ready to eat and have all major ingredients packed together will also be appealing to consumers who do not want to spend more time on cooking foods.

Ethnicity is the other major driving force that would provide broad opportunities for vegetable containing meal manufacturers. As discusses in the new product section, a wide variety of meals are now entering the market with some type of positioning in the ethnic market segment. In this way, more ethnic foods are now becoming mainstream foods. That means, with the growing number of people from a variety of ethnic backgrounds and a continued exposure of the general population to a variety of cultures and new cuisines, future market for these meal products will not be limited to the specific ethnic groups. There is an opportunity that, in the long term, these meals will be widely accepted especially by the young consumers who tend to try different ethnic food products. Since these consumers do not cook much at home, there is a potential to grow sales from vegetable containing meals, if manufacturers meet the variety, flavor, and convenience demands of this consumer group.

Manufacturers in this category will also have some opportunities to raise sales from large-size prepared foods. This market would especially be suitable for meal manufacturers that serve large families. In particular, meals targeted at families with children would benefit, if food combinations appeal to the children's tastes. However, with the growing number of a variety of new products entering the market, the opportunities to raise sales from low-priced bulk meal items will be selective. In addition, despite these product development opportunities, the category will continue to face high competition from food service outlets such as in-store delis, fast food chains and restaurants.

Overall, **flavor, variety, convenience and ethnicity will remain to be the most significant market drivers that can provide broad opportunities for vegetable containing meal manufacturers**.

Vegetable containing processed fish and meat meals – Selective opportunities: In general, future sales growth in vegetable containing processed meat and fish products will depend on the market for meat and fish products. In recent years, per capita consumption of red meat and sea food has shown a slight growth (Mintel, *red meat*, 2004). These food products have primarily benefited from the popularity of Atkins diet. In addition, sales of packaged breakfast and sandwich meats show an increasing trend (Mintel, *packaged breakfast and sandwich meats*, 2002). Due to their vegetable content, vegetable containing processed meals can be considered a healthier alternative to other processed meat products. But since these are processed products, some indulgent and health-conscious consumers who look for fresh and high quality products may not be attracted to them. So, the wellness and indulgence market segment will provide selective opportunities for manufacturers of these products. Those manufacturers who can focus on organic products will have better opportunities to raise sales in the wellness market segment. Also, flavor, variety and easy preparation would help some vegetable containing processed meals (e.g. sausages, patties and meatballs) to better penetrate into the indulgence market.

Convenience will also play a selective role. With an increasing demand for product freshness, even those convenient vegetable containing processed meals may not be able to penetrate the convenience-oriented market. Manufacturers who can focus on flavors and varieties that meet the demand by different ethnic groups will also have selective opportunities to raise sales from their products. Processed and packaged meat products are generally less expensive than fresh products. But these products are faced with high competition from imported products. Therefore, value would provide limited opportunities in raising sales in this product category. In the demographic market segment, large families and older consumers tend to consum more processed foods than their younger counterparts, providing selective opportunities for manufacturers.

In general, **due to an increasing demand for food products that are fresh and healthier, vegetable containing processed fish and meat manufacturers will have selective opportunities to raise gains from sales of these products**.

Vegetable-containing side dishes – Selective opportunities: Many traditional side dishes are perceived by consumers as old fashioned and unattractive. These products have been on market for some decades, while consumers' tastes and preferences have been steadily changing demanding more convenience and variety. Therefore, new products are currently coming using different mixes of vegetables, herbs and spices that are appealing to the tastes of the present consumer. In this regard, manufacturers of vegetable-containing side dishes with different flavors, mixes and ingredients will have better product development opportunities in the wellness and indulgence market segment.

Manufacturers looking for broad opportunities in selling vegetable containing side dishes must primarily consider convenience that includes factors such as ease of making, packaging convenience, portion size control, storage, and speed of making. The older side dishes have normally been developed for large family sizes. Given the downward trend in the U.S. household size and the current food consumption trend, manufacturers can increase gains from sales of small size side dishes designed for one- or two-person households. In addition, benefits will be high from side dishes that may be eaten informally more like snacks or as a standalone meal without the main course. These products will make the product more competitive with other meals.

The ethnic market is another segment that provides selective opportunities for vegetable containing side dish manufacturers. Growth in this market segment will depend on the development of side dishes that meet the distinct food and flavor preferences of the different ethnic groups. One significant area manufacturers need to consider is the eating habits of the young consumer groups in each ethnic group. Since food habits tend to be developed early and follow people as they age, side dishes that appeal successfully to these groups may have broader opportunities of growth in the future (Mintel, *side dishes*, 2003).

There are also selective opportunities for manufacturers in the demographic market segment. Due to their established experience with the food, older consumers may have higher preference to use vegetable side dishes than younger consumers. Some side dishes may also appeal to young consumers, if they are convenient and require little time for preparation. Larger households that cook food at home may also tend to buy more side dishes than their smaller counterparts. But the acceptance of these products by a specific consumer group will depend on the type of flavor, ingredients and mixes manufacturers use in developing the product.

Side dishes, in general, are lower-profile food products that are sold at lower prices. These products have been benefiting until now from selling large volumes at lower prices to lower income households in supermarkets and mass merchandise stores. But, things may not be the same for vegetable-containing side dishes. These products will probably have more access to high-income households who like the taste and who can afford to buy premium varieties, but who are not bulk buyers. Therefore, value would provide selective opportunities to raise sales from these products. Despite these opportunities, however, the vegetable containing side dish category would continue to face high competition from other side dishes and complete meal offerings. Overall, **due to high competition from complete meals and other convenient foods, the vegetable-containing side dish category may provide selective product development opportunities for manufacturers**.

Vegetable based baby foods and drinks – Selective opportunities: The baby food and drink market is restricted by a finite period of use, making it difficult to expand sales from this product. In most cases, after age one, parents start to transition their child to regular food and drink (Mintel, *baby food drink,* 2004). So, in general, manufacturers of these products have selective product development opportunities. Many parents are currently focusing on baby foods and drinks that are healthier. Manufacturers that can sell baby foods and drinks that meet the dietary needs and are high in nutritional values and developmental enhancements will have better opportunities to raise sales from their products. In this regard, organic baby food and drink would be a key factor to raise sales. Similarly, since many parents would still like to see more baby food and drink varieties, the indulgence market would also provide selective opportunities for manufacturers. One other most important area manufacturers need to focus is the development of baby foods and drinks that can be used by babies beyond their first year. This would increase the market's longevity and help manufacturers to raise sales from an extended use of this product attracting those parents who want to purchase the same type of product for their older babies.

Convenience plays a significant role in the baby food and drink market. Given the present hectic lifestyles and workloads many parents have, the need for convenient baby food products is high (Mintel, *baby food and drink*, 2004)). Hence, products that are easy to mix, easily portable, contain complete meals, with microwaveable packaging, ready-to-eat, shelf-stable, etc. would benefit manufacturers to raise sales from these products.

As origin has a direct influence on child-rearing habits, ethnicity is one potential market driver that can provide broad opportunities for the baby food and drink manufacturers. There are ethnic groups that tend to be highly focused on family especially on raising children (e.g., Hispanics) (Mintel, *baby food and drink*, 2004). By continuing to purchase baby foods and drinks for a longer period of time, this group tends to have the perception that it is offering babies better quality food and drink. Manufacturers selling baby foods and drinks in this market need to focus on the number of servings and the type and flavor of foods and drinks the consumers use for their babies. Appropriate market promotion activities would help facilitate better sales and establish long-term and loyal customer base in this market segment. Parents purchasing baby foods and drinks are by and large brand loyal customers associating the brand with the better nutrition it has for their child (Mintel, *baby food and drink*, 2004). They are also likely to pay the premium to continue using the specific product of their choice. Therefore, manufacturers who focus on low-price baby foods and drinks will have just limited opportunities to raise gains from volume sales.

In sum, **due to the limited nature of the market for this product, manufacturers will have selective product development opportunities**.

Opportunities within the retail market channel

Table 2 shows retail sales and growth rates for selected vegetable products that have been discussed in the previous section. In general, significant growth rates are observed for products including fresh-cut vegetables and vegetable spreads. Most of the other products have experienced some growth, but not higher than the annual inflation rate. This in effect indicates the decline in sales from these products through the mainstream retail channels. Coupled with the new product development and consumption trend, the sales data will indicate the level of potential market opportunities for the different product categories.

Table 2: Sales and growth rates for selected vegetable products in selected channels – 2003 estimate

	Retail *		Mass merchandise		Food service**		Industrial***	
Product	Sales ($M)	Growth rate (%)	Sales ($M)	Growth rate (%)	Sales ($M)	Growth rate (%)	Sales ($M)	Growth rate (%)
Fresh-cut vegetables[1]	3,485.4	12.0	418	14.0	2,028.0	8.0	N/A	N/A
Vegetable juices[2]	509.0	2.4	N/A	N/A	N/A	N/A	N/A	N/A
Canned vegetables	3,275.0	2.0	N/A	N/A	377.1	-2.0	N/A	N/A
Frozen vegetables	3,700.0	2.0	N/A	N/A	1,242.0	2.0	390.00	1.0%
Dried vegetables[3]	1,000.0	-1.0	305.0	1.0	223.0	-3.0	610.00	0.6%
Vegetable spreads	102.8	15.6	36.0	3.0	16.0	2.2	N/A	N/A
Vegetable sauces & seasonings	23.3	0.2	15.0	1.0	39.9	2.9	N/A	N/A
Vegetable soups	4,900.0	0.7	N/A	N/A	650.0	2.4	N/A	N/A
Vegetable containing processed meals[4]	N/A	N/A	N/A	N/A	N/A	N/A	445.00	0.0%
Vegetable side dishes[5]	N/A	N/A	N/A	N/A	58.3	1.0%	98.00	1.0%
Vegetable baby foods	301.5	-0.8%	N/A	N/A	N/A	N/A	N/A	N/A

N/A: Not Available; * Supermarkets & others excluding Mass merchandise. ** Operator estimate; ** Estimate; [1] Includes bagged lettuce, dry bagged salads, vegetables and other pre-packaged salads; [2] Including tomato juice; [3] In food service channel, primarily dried potatoes; [4] Sales of Vegetables going into meals; [5] Sales of Vegetables going into side dishes

Source: The Hale Group.

Matrix 2 presents a summary of opportunities for manufacturers of different vegetable products to sell their products through different retail market outlets.

Matrix 2: Positioning opportunities by retail market channel

	Supermarkets	General retail/Wal-Mart	Specialty retail	Specialty food retail	Broad food service
Fresh and minimally processed vegetables	Broad	Selective	Selective	Selective	Broad
Vegetable juice and juice drinks	Broad	Selective	Selective	Selective	Selective
Canned vegetables	Selective	Broad	Limited	Limited	Selective
Frozen vegetables	Selective	Selective	Limited	Limited	Selective
Dried vegetables	Broad	Selective	Selective	Limited	Selective
Vegetable spreads	Selective	Selective	Selective	Selective	Selective
Vegetable based sauces and seasonings	Broad	Broad	Selective	Selective	Selective
Vegetable based soups	Broad	Broad	Selective	Selective	Broad
Vegetable containing baked items	Broad	Broad	Selective	Selective	Broad
Vegetable containing meals	Broad	Broad	Selective	selective	Limited
Vegetable containing processed fish & meat meals	Broad	Selective	Limited	Limited	Selective
Vegetable containing side dishes	Broad	Selective	Limited	Limited	Limited
Vegetable based baby foods & drinks	Selective	Selective	Limited	Selective	Limited
Other vegetable containing products	varies	varies	varies	varies	varies

Fresh and minimally processed vegetables – Selective market opportunities with some broad market opportunities: Unlike fresh and minimally processed fruits, retail market opportunities for fresh and minimally processed vegetables are not wide spread in all mainstream retail outlets. Part of the problem is the need for refrigerated or chilled shelf spaces for most of these products. For example, although mass merchandisers' sales of these products are expanding, with the ongoing growth in new products, and product mixes and varieties, it is unlikely that these retail stores will continue to expand their shelf spaces to carry an increasing amount of fresh-cut vegetables/bagged salads. These retail stores will rather be selective focusing on low-priced bulk products and on products that do not necessarily require chilled shelf spaces. For the same reason, convenient stores and drug stores will provide only selective market opportunities. Also, in the future, specialty food retailers that primarily focus on the distribution of natural and organic fresh produces may not play a leading role in the distribution of fresh and minimally processed vegetables. These stores are currently losing their market share in fresh produce to supermarkets as a result of increased supply of these products through supermarkets and the products' availability at relatively cheaper prices than in the specialty shops. Consequently, wide ranges of these products are currently available in supermarkets. So, suppliers and packers who want to use these retail channels will just have selective opportunities. They can use these channels for niche products that currently do not have wide spread sales in supermarkets. Due to the above-mentioned reasons, supermarkets will continue to provide broad market opportunities for these products, while mass merchandise stores and specialty retail stores provide selective opportunities.

Manufacturers can also have broad opportunities for selling their products through the broad food service outlets. As consumers are becoming more sophisticated in their food choices and prefer to eat more of healthy foods, food service outlets (e.g., restaurants and fast food chains) that continue to offer variety and sophistication in their fresh and minimally processed vegetables will have high opportunities to expand their market shares. Local farmers' markets can also provide some opportunities to sell these products. With the growing number of consumers who prefer "locally produced fresh foods", fresh and minimally produced vegetables have the potential to be the leading products to benefit from sales through these market outlets.

In sum, **although many food retail stores currently carry fresh and minimally processed vegetable products, future sales growth through the mainstream retail channel will depend on the expansion of refrigerated and chilled shelf spaces in these stores.**

Vegetable juices and juice drinks - Selective market opportunities: Supermarkets will continue to provide broad opportunities for these products. These markets will remain to be the most frequented retail channel for the purchase of non-alcoholic beverages including vegetable juices and juice drinks. But a continuous challenge for these drinks would be the fast growth in new product development that is currently saturating the existing retail channels. In the future, manufacturers of vegetable juice and juice drinks may be required to search for non-traditional distribution outlets within the food service establishments such as restaurants or fast food chains. Also, wider distribution capabilities and market advantages could be achieved, if smaller brands use channels of larger companies that have an established and extensive marketing and distribution network.

The ongoing increase of market share of mass merchandises and convenience retail stores also opens selective opportunities for juice drink manufacturers to increase sales. Mass merchandise retail stores can in particular be the preferred outlets for low-price drinks that are coming in multi-packs. Convenience stores are generally frequented by snackers and young consumers. So, single-serve drinks aimed at young consumers can gain from using this channel.

In sum, **due to the existence of high competition from a wide variety of non-alcoholic beverages that are being sold through different retail market outlets, manufacturers of vegetable juices and juice drinks will have selective opportunities in selling their products.**

Canned vegetables – Selective to limited market opportunities: Low-price food retail stores and mass merchandise retail stores would remain to be the primary channels for products that are coming in bulk. Currently, supermarkets are also significant market outlets for these products. But, with the ongoing challenge for space and the increasing number of new products and varieties coming to supermarkets, canned vegetable manufacturers will have selective opportunities to raise sales through this channel.

There are, however, some other retail market opportunities that can be used to maximize sales from canned vegetables. For example, the home meal replacement (HMR) segment (fully prepared home-style meals by supermarkets) is one of the market segments that show a significant growth. Since these are home-take complete meals that are designed to be used as an alternative meal in fast food restaurants, canned vegetable manufacturers have the opportunity to bundle their products with the HMR manufacturers.

Individual manufacturers can also use different events and activities to sell their products or they can benefit from placing canned vegetables in vending machines, particularly in schools that are starting to ban sales of candy and carbonated beverages. These products, however, need to be in convenient packages and designed to be used directly as snacks or as standalone meals. Internet grocery is the other potential market outlet for canned vegetables. But the chances of success in canned vegetable Internet marketing require packaging innovations that can make product transport easier and affordable. One best alternative in this regard would be, not to market the product alone, but to use it as an ingredient for meal kits that are marketed through the Internet channel. With increasing number of restaurants and food service providers turning to online food marketing, sales of foods and beverages through this channel are expected to grow from the current $5 billion to $19 billion in 2010 (Lansing state journal, 11/14/2004).

In sum, **due to the continuous challenge for space in retail market stores and the increasing number of new products that are fresh and convenient, canned vegetable manufacturers will have selective to limited opportunities to sell their products through the mainstream retail channels**.

Frozen vegetables – Selective market opportunities to limited opportunities: One of the current challenges in retailing frozen products is the high level of competition for space in the freezer section of supermarkets and mass merchandisers. With most of the shelf spaces filled with brand products, frozen vegetable manufacturers will have limited opportunities in raising sales through these channels. So, individual manufacturers who want to continue with the introduction of new frozen vegetable products may need to look for alternative channels such as restaurants and other food service establishments. Mass merchandisers such as Wal-Mart do not seem to have a significant role in the frozen product market. But their market share is increasing and will remain to be potential retail outlets for those manufacturers who can offer low-price products. Lack of space for frozen products will also make it difficult to raise sales through convenience stores and specialty food retail stores. Currently, some of these stores (e.g., drug stores) do not carry frozen vegetables at all (Mintel, *store brand foods*, 2003).

In sum, **because of high competition for spaces in the freezer section of retail stores and the dominance of brand products occupying these spaces, individual frozen vegetable manufacturers will have selective opportunities to sell their products through these channels.**

Dried vegetables – selective market opportunities: The market for these products is very fragmented and their appearance in mainstream retail stores is not wide spread and organized. For example, it appears that supermarkets have not even well established approaches as to where to shelf dried vegetables. Currently the products appear scattered within the food department and consumers find them in different sections including the fresh produce, sauces and seasonings and canned/jarred product sections. Dried vegetables could, in fact, benefit from this multiple positioning in supermarkets. But the overall market does not appear to grow, maybe partly due to lack of in-store promotion and media attention on the health, flavor and convenience benefits of these products.

Overall, supermarkets will provide broad market opportunities for both plain dried vegetables and dried vegetable containing foods. Other market outlets would provide selective opportunities to sell these products. Mass merchandisers will provide selective opportunities for those manufacturers who want to expand sales from low-price bulk products. Convenience stores and drug stores would also provide selective opportunities for manufacturers who want to focus on dried vegetables that come as vegetable chips or dried vegetable snacks for immediate consumption. Wide spread distribution of these products through alternative channels such as local food stores or gas stations can also facilitate growth in sales. The food service outlets can also play an important role, if product innovations continue to raise the importance of dried vegetables as one of the components in restaurant food preparations or as toppings and dessert ingredients. Vending machines would be other market outlets especially suitable for dried vegetables that are designed for sale to young adults and children at school as snack.

Overall, **since the market for the product is fragmented and not well-developed, manufacturers will have selective opportunities to sell this product through the mainstream retail market channels**.

Vegetable spreads - Selective market opportunities: In general, the mainstream retail market channel is currently dominated by brand fruit spread products from large manufacturers and in-store private label products. So, vegetable spread manufacturers may not have a wide spread opportunity to raise sales through these channels. Shelf space allocation is the key problem to sell these products through these channels. The stores would provide priority for branded and selected private label products. Therefore, individual manufacturers have to find alternative market outlets for their products. They can sell their products through local food specialty shops, small local retailers or in farmers' markets. Convenience stores and specialty food retail stores can provide opportunities to sell vegetable spreads that are designed to be convenient (e.g., single-serve spreads that can be used by snackers).

Overall, **due to the existence of many other branded and private label products on the market and with retail stores providing priorities for selected brand products, individual manufacturers of vegetable spreads will have selective retail market outlets to sell their products**.

Vegetable based sauces and seasonings – Selective market opportunities with some broad market opportunities: With an increased shelf space for the product and the availability of feature displays and cross-merchandising opportunities, supermarkets are the leading retail market outlets for sauces and seasonings. Sales are also increasing in mass merchandise retail stores. Therefore, supermarkets and mass merchandise stores will continue to provide broad opportunities for vegetable based sauces and seasonings.

According to mintel, there are also signs of sales growth in convenience stores and drug stores (Mintel, *condiments*, 2003). But these stores still carry a small portion of these products, thus providing selective opportunities for vegetable based sauce and seasoning manufacturers. Other important market outlet for manufacturers would be the retail food service outlet. Manufacturers who can make cross-merchandising or tie their sauces and seasonings with fast food chain operations and restaurants' food preparations will benefit from sales through this market outlet.

Overall, **the continuous introduction of new products and the limitation of shelf spaces in the mainstream retail market channels will allow manufacturers to have selective market opportunities for their products**.

Vegetable containing soups – Broad market opportunities with some selective market opportunities: Although soups are primarily sold through supermarkets, mass merchandise retail stores and convenience stores have also a significant share. But, the market share of convenient stores and drug stores is still very small. Overall, supermarkets and mass merchandise retail stores will continue to provide broad retail market opportunities for soup manufacturers, while the smaller retail outlets provide selective opportunities. Manufacturers could, however, have broad opportunities to sell soups through food retail market channels, if they are able to tie their products with other food items that are offered through market outlet.

In sum, **being a healthy alternative to many other soup types that are available in the mainstream retail stores, vegetable containing soups would have broad market opportunities, if manufacturers are able to develop products that are competitive in terms of convenience, flavor and variety**.

Vegetable containing baked items – Broad market opportunities with some selective market opportunities: Currently, most of the cracker products are sold through the supermarket channel. Sales through mass merchandise stores, convenience stores and drug stores are also increasing. In supermarkets crackers are normally displayed separate from the larger salted snack category, and they are given plenty of shelf spaces (Mintel, *crackers,* 2003). Therefore, supermarkets and mass merchandise retail store continue to be the main retail outlets for vegetable containing crackers.

Since crackers are shelf stable and portable convenient food items, convenience stores and drug stores are well positioned to increase sales to consumers who want to grab the product and go. But, due to the availability of limited shelf spaces in these stores, they provide selective market opportunities for manufacturers. Again here, vegetable containing crackers are products that are suitable for cross-merchandising with other different foods that are sold through fast food chains and restaurants. Therefore, manufacturers who are effective in cross-merchandising and tie their products with other food and snack offerings will have broad opportunities to raise sales through the food service outlets.

In general, **as vegetable containing baked items continue to be competitive in terms of flavor, variety and nutrition, and retail stores and food service outlets improve their cross-merchandising efforts, manufacturers will have broad market opportunities for their products.**

Vegetable-containing meals – Selective to broad market opportunities: Meal kits, prepared meals and pizza are mainly sold through supermarkets and mass merchandise retail channels.

In terms of meal kits, although supermarkets claim to have the highest market share, there is a trend of sales shifting to mass merchandisers, specifically to Wal-Mart. For example, Wal-Mart currently holds about 23% of the meal kits market (Mintel, *meal kits*, 2004). In particular, Wal-Mart sales of shelf stable meal kits are showing a significant increase, partly, because of the shelf stable nature of the product that makes them well suited to the Wal-Mart environment. Convenience stores and drug stores have a tiny share of meal kit sales. Because of their limited shelf space, these stores are more focused on selling meals that are not more complex and do not require anything other than heating. Therefore, overall, supermarkets and mass merchandise stores will continue to be the primary retail market outlets for vegetable containing meal kits.

Similarly, in the case of frozen and shelf stable complete meals, supermarkets and mass merchandise retail stores are the leading outlets for these products. Convenience stores and drug stores have a very limited role. So, manufacturers have broad opportunities to sell these products through supermarkets and mass merchandise stores. Again here, supermarkets have competition with mass merchandisers primarily Wal-Mart. Wal-Mart sales in this area is mainly supported by the availability of a wide selection of shelf stable complete meals that are sold at low-prices making them appealing to low-income shoppers.

In the case of pizza, supermarkets are currently losing their market shares to mass merchandise stores (particularly Wal-Mart) that are offering low-price pizza products. Pizza products are also becoming convenient and increasingly available in convenient stores and drug stores. Given the growing interest in organic and vegetarian food products, manufacturers of these products can benefit from selling their products through these channels. Despite this trend, however, supermarkets and mass merchandise retail stores will continue to be the main retail outlets for pizza.

Overall, **with the ongoing challenge from other convenient, fresh and healthier foods that are entering the market and the competition for shelf spaces in retail stores, vegetable containing meals would provide selective to broad market opportunities for manufacturers.**

Vegetable containing processed fish and meat meals – Limited market opportunities to selective market opportunities: Many processed fish and meat products are currently sold through supermarkets. Since these products are not high volume items and the products require refrigerated shelf spaces, mass merchandisers are generally selective in carrying these type products (Mintel, *packaged breakfast and sandwich meats*, 2002). Convenient stores and drug stores have also very limited cooled spaces to carry these products. In particular, these products do not fit into the profiles of convenient and light foods that are normally sold through these channels. Therefore, supermarkets are the single most important retail market channels that would provide broad market opportunities for manufacturers. In addition, with the increasing number of consumers eating food away from home, manufacturers who can work closely with food retail operators will have selective opportunities to sell their products.

In general, **due to the limited cooled and refrigerated shelf spaces in the mainstream retail market stores and the increasing number of other better quality and convenient products entering these markets, manufacturers of vegetable containing processed meals will have limited to selective market opportunities**.

Vegetable-containing side dishes – Limited market opportunities: Side dishes reach the public almost entirely through supermarkets (Mintel, *side dishes*, 2003). Recent trends show that, unlike other food products, sales through this channel has been increasing, while sales in other retail stores such as mass merchandisers and specialty retail stores (e.g., drug stores) has been declining. This increase has been attributed to the allocation of adequate shelf spaces in supermarkets devoted to side dishes and related foods. On the other hand, mass merchandisers tend to devote less shelf space for side dishes.

Thus, in the future, super markets will continue to provide broad market opportunities for vegetable containing side dishes. Mass merchandise retail stores will, however, continue to provide selective opportunities for low-profile side dishes that are available for sale at low prices. In addition, those manufacturers who can tie their side dishes with other food items available for sale through retail food service outlets may have some opportunities to raise sales from these products. However, since there are other more fresh and convenient products that can be used as side dishes, market opportunities through this channel would remain limited.

With limited shelf spaces and very small offering of side dishes, convenience stores and drug stores will provide limited market opportunities for vegetable containing side dish manufacturers. In addition, specialty retail food stores may not be much interested in expanding space for these products, which can normally be categorized as lower-profile items.

In sum, **as side dishes continue to be low-profile and low-priority food products in the mainstream retail stores, manufacturers would have limited opportunities to sell vegetable containing side dishes.**

Vegetable based baby foods and drinks – Selective market opportunities: Supermarkets are the primary retail outlets for baby foods and drinks. However, sales through this channel are slowing and the channel appears to be saturated. Mass merchandise retail outlets also play a significant role in selling these products. Trying to be appealing to one-stop shoppers, many super stores are opening baby centers offering everything from clothing to baby food (Mintel, *baby food and drink*, 2004). Therefore, supermarkets and mass merchandise retail store continue to be the primary retail outlets for baby foods and drinks. Although sales through other retail outlets such as health food stores and drug stores are growing, because of their limited shelf space, they would continue to provide selective market opportunities. Organic baby foods and drinks would especially benefit from using the health food stores. The role of food service outlets in selling baby foods and drinks will be limited.

Overall, **the slow sales trend in supermarkets and the need for strong market promotion activities to sell these products indicate that manufacturers will have selective opportunities to sell these products through the mainstream retail channel.**

Opportunities in branding and private label products – ***Selective to broad opportunities***

Fresh and minimally processed vegetables: The concept of branded fresh and minimally processed vegetables is relatively new, and currently most branded products are coming from national manufacturers. As a result, these products have not established a strong and loyal consumer base yet. Although it is relatively new, the market share of private label products, however, is growing. For example, between 2001 and 2003, the share of private label bagged salad and salad dressings grew 25% (Mintel, *bagged salad and salad dressings*, 2004). Hence, in the future, individual manufacturers that can offer variety and convenience will have broader opportunities to raise sales from private label products.

One other emerging trend that will help vegetable suppliers and packers is the home meal replacement segment. This category may present a unique product development opportunity especially for those manufacturers who want to bundle their products with supermarkets through co-branding or introducing new package designs to their products.

Vegetable juices and juice drinks: In general, the juice and juice drink market is dominated by brand products. There are also many private label products that are less expensive than branded products. Despite this trend, however, manufacturers and retailers still have broad opportunities in developing private label products. Private label vegetable juices and juice products that can take a form of healthy drinks or line or brand extensions to fill the gap between different types of beverages will allow manufacturers to better compete against other non-alcoholic beverages.

Canned vegetables: Most of the present branded and private label products are from large manufacturers. These manufacturers are, however, showing less interest in the product and, they are in the process of repositioning their products. This would provide an opportunity to individual manufacturers who want to develop private label canned products for sale at low-prices through merchandise retail stores. The other alternative is co-branding or tie-ins with other products such as baking goods or sports and other activities that can raise consumption.

Frozen vegetables: Private label products will provide opportunities for frozen vegetable manufacturers who want to sell these products in bulk through low-price mass merchandise retail stores. Given the current trend for product freshness and convenience, market growth for frozen products, however, will not be easy. Manufacturers who succeed in building brand and product loyalty and who can co-brand their products with other food items may have a better chance to raise gains from sales.

Dried vegetables: Since the market for this product is still fragmented and brand products are not dominating the market, individual manufacturers can enter the market without facing high competition from large manufacturers. So, individual manufacturers and retailers have broad opportunities to develop private label products, specialty brands or regional brands that can help create new channels and expand existing markets. Co-branding and bundling with other products to create meal kits or meal replacements are other opportunities for manufacturers to raise sales.

Vegetable spreads: Although vegetable spreads are not the dominant ones, there are currently other branded and private label products, mainly in the fruit spread category. Given the wide range of flavors, types, and containers that are available on the market, competition in this category will not be easy. One challenge for manufacturers will thus be the increasing difficulty to sell private label products through mainstream retail channels. Still, manufacturers can develop private label products that can be sold through alternative market outlets.

Vegetable based sauces and seasonings: Overall, the sauce and seasoning market is highly segmented and diversified, and the share of private label products is growing. There are currently many private label products that are increasingly comparable to branded products in terms of taste, variety and packaging (Mintel, *condiments*, 2003). So, manufacturers and retailers can raise gains from sales, if they are able to develop private label products that are competitive in terms of flavor, convenience and packaging. In particular, gourmet and premium sauce and seasoning products will have the ability to penetrate the private label market.

Vegetable soups: There are some brand soup products that are currently dominating the market. On the other hand, due to high competition from low-priced branded ready-to-serve soup products, private label sales in some of the segments (e.g. dry and condensed soup) are declining. There are also some brand loyalties in the soup market (Mintel, *soup,* 2004). Therefore, manufacturers and retailers of these products will have selective opportunities to raise sales from private label products.

Vegetable containing baked items: There are a variety of brand and private label cracker products on the market. However, with an increasing demand for healthier cracker products, there is a chance that some of the older cracker products may phase out through time. So, this situation may open an opportunity for individual manufacturers of vegetable containing crackers to develop and sell specialty and private label vegetable containing cracker products.

Vegetable containing meals: There are different branded products in the meal kit, prepared meal and pizza category and the market share of the leading manufacturers is growing. On the other hand, the private label product is a small portion of the marketed meal products. This may indicate the difficulty for individual manufacturers to enter this market. As the price for branded products become low and a wide variety of products are available on the market, consumers may tend to remain loyal to brand products, providing little opportunity for growth in sales of private label meal products. So, in the future, manufacturers and retailers will have selective gains from private label products. Individual manufacturers and retailers can, however, still benefit from cross-merchandising and cross-promoting the product with other food products including fresh meat and sauces.

Vegetable containing processed fish and meat meals: There are different brand and private label processed fish and meat products currently available on the market. On the other hand, manufacturers are phasing out some low performing old-fashioned processed products mainly in the sausage segment (Mintel, *packaged breakfast and sandwich meats*, 2002). So, if manufacturers focus on developing healthier and more full-flavored vegetable containing processed private label products, there appears to exist, at least, selective market opportunities for these products.

Vegetable containing side dishes: Currently most of the branded and private label side dish products are coming from the leading brand manufacturers ((Mintel, *side dishes*, 2003). However, since the category now by and large contains aging products, the large food manufacturers tend to show less interest in the area and side dish does not appear to be their high priority. This situation provides broad opportunities for individual manufacturers and retailers to raise gains from sales of private label vegetable containing side dish products.

Vegetable based baby foods and rinks: There are different brands that are currently available on the market. But, market concentration varies depending on the type of baby foods, drinks and formula produced by manufacturers. The share of private label products appears to be relatively low. So, individual manufacturers and retailers still have broad opportunities to sell private label products. Sales can be increased from promotional activities that provide support to strengthen the customer base for specific products.

In general, **private label products continue to contribute to retail brand differentiation providing selective to broad product development opportunities for vegetable product manufacturers and retailers. Individual manufacturers can have different forms of participation in private label product development. Manufacturers can develop product specifications and labels for a product or they can develop retailer-designed products that can be sold through a selected retail market outlet.** Due to the existence of a wide variety of products, however, retailers may not have the capacity to invest in product innovation, research and development in different food products (KPMG global consumer markets, 2004). Therefore, **individual vegetable product manufacturers will have broad opportunities for selling manufacturer-designed private label products. One area that requires great attention here is, however, the need for adequate promotional support both by individual manufacturers and retailers to strengthen their market position by improving customer loyalty for the specific product.**

Implications on production practices

Product innovation starts with the consumer. Wellness, indulgence, convenience, ethnicity, value and demographic shifts are the primary market drivers that can initiate new product developments in the fruit sector. In the future, vegetable growers who are market-driven and customer-focused have broad opportunities to raise sales from their products.

Traditionally, many conventional vegetable growers have done little to realize these opportunities. They are mostly focused on reducing costs to maximize profits from their operations. The opportunities listed in the previous sections are, however, strong indications of the significance of market oriented product innovations for their successes. A differentiated product with high customer value reflected through the needs and wants of the ultimate consumer is the key to top success. With the increasing health and diet concerns of the U.S. food consumer, vegetables are currently at the forefront of being a healthy food item. They are also becoming important products in fulfilling demands of the indulgent and convenient-oriented consumer. Snacking is becoming the “fourth American meal”. Raw vegetables and salads are the ideal snack foods and vegetable growers are well positioned to gain from this growing consumption trend. One newly emerging and very promising opportunity for the conventional vegetable growers is the fresh-cut and bagged salad category. Vegetable growers have also a broad array of other opportunities to process and market vegetable products. There are also many ethnic and demographic factors that are positively affecting the vegetable sector.

The organic vegetable production will also benefit from this trend. Organic vegetables will continue to appeal to many consumers who desire pesticide free products. One new trend, in this regard, will be the shift in retail market outlets. Currently, in addition to natural/organic food markets, organic produces are increasingly offered through the mainstream supermarket channels. In addition, there are many products that lie between organic and non-organic and the line between the two is getting blurred.

Until recently, supermarkets have been offering organic products in their organic section. But nowadays many supermarkets are offering them side be side with other products allowing the consumer to compare prices and benefits. The wider distribution of these products has partly narrowed price differences between organics and non-organics and the consumer is increasingly having many choices of “healthy” vegetables. But, still, there are core consumers of organics that are not highly price-sensitive, and growers can gain from offering these products. On the other hand, given the high growth in demand for processed vegetable products (except canned and frozen), organic producers will continue to have selective opportunities to raise profits from sales of processed organic products.

There are also some new vegetable products available on the market with ethical and welfare concerns. These products have positioned themselves to provide contributions and donations to different humanitarian, educational, health, political or other organizations. There are also some products that claim to be produced without GMO. Vegetable growers can also consider these markets to raise sales from their products.

Conclusion

The present paper centered on the broader identification of product development opportunities for the vegetable sector in Michigan, Ohio and Wisconsin. The results from the rapid opportunity assessment show that there are broad arrays of product development opportunities suitable for vegetable growers, packers, manufacturers, wholesalers and retailers. These opportunities are driven by the changing consumer wants, needs and perceptions. Wellness, indulgence, convenience, ethnicity, value and demographic changes are the primary market drivers that shape the food consumption trend. Understanding of these market trends is fundamental for individual businesses who want to develop and introduce new products.

By listing potential product development and market opportunities for a wide variety of vegetable and vegetable-containing products, the paper paves the way for new thinking and the search for new ways to product innovations in the vegetable sector of the three states. It shows that opportunities are not limited within the box. Product innovations in other food sectors are part of the solutions for successes in the vegetable sector. The paper also presents a series of focus points that can be used to start thinking about the strategic benefits of these product innovations for sector. These opportunities can thus serve as a starting point for the vegetable industry to formulate and mange broader product innovation strategies and resources that secure greater success.

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