

The Strategic Marketing Institute

Rapid Opportunity Assessment: Dairy

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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. This 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 one or more of 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 the 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 analysis 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 or

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

Milk production is an important economic activity in the states of Michigan, Wisconsin and Ohio. In 2003, total farm income from milk production in the three states was approximately \$4.2 billion. Total sales for all dairy products analyzed in this report in 2003 were \$77.9 billion. Fluid milk accounts for the most sales with \$36.6 billion followed by cheese with sales of \$22.8 billion. Overall growth rates for dairy products also remains fairly strong. This is particularly true for cultured dairy products and dairy based smoothies.

While there are several positive trends for developing new products and markets for dairy products there are also several barriers to innovation. Economies of scale exist for a number of dairy products, to effectively provide some products, processing and distribution systems may be large and require substantial up front costs. Government policies such as marketing orders are also a barrier to innovation. These policies have been effective in ensuring a stable supply of milk, and ensuring the needs of the fluid market are met, but they limit the freedom for an individual entrepreneur interested in a specific market or industry.

There are several important economic and demographic forces that are affecting the dairy industry. The economic force is the slow but steady rising affluence of American society. The demographic factors are an aging population, smaller households, and an increase in ethnic diversity.

These factors in turn have created a set of five demand drivers. Smaller households, an aging population, and a more affluent society have increased the demand for products that are convenient for the consumer. Another impact of an aging

population is an increased interest in foods that promote wellness. More ethnic diversity has increased the demand for authentic foods with foreign tastes and flavors. The interest in ethnic foods is one aspect of the third demand driver of indulgence. Indulgence is a broad category that covers many product attributes and characteristics. Products that appeal to indulgence are those designed to meet the consumer’s deeply felt desires as opposed to their needs. The final demand driver is value, for many consumers price is still an important consideration. Products that appeal to value will remain important in the agri-food system.

This rapid opportunity assessment analyzes the demand drivers of convenience, ethnicity, indulgence, value, and wellness with the products of fluid milk, cultured products, butter, cheese, ice cream and cream. The intersection of product form and demand driver can be seen as a market. The product form-demand driver table is shown below.

| Demand Driver/Product Form Matrix | | | | | |
|--|----------------------|------------------|-------------------|--------------|-----------------|
| Product Form | Demand Driver | | | | |
| | Convenience | Ethnicity | Indulgence | Value | Wellness |
| Fluid Milk | Selective | Broad | Broad | Limited | Broad |
| Cultured | Broad | Broad | Broad | Limited | Broad |
| Cheese | Selective | Broad | Broad | Limited | Broad |
| Butter | Selective | Limited | Selective | Limited | Limited |
| Ice Cream | Selective | Broad | Broad | Selective | Selective |
| Cream | Limited | Selective | Broad | Limited | Limited |

Some markets show more potential than others. Markets with limited potential are those where new innovations are less likely to be successful. New innovations in these markets would be working against the overall trends. Markets with selective potential have some possibilities for some success; the overall trends are neither positive

nor negative for innovation. Markets with broad potential have the highest probability for successful innovation; the demand drivers are inclined to accept new products and supply chain introductions. However, it should be noted introducing a product where the opportunities are limited is not necessarily doomed to failure and introducing a product where the opportunities are broad is not a guaranteed success. The following table shows the number of product introductions for selective dairy products from 1998 through the first part of 2003.

| Product Introductions Selected Dairy Products 1998-2003 | | | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Product | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | Total |
| Fluid Milk | 59 | 49 | 82 | 88 | 93 | NA | 371 |
| Yogurt | NA | 78 | 78 | 139 | 153 | 205 | 653 |
| Yogurt Drinks | 5 | 12 | 1 | 16 | 29 | 25 | 88 |
| Cheese | NA | NA | 281 | 260 | 343 | NA | 884 |
| Cream and Creamer | 12 | 10 | 3 | 19 | 18 | 17 | 79 |
| Take Home Ice Cream* | NA | NA | NA | 814 | 869 | 231 | 1,914 |

* First Quarter of 2003 only.

Source: Mintel

Overall there are several positive trends for fluid milk. The widespread belief that milk is healthy makes it well suited for the development of products that appeal to wellness. The development of products with additional flavors and textures can appeal to both ethnicity and indulgence. Innovations in the distribution and the fluid milk supply chain also create some opportunities in appealing to the demand driver of convenience.

There are also broad opportunities with respect to cultured products. Drinkable yogurt products are now a new product category, adding to the convenience of yogurt products. The well known health benefits of cultured dairy products also make these products amenable to product introductions that appeal to wellness. As is the case

with fluid milk new tastes, textures, varieties and flavors can be introduced that appeal to both ethnicity and indulgence.

There are also some opportunities in the cheese market. The best opportunities present themselves in products that address the demand drivers of ethnicity, indulgence and wellness. The recent decline in the value of the dollar improves the competitive position of cheesemakers who are interested in producing European type cheeses.

Opportunities are somewhat more limited with respect to butter. Butter is seen by many as a commodity. Price is an important consideration for many butter consumers. There may be some opportunities for butter products that enhance convenience and offer new flavors.

Ice cream is a product that is well suited to address the desire for ethnic products as well as indulgence. Ice cream is primarily a treat, and ice cream products that offer a unique eating experience have the potential to be successful. Combining ice cream with attributes that promote health presents another opportunity for new products.

Overall the opportunities for cream are somewhat limited. There does seem to be some opportunities for cream products that appeal to the demand driver of indulgence.

Compared to many agri-food industries, there are a number of positive trends in the dairy industry. There are dairy products that can appeal to convenience, ethnicity, indulgence, and wellness. While not impossible, appealing to value will be more difficult. Opportunities in fluid milk, cultured products, cheese and ice cream have the most potential for success. The importance of dairy products in a well balanced diet has

been well established. Additional fortifications, and the addition of prebiotic and probiotic product attributes could be used to appeal to the demand driver of wellness. This potential is particularly strong for fluid milk and cultured products.

RAPID OPPORTUNITY ASSESSMENT: DAIRY

Introduction

Milk production is an important economic activity in the states of Michigan, Wisconsin and Ohio. In 2003, total farm income from milk production in Wisconsin was \$2.8 billion, \$794 million in Michigan and \$584 million in Ohio (National Agricultural Statistics Service, p.6). This rapid opportunity assessment analyzes several economic and demographic changes in the U.S. and how the fundamental forces have created a number of demand drivers for agri-food products. These drivers are convenience, ethnicity, indulgence, value and wellness. The impact of these drivers on the fluid milk, cultured products, cheese, butter, ice cream, and cream industries are then discussed. Overall, there appears to be several opportunities for new products, and other innovations in the dairy industry.

This analysis is primarily a market analysis of some of the product sectors of the dairy industry. Other factors such as the capital requirements, necessary management skill sets and other very important aspects of a successful enterprise are not explicitly considered. Cooperatives are a very important marketing institution in the dairy industry. Compared to other agri-food sectors where cooperatives are not as important dairy farmers have more access to consumer markets and control more of the product. This enhances the ability of farmers acting collectively to enter into new markets for develop innovations in the industry.

Nonetheless, it is important for a entrepreneur in the industry, whether a individual, cooperative, or processor to carefully consider the market. To be successful many manufacturing processes require economies of scale, per unit costs that decline as

output increases. The implication of this is that a market needs to be of a certain size in order for a new product introduction to be successful. Also, a supply chain needs to be identified and as well as potential collaborators and competitors. This could be accomplished through the use of an exhaustive business plan, or other analytic device.

Institutional Barriers to Innovation in the Dairy Industry

There are some fundamental characteristics in the dairy industry that need to be considered. This is especially true for an individual entrepreneur or a firm lacks experience in dairy markets. Unlike most agricultural products, milk is produced every day and its ability to be stored as a fluid commodity is extremely limited, as a result, a market or place for that milk needs to be found on a daily basis. To address this and other issues the federal government allows producers to institute milk marketing orders. These orders affect Michigan, Wisconsin and Ohio. Most of Michigan and Ohio is in the Mideast Marketing Order. Most of Wisconsin and the Western counties of Michigan's Upper Peninsula are in the Upper Midwest Marketing Order (Manchester and Blayney, p.9).

The primary goal of these orders is to ensure that the supply and demand for milk is matched and that the needs of the fluid market are served. There two important characteristics of the orders, classified pricing and pooling (Manchester and Blayney, p.7). Classified pricing establishes minimum prices for fluid milk (Class I), and perishable processed products such as yogurt, ice cream etc. (Class II) (Manchester and Blayney, p.17). Farmers receive the "blend" price which is a weighted average of the Class I, Class II, Class III (cheese) and Class IV (butter and nonfat milk solid) prices.

In order for classified and blend pricing to work, the milk produced in the order is pooled. Processors pay into or draw out of the pool on the basis of their utilization of milk relative the market average in the area covered by the order. From this pool farmers receive the blend price (Manchester and Blayney, p.18).

The impact of the federal orders alters the new product development process, markets and distribution systems in the dairy industry. The result is that milk supply arrangements must be made as part of the product development process. Also, the orders affect the ability to compete on the basis of differences in raw ingredient prices.

Economic and Demographic Forces Affecting the Agri-Food System

Introduction

One economic force and three demographic forces are critically affecting the agri-food system. The economic force is the slow but steady growing affluence of U.S. society. More and more U.S. households now have increasing amounts of discretionary income. The three demographic forces are smaller households, an aging population, and a more ethnically diverse population. While these demographic forces are distinct, they often reinforce their impacts on the agri-food system. This is particularly true for smaller households and the aging population.

These societal changes have led to the development of several drivers in food demand. These demand drivers are as follows: an increased demand for wellness, an increased interest in ethnic foods, indulgence as an attribute, and an increased demand for convenience. Another attribute of food products, value, is not a new trend but remains an important consideration for many consumers. These trends will be discussed below in further details

Each of the economic and demographic forces will be discussed in turn. Then the relationship between the forces and the demand drives will be addressed. This will include further analysis and definition of the demand drivers.

Increase in Income

Over time, most households in the U.S. have seen their incomes increase. This has allowed them to increase their purchases. Table 1 shows the growth in incomes from 1970 to 2000. Of particular importance is the growth in the number of households that earn more than \$75,000 a year. It is at this level that many households begin to have discretionary income to spend. The growth in the number of these households has been referred to as the emergence of mass affluence (Nunes, Johnson and Breene, p. 96).

Table 1: Distribution of Income 1970-2000 (Percent of Households)

| Year | \$5,000 | | \$10,000 | | \$15,000 | | \$25,000 | | \$35,000 | | \$50,000 to \$75,000 to \$100,000 and over |
|------|---------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|----------|--|--|
| | Under \$5,000 | to \$9,999 | to \$14,999 | to \$24,999 | to \$34,999 | to \$49,999 | to \$74,999 | to \$99,999 | | | |
| 2000 | 2.9 | 6.1 | 7.0 | 13.4 | 12.5 | 15.5 | 18.9 | 10.4 | 13.4 | | |
| 1990 | 3.2 | 7.7 | 7.5 | 14.1 | 13.7 | 17.2 | 18.8 | 9.1 | 8.7 | | |
| 1980 | 3.1 | 8.9 | 8.2 | 15.5 | 14.0 | 18.9 | 18.7 | 7.5 | 5.2 | | |
| 1970 | 4.8 | 8.7 | 7.6 | 15.2 | 16.3 | 21.0 | 17.6 | 5.4 | 3.4 | | |

Source: U.S. Census Bureau

These figures have been adjusted for inflation using the Consumer Price Index (CPI) and are in terms of 2000 dollars.

In 2000, those households that earned \$75,000 or more per year made up 23.8 percent of all households. That figure was only 8.8 percent in 1970. The number of households earning more than \$100,000 a year increased by almost 400 percent from 1970 to 2000, and increased by 54 percent from 1990 to 2000. Conversely, households

earning less than \$15,000 a year accounted for 21 percent of all households in 1970 and 16 percent of all households in 2000. This trend can also be seen in the increase in median income. Median income was \$33,746 in 1970 (in 2000 dollars), and was \$42,148 in 2000; an increase of almost 25 percent (U.S. Census Bureau, *Money Income in the United States: 2000*, p. 17). Clearly there has been a consistent increase in the level of disposable income over the past thirty years. This allows more and more consumers to purchase goods and services that have luxury attributes.

While it is true that affluence has been increasing over time, it is also true that many households have modest incomes. There is still a large market available for firms and products that focus on value.

Smaller Households

While household incomes have increased the size of households has declined somewhat. This reinforces the trend for more discretionary income. Smaller households mean there are fewer household members who have needs to be met, and often more income available for discretionary purchases. However, it should also be noted that some smaller households consist of seniors with fixed incomes or households headed by single mothers who also face a restricted household budget.

The trend for smaller households has been consistent and will likely continue in the future. Table 2 gives the average size of households in the U.S. from 1970 to 2000.

| Year | Persons Per Household |
|-------------|------------------------------|
| 1970 | 3.14 |
| 1980 | 2.76 |
| 1990 | 2.63 |
| 2000* | 2.59 |

* estimate

Source: U.S. Census Bureau

Since 1970, the size of the average household has declined by more than 17.5 percent. The average household size is projected to be 2.53 in 2010 (Day, p. 10). While the rate of decline is slowing down, the trend for smaller families will continue.

Smaller households have impacted the agri-food system in a number of ways. Smaller more affluent households have more discretionary income to spend in any way they please. It may be the case that smaller households will place more emphasis on convenience; it may be easier to justify time and effort spent on cooking for larger families than for smaller families. Smaller families also imply that a higher percentage of family members are working. This is reinforced by labor participation rates. Table 3 shows the overall labor participation rates, those for men and those for women from 1970 to 2000.

| Year | Total | Men | Women |
|-------------|--------------|------------|--------------|
| 1970 | 57.5 | 76.2 | 40.8 |
| 1980 | 59.2 | 72.0 | 47.7 |
| 1990 | 62.8 | 72.0 | 54.3 |
| 2000 | 64.8 | 71.9 | 57.5 |

Source: Bureau of Labor Statistics

Table 3 shows that the labor force participation rates for men have been steady since 1980. The increase in the total labor participation rate is completely due to women

entering the labor force. More people working means less time for other activities such as cooking. Households are more likely to substitute eating away from home and easy to make meals for traditional home cooked meals.

An Aging Population

Another demographic change affecting the U.S. agri-food system is the fact that the U.S. population is aging. At the beginning of the 20th Century only 4.1 percent of the population was aged 65 or older (Hobbs and Stoops, p. A-19). The trend towards an older population is outlined in table 4.

| Year | Percentage of the Population 65 Years and Older |
|-------|---|
| 1970 | 9.9 |
| 1980 | 11.3 |
| 1990 | 12.6 |
| 2000 | 12.4 |
| 2010* | 13.2 |
| 2020* | 16.5 |

* Estimate

Source: U.S. Census Bureau

While the percentage of the population aged 65 and older declined in relative terms, it actually increased in total numbers. In 2000, there were 34,991,753 persons 65 or older (Hobbs and Stoops, p. A-17), an increase of 12 percent over 1990. The increase in the level of immigration (which tends to be younger people), has moderated the relative increase in age. Nonetheless the number of older residents of the U.S. is increasing.

Furthermore, it is expected to increase in the future. A large population cohort (the baby boomers) will soon be adding to the numbers of persons over 65. Table 4 shows the middle series estimate for the number of persons 65 and older in 2010 and

2020. It is estimated that the number of person 65 and older will account for 16.5 percent of the population in 2020. If this is the case, one person in 6 in the U.S. will be in this age group.

A potential market of 35 million people, and expected to increase is large. Older residents have different nutritional issues than younger members of society. Wellness will be an issue for some of these consumers. Convenience and packaging designed for single serve meals will also be important for a large number of older consumers. Some older consumers are on limited and fixed incomes. Consumers in this situation will be value conscious.

Ethnic Diversity

The U.S. is becoming more ethnically diverse. Partially this is due to higher birthrates among some ethnic groups, but to a great extent the increased diversity is due to increased immigration from other countries. Two of the major areas of growth are in the number of Asian and Hispanic residents. Of the 33.5 million foreign born persons living in America 17.9 million are from Latin America (including the Caribbean) and 8.4 million are from Asia (including the Pacific Islands) (Larsen, p.1). Table 5 shows the growth in the population of the Asian and Hispanic populations over time.

| Year | Percent Asian | Percent Hispanic |
|-------------|----------------------|-------------------------|
| 1970 | 0.7 | NA |
| 1980 | 1.5 | 6.4 |
| 1990 | 2.9 | 9.0 |
| 2000 | 4.4* | 12.5 |

* actual figure for 2002

Source: U.S. Census Bureau

The 1980 census was the first that included Hispanics (regardless of race), as a separate group. In 2002, there were 12.5 million Asian and Pacific Islanders living in the U.S. (Reeves and Bennett, p. 1), in 1990 that figure was 7.3 million (Hobbs and Stoops, p. A-23). From 1990 to 2002, the number of Asians and Pacific Islanders living in the U.S. increased by 5.2 million or 71.2 percent.

The increase in the Hispanics has been well documented. Hispanics either are or soon will be the largest ethnic or racial group (after non-Hispanic whites) in the U.S. In 1980, there were 14.6 million people of Hispanic origin the U.S., that figure stood at 35.3 million in 2000 (Hobbs and Stoops, p. A-37); the number of Hispanics increased by 141.2 percent in 20 years. It is expected that there will be 43.7 million Hispanics in 2010, which is estimated to be 14.6 percent of the population. While this growth is spread throughout the country, it is concentrated in the Southwest.

However, it is important to note that this level of aggregation does not tell the whole story. The tastes and preferences of many Indians are different than those of many Chinese. The same is true in the Hispanic community; the tastes and preferences of Puerto Ricans and Cubans are going to be different than those of Mexicans and Guatemalans. This creates a number of opportunities for firms interested in meeting the needs of these groups of consumers.

The most obvious impact the increased diversity of U.S. society has on the agri-food industry is in the market driver of ethnicity. This impact is felt to two ways; first the immigrants will likely want authentic food from their native societies. This desire may decline in second and succeeding generations. It may be the case that the desire for convenience may drive the market for ethnic foods towards massed produced

homogenized products, similar to what has happened with much of Italian and Chinese food, and perhaps what is currently happening with Mexican food. However, it should be noted that many members of these groups have limited incomes. This is particularly true of immigrants and those with a Hispanic background. Value will continue to be an important attribute for many of these consumers.

The other ethnic trend is for increased consumption of foreign influenced foods by other ethnic and racial groups. The desire to try something different and to diversify their menu choices has also increased the demand for ethnic and ethnically influenced foods. For example, many customers at Mexican and Thai restaurants are not Mexicans and Thais respectively.

The Demand Drivers Affecting the Agri-Food System

There has been some discussion of the demand drivers affecting the food system in the section on economics and demographics but these drivers have not been analyzed in detail. The demand drivers of wellness, ethnicity, convenience, indulgence, and value will be discussed in turn. Much of the information on these demand drivers was the result of discussions between researchers at Michigan State University and the Hale Group.

Wellness

There are several aspects to wellness. One aspect is the desire for food products that do not cause harm as a result of pathogens and carcinogens. Examples are foods that are free of e-coli, hepatitis A and other pathogens that cause food poisoning. BSE remains a concern for some consumers. Pesticide residues remain a concern for some, not for their impact on the environment as much as its safety in food products. The

growth in the organic market is driven more by the desire to consume safe foods as it is by environmental concerns (Mintel, *Organic Foods and Beverages*, p. 11).

Another aspect of wellness is avoidance of foods that contribute to chronic diseases and conditions such as hypertension, obesity and heart disease. The interest in low carbohydrate foods are an example of this consumer trend, as are foods and beverages that are promoted as being low in fat and calories. It is likely that once trans fatty acids are added to food labels there will be a movement away from foods that possess this characteristic.

This appears to be a global phenomenon. The Mintel Group’s Global New Product Database (gnpd) tracks new product introductions throughout the world. Table 6 shows the new product introductions with what the gnpd refers to as “foods minus” claims; new food products that claim to have little or none of a negative product attribute.

| Product Claim | 2002 | 2003 | 2004 | Total |
|-----------------------------|-------------|-------------|-------------|--------------|
| Low Fat | 3,867 | 4,662 | 4,968 | 13,497 |
| Low Additives/Preservatives | 3,611 | 4,706 | 4,070 | 12,387 |
| Low Sugar | 2,221 | 2,539 | 3,149 | 7,909 |
| Low Calorie | 1,234 | 1,732 | 2,037 | 5,003 |
| Low Cholesterol | 969 | 1,271 | 1,489 | 3,729 |
| Low Carbohydrate | 114 | 436 | 2,738 | 3,288 |
| Low Sodium | 503 | 575 | 933 | 2,011 |

Source: Mintel Global New Products Database

Each year more and more of these products are introduced throughout the world. Every category increased every year with the exemption of low additives/preservatives from 2003 to 2004; however 2004 has not ended and there will be some low additive/preservative products introduced before the end of the year. Some products such

as low carbohydrate and/or low sodium foods are increasing dramatically, but even well established product lines such as low calorie foods are increasing.

An additional aspect of the demand for wellness is the creation of foods and beverages that actually promote or improve wellness. Examples are the promotion of foods that are high in vitamins and anti-oxidants. There is a growing trend toward foods that promote themselves as actually burning fat. There are also a growing number of food and beverage products that have pharmaceutical benefits. Food and beverage products that are high in probiotics, prebiotics (foods that aid in gastrointestinal health) and Omega 3-fatty acids are examples.

The gnpd also tracks foods that have “food plus” positioning claims; food products that have positive product attributes as opposed to the absence of negative product attributes. Table 7 shows the number of new food product introductions that claim to have such attributes.

| Product Claim | 2002 | 2003 | 2004 | Total |
|---------------------------|-------------|-------------|-------------|--------------|
| Vitamin/Mineral Fortified | 4,599 | 4,846 | 4,238 | 13,683 |
| All Natural | 2,233 | 2,985 | 3,136 | 8,354 |
| Organic | 2,661 | 2,681 | 2,016 | 7,358 |
| Vegetarian | 1,774 | 1,982 | 1,912 | 5,668 |
| Added Calcium | 1,315 | 1,231 | 989 | 3,535 |
| Added Fiber | 690 | 677 | 545 | 1,912 |
| Diabetic | 153 | 302 | 583 | 1,038 |

Source: Mintel Global New Products Database

As is the case for table 6, the figures for 2004 are not for the full year. There has been an explosion of food items geared for people with diabetes. There has also been an increase in the number of food items that claim to be all natural. However, the “food plus” market does not seem to be as well developed as the “food minus” market. One implication of

this is that there may be more room for growth and new product development in the area of “food plus” products. However, in order for this potential to be fully developed, regulatory issues such as labeling and testing and confirmation of health claims needs to be determined.

There are a number of economic and demographic factors that have made wellness a demand driver. An older and more sedentary population is more interested in food and beverage items that either improve health or do not adversely affect health. Chronic problems such as diabetes and osteoporosis are also driving the demand for products that are low in sugar and carbohydrates as well and the demand for food and beverages with added calcium. Some consumers now have the income to afford to pay for products that impact health in a positive way.

Ethnicity

Ethnic products can be defined as those that have food and beverage traits of specific ethnic groups. This driver has two sub-categories: foods with an authentic appeal to the ethnic group itself; and foods marketed to the wider U.S. population that has been influenced by ethnic tastes and ingredients.

Obviously, a major source of this demand driver is the growing ethnic diversity of the U.S. This has impacted the demand for number of ethnic foods and markets. Food retailing firms that are geared towards Asian products have become common. Restaurant establishments that specialize in Indian, Thai, and Middle Eastern cuisines are also becoming more common.

The influence of ethnic food will likely become more widespread. Americanized versions of foreign foods have developed. This has happened with Italian food, and may

be happening with Mexican food. These foods will be a combination of foreign and American tastes. Flavors typically thought of foreign, such as curry, might work their way into foods traditionally thought of as American.

Another major factor influencing the ethnicity is increasing affluence. This has allowed some members of society to travel widely and experience different cultures. It has also allowed increased experimentation with foreign foods, particularly in a restaurant setting. Many foreign restaurants depend on the patronage of other ethnic groups to stay in business.

Ethnic foods appeal to some consumers' sense of adventure. These consumers are looking for new flavors, tastes and food experiences. In this respect, the ethnic food driver is very similar to the indulgence driver.

Indulgence

Indulgence is a broad category that covers many product attributes and characteristics. Products that appeal to indulgence are those designed to meet the consumer's deeply felt desires as opposed to their needs. However, these desires also may include the consumer's belief and religious system and other very important aspects of the consumer's life. Indulgence in this sense does not necessarily mean unimportant or frivolous, but rather food and beverage items need to possess characteristics above and beyond the simple ability to maintain life or to provide minimum quality at a minimum price.

As a result, indulgence can cover a wide range of products. One such characteristic is luxury. Examples include beer from a microbrewery, expensive wines and chocolates, gourmet coffees and cheeses. Another aspect of indulgence is cooking as

a hobby, cooking gourmet meals as a lifestyle choice. For some cooking and preparing food is a basis for social connectedness, an opportunity to interact with others. Fine dining at a restaurant is another example of using luxury appealing to the sense of indulgence. The experience of the food and atmosphere meeting the desire of the consumer is the primary indulgence attribute. This includes the desire to experience new foods, tastes and varieties.

Emotional connectedness is also an attribute of indulgence. Some foods appeal to a consumer's sense of nostalgia. The phrase "comfort food" points this out. Meat loaf and homemade chocolate chip cookies are examples of foods that appeal to emotional connectedness.

Another aspect of indulgence foods is its ability to reflect the values and religious beliefs of consumers. Examples of this are dairy and meat products from animals raised in a manner perceived as being humane, such as free range chicken and milk from cows that are not treated with hormones. Consumers who purchase organic foods or foods grown in the area they live primarily because of their minimal effects on the environment are another example. Increasing ethnicity is also reflected in the values of consumers. A growing Muslim population will increase the demand for foods processed in a manner that conforms to Muslim dietary laws.

The primary source of the growth of indulgence products is rising affluence, although this demand driver also interacts somewhat with the wellness driver. A consumer may buy fewer candy bars to keep the weight off but the candy bars he or she buys are more expensive, and are of higher quality or more exciting taste and variety. Affluent, less price conscious consumers will look for products that satisfy more than

their needs, they will look for products that enhance their lifestyle, their values and their beliefs. Smaller households also allow consumers with few or no children to experiment and seek out experiences.

A secondary source of the growth of indulgence is an aging population. Households with the income and the time are better able to pursue hobbies and develop new interests. This includes new experiences with food and beverages.

Convenience

Of all the demand drivers shaping the agri-food system convenience may be the most important. Convenience can be defined as anything that makes life easier for the consumer such as: prepared foods that can be consumed “on the run” or at home; hand held foods that enable the consumer to do something else while eating such as driving; partially prepared foods that reduce or eliminate preparation time e.g. instant oatmeal, precut salads; foods in packaging that makes consumption easier such as microwavable popcorn, Lunchables, and single serve yogurts; or bundling of products such as hamburger helper, frozen dinners etc.

Several factors have led to the demand for convenience. Smaller families increase the per person time and effort cost of cooking. It also makes packaging for smaller households more important. More women in the workforce and daily commutes also reduce the amount of time many households have for food preparation. The work week of many households has increased also reducing the time available for preparing meals.

For many households that earn \$75,000 or more, time has become more valuable than money. As a result, these households are willing to pay a price premium for foods

that are convenient. Additional packaging, ease of use etc. in exchange for a higher price is considered a good trade-off for these consumers.

While time is one important aspect of convenience it is not the only one. Another important aspect of convenience is ease of preparation. Pre-cut salads are an example. Another example is the growth of foods that can be prepared in one dish, such as premixed crock pot dishes. These meals are very easy to prepare but may actually take several hours to cook. However, there is little oversight or thought involved in the actual cooking of the meal.

Another consideration of convenience is the development of meal solutions. Packaged or pre-prepared food items that provide an entire meal. Meal solutions not only save time and effort, but also reduce time shopping and planning meals.

Value

The final demand driver is the best understood. Food and beverages that meet the consumer's needs at the lowest price fulfill the consumer's preference for value. Price coupled with a basic level of performance is the hallmark of value.

There are a number of examples that appeal to value. Private label brands that sell at a price discount are an example, as are canned fruits and vegetables. Certain restaurant chains that sell pre-made standardized products are another example.

While perhaps less exciting than the other demand drivers, value will continue to be important with many consumers. The 76.2 percent of households that earn less than \$75,000 will likely remain price conscious for many, if not most products. This is particularly true for those households that earn less than \$50,000 which is still more than 50 percent of all households. Immigrants with limited incomes may also be value

oriented. In some respects this limits the ability to charge price premiums for ethnic foods.

An aging population may also place more emphasis on value. Many retired people have fixed incomes. Policy issues such as rising health care and the future viability of Social Security may also affect the purchasing choices of older consumers, and may place more value on consumers.

Implications for Firms in the Agri-Food System

The number of drivers has increased the opportunities for firms in the agri-food system. Controlling costs will continue to be the most important aspect for firms interested in providing products that offer value to consumers. To be successful providing value, a firm will need to be the low cost producer.

Costs are less important in providing products that address the other drivers. Increased ethnicity will increase the demand for authentic foreign foods and foods that are influenced by foreign flavors and characteristics. This increases the range of products that can be offered to consumers, and creates additional markets available to firms in the agri-food industry. This transcends beyond the Mexican market and includes markets such as the Indian and Middle Eastern market.

Convenience remains a very important demand driver. More affluent households facing time constraints place a higher value on foods that are easy to prepare and can be consumed on while doing something else. Smaller households increase the demand for packaging that reflects servings for one or two individuals. This demand driver is well understood, but opportunities remain.

Wellness is a driver that presents a great deal of potential for firms willing to meet this driver. An aging and affluent society is becoming more interested in healthy foods, both those foods that are free of “bads” such as fat and sodium and have more “goods” such as antioxidants and vitamins and other attributes. This demand driver also has a great deal of potential in the area of nutraceuticals and other functional foods. In many ways, the wellness market is just developing as the science and consumer awareness continues to grow. This is an area that may have a great deal of potential for firms and new product introductions.

Of all the demand drivers, indulgence perhaps provides the most options for firms in the agri-food sector. Indulgence covers many submarkets including luxury, social interaction, and environmental and religious concerns to name a few. Also there are many consumer segments that agri-food firms may wish to pursue. Insofar as indulgence appeals to the most deeply held preferences and beliefs of these consumers the potential to obtain price premiums may be the highest.

One way firms in the agri-food industry can capture higher profits is by developing products and markets that address one or more of these drivers provided that the segment represented by the overlap of these demand drivers is big enough to justify product development and all other up-front costs. Examples include prepared ethnic foods that would appeal to ethnicity, convenience and perhaps indulgence. Another would be prepared organic foods in single serve containers; this would appeal to wellness and convenience while taking into account smaller household size. Products that appeal to a number of drivers simultaneously have a great deal of potential.

The Demand Drivers and the Dairy Industry

The preceding discussion allows for an analysis of the dairy industry by demand driver and product form. The intersection of product form and demand driver can be seen as a market. Some markets show more potential than others.

Markets with limited potential are those where new innovations are less likely to be successful. New innovations would be working against the overall trends; the innovation would have to be superior in order to be successful. Markets with selective potential have some possibilities for some success; the overall trends are neither positive nor negative for innovation. Markets with broad potential have the highest probability for successful innovation; the demand drivers are inclined to accept new products and supply chain introductions.

Table 8 shows the relationship between product form and the demand drivers.

| Table 8: Demand Driver/Product Form Matrix | | | | | |
|---|----------------------|------------------|-------------------|--------------|-----------------|
| Product Form | Demand Driver | | | | |
| | Convenience | Ethnicity | Indulgence | Value | Wellness |
| Fluid Milk | Selective | Broad | Broad | Limited | Broad |
| Cultured | Broad | Broad | Broad | Limited | Broad |
| Cheese | Selective | Broad | Broad | Selective | Broad |
| Butter | Selective | Limited | Selective | Limited | Limited |
| Ice Cream | Selective | Broad | Broad | Selective | Selective |
| Cream | Limited | Selective | Broad | Limited | Limited |

Table 8 shows that the dairy industry has several potential areas for growth. This is particularly true for products that appeal to the demand drivers of ethnicity, indulgence and wellness. Again, products that address more than one of these demand drivers have the greatest odds of success. Given the maturity and size of the firms in some markets, focusing on value has the least probability of success.

The dairy industry is quite large, and covers a wide range of outlets. Table 9 gives the sales level for 2003 and the percentage change over 2002 for some selected dairy products. Mass merchandisers include such firms as Meijers, Wal-Mart and Super K K-Marts. These types of firms are becoming a larger and larger part of food sales. Food service includes restaurants and other food consumed away from home outlets. Industrial uses the use of the products in other food items, for example, cheese used in frozen pizza. Total sales for all dairy products listed covering market outlets covered in table 9 in 2003 were \$77.9 billion. Fluid milk accounts for the most sales with \$36.6 billion followed by cheese with sales of \$22.8 billion. Overall growth rates for dairy products also remains fairly strong. All product types in all distribution sectors showed a

Table 9: Size and Growth Rates for Selected Dairy Products in Selected Sectors 2003

| Product | Retail | | Mass Merchandise | | Food Service | | Industrial | | Total Sales 2003 |
|---------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|
| | Sales (millions) | Growth Rate | |
| Fluid Milk | \$ 12,462 | 2.5 | \$ 1,540 | 2.8 | \$ 2,771 | 2.0 | \$ 19,828 | 2.0 | \$ 36,601 |
| Butter | \$ 1,270 | 1.7 | \$ 267 | 1.9 | \$ 553 | 2.2 | \$ 501 | 2.0 | \$ 2,591 |
| Yogurt | \$ 2,770 | 7.8 | \$ 332 | 8.2 | \$ 194 | 4.6 | \$ 35 | 5.0 | \$ 3,331 |
| Yogurt Drinks | \$ 213 | 59.0 | \$ 45 | 59.0 | \$ 101 | 46.0 | NA | NA | \$ 359 |
| Cream | \$ 581 | 3.5 | \$ 70 | 3.7 | \$ 216 | 3.1 | \$ 500 | 3.0 | \$ 1,367 |
| Smoothies | \$ 90 | 250.0 | \$ 19 | NA | \$ 1,009 | 7.0 | NA | NA | \$ 1,118 |
| Ice Cream | \$ 8,720 | 4.1 | \$ 401 | 4.5 | \$ 600 | 4.0 | NA | NA | \$ 9,721 |
| Cheese | \$ 11,020 | 2.5 | \$ 2,320 | 2.7 | \$ 6,620 | 2.6 | \$ 2,840 | 2.5 | \$ 22,800 |

Food Service and Industrial Figures are estimates

year over year increase in sales, from a low of 1.7 percent for retail butter to a high of 250 percent for smoothies. Sales increases are especially strong for smoothies and yogurt drinks. Sales remain strong for yogurt as well, and even well established products such as ice cream, fluid milk and cheese show steady increases in sales. These figures reinforce the matrix in table 8, cultured products appear to show the most promise, but there are opportunities in many products that appeal to some of the demand drivers.

Table 10 shows the number of product introductions for various dairy products.

| Product | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | Total |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Fluid Milk | 59 | 49 | 82 | 88 | 93 | NA | 371 |
| Yogurt | NA | 78 | 78 | 139 | 153 | 205 | 653 |
| Yogurt Drinks | 5 | 12 | 1 | 16 | 29 | 25 | 88 |
| Cheese | NA | NA | 281 | 260 | 343 | NA | 884 |
| Cream and Creamer | 12 | 10 | 3 | 19 | 18 | 17 | 79 |
| Take Home Ice Cream* | NA | NA | NA | 814 | 869 | 231 | 1,914 |

* First Quarter of 2003 only.

Source: Mintel

This table needs to be interpreted carefully. For some products such as cheese and ice cream, the figures are only for new products and line extensions; for other products such as fluid milk all aspects of new products (e.g. packaging, etc.) are included. It is safe to say that true product innovation in terms of a revolutionary product or distribution technique is very rare. Most of these new product introductions are in terms of additional flavors, different packaging etc. Most innovations in the dairy industry are evolutionary, not revolutionary in nature.

However, table 10 does present some interesting information. Ice cream, cheese and yogurt in various forms show the most new product introductions. It may be the case that the yogurt drink industry is preparing to take off. While small in absolute terms, the rate of increase in the yogurt drink market is quite large. Ice cream in various forms also shows a great deal of new product introductions. Ice cream introductions can be used to address convenience, wellness, ethnicity and indulgence. Cheese shows a great deal of potential as well, particularly in the area of indulgence and ethnicity as consumers look for new tastes and experiences, or to replicate the cheeses of their native cultures. The recent decline in the value of the U.S. should help U.S. farmers and firms compete,

particularly in the cheese industry. Many specialty cheeses are imported the decline in the value of the U.S. dollar makes U.S. cheeses more cost competitive compared to imported cheeses.

Fluid Milk

Background

Milk is something that is virtually every household in the nation uses. Fully 95 percent of the households consume milk (Mintel, *Milk*, p.4). The market for milk could be divided into two groups, heavy drinkers which are 48 percent of households, but consume 80 percent of the milk and light drinkers which are 52 percent of households, but consume only 20 percent of the milk (Mintel, *Milk*, p.51). Clearly if products and supply chains could be developed to address the desires of the light drinkers, the market for fluid milk could grow. Children are the largest consumers of milk although 40 percent of adults surveyed said they drink two or more glasses a day (Mintel, *Milk*, p. 4). A threat to the milk industry is the growth of soymilk. Soymilk is now an \$809 million industry (Mintel, *Milk*, p.15).

The largest fluid milk firm, Dean's Foods, only accounted for 9.1 percent retail sales in the U.S. in 2002, although that figure is higher in some parts of the country. The four largest firms only account for 12.8 percent of the total retail sales in 2002. Private label brands dominate the retail sector with 42.7 percent of retail sales in 2002 (Mintel, *Milk*, p.29). However, some of private label brands are serviced by large dairy cooperatives. Dean's food is also a major supplier of milk for private labels. Nonetheless, the barriers to entry may or may not be excessive for firms with new products or innovative distribution ideas.

Convenience - Selective

There are two developments at work with respect to convenience and fluid milk. The first is improved packaging of single serve products. This helped develop new distribution outlets for fluid milk. Convenience stores accounted for 24 percent of retail sales of fluid milk in 2002, up from 20 percent in 2000 (Mintel, *Milk*, p.4). Improved packaging has allowed for more sales from vending machines as well. The increased use of vending machines is a market outlet the dairy industry should pursue. The profit margins could be quite high; the price per ounce for a single serving bottle of milk is 8 to 10 cents compared to 2 to 2.5 cents per ounce for a gallon container (Mintel, *Milk*, p.16).

The second is the development of self stable products (Mintel, *Milk*, p. 1). Sales of self stable milk products increased by 33 percent from 2000 to 2002 (Mintel, *Milk*, p. 17). Self stable products would allow consumers to pack milk in their lunches and store them anywhere. It would also allow retailers to cross promote milk with other products such as cookies (Mintel, *Milk*, p. 26). There is a potential to improve the flavor of self stable milk products which will increase the demand for these products. The development of self stable milk products could also enhance the use of vending machines as a point of sale for milk products.

Another possible way to appeal to convenience is through home delivery of milk. Apparently, there are some areas (primarily urban) that are seeing a return of the milkman (Mintel, *Milk*, p. 22). However, given the current price of gasoline, it is difficult to determine if this method of milk distribution will be feasible in the long run. The use of internet shopping presents another possible way to distribute milk (and other food items) to time pressed consumers that put a premium on convenience.

Improved packaging and alternative markets create selective opportunities for fluid milk products appealing to the demand driver of convenience.

Ethnicity - Broad

There is widespread potential for fluid milk products that appeal to various ethnic groups. One way is to provide milk in various flavors beyond chocolate and strawberry. The second is to provide more fluid milk products that are lactose free. Intolerance to lactose is far more common among Asians and African Americans than it is among white Americans. A positive trend for those in the fluid milk industry is the fact that Hispanics drink more milk than members of other ethnic groups. Hispanics drink 20 percent more than the national average while Asians drink 5 percent less (Mintel, *Milk*, p.6). Despite the higher incidence of lactose intolerance, African American households are also above average milk drinkers (Mintel, *Milk*, p.56). It should also be noted that African Americans and Hispanics tend to prefer the rich taste of whole milk compared to skim and low fat milk (Mintel, *Milk*, p. 68).

There are differences in milk consumption between various ethnic groups. Asians are more likely to drink soymilk, and whites are more likely to drink lowfat and skim milk and less likely to drink whole milk. It also appears that black households prefer heavy, richer tasting milk such as buttermilk and chocolate milk (Mintel, *Milk*, p.49).

An expanding ethnic market with special dietary needs and tastes preferences creates broad opportunities for fluid milk products appealing to the demand driver of ethnicity.

Indulgence - Broad

There are several ways for participants in the fluid milk industry to take advantage of the demand driver for increased indulgence. People have a strong attachment to milk, and have strong beliefs with respect to its wholesomeness. This helps explain why the demand for organic milk is increasing.

The desire for additional flavors is also an aspect of indulgence driven new products. Flavored milk products now account for almost 10 percent of total retail sales (Mintel, *Milk*, p.24). Sales of flavored milk are estimated to increase by 24 percent from 2002 to 2007, adjusting for inflation (Mintel, *Milk*, p.72). The market for flavored products has been helped by the increased use of single serve packaging. Flavored milk products are particularly well liked by consumers aged 18-34 (Mintel, *Milk*, p.4). This is particularly encouraging given that these consumers often choose to drink soft drinks. This may be a market that can be exploited by Michigan based firms. Michigan has access to both milk and fruits. Combining these raw materials into naturally flavored milk products has potential. Many flavored milk products have more fat and sugar than lowfat and skim milk and often even more than soft drinks. Introducing naturally flavored products or offering lowfat and skim milk versions of flavored products is one way to appeal to the drivers of indulgence and wellness.

Another type of milk that appeals to indulgence is carbonated milk products. These products are just beginning to be introduced and will likely compete directly with soft drinks. The range of carbonated and flavored milk products has not been fully developed and this is an area of potential growth for firms in the fluid milk industry.

Furthermore, the development of carbonated milk products creates the potential for alliances with soft drink manufacturers and others.

Another potential way to introduce products that appeal to indulgence is to offer fluid milk products that are from goats or sheep. This alternative source of milk could appeal to people looking for a different experience. It would also be a way to combine indulgence with ethnicity as some ethnic groups are more used to goat milk than milk from cows.

The potential to develop new tastes and experiences with fluid milk products creates broad opportunities with respect to the demand driver of indulgence.

Value - Limited

Of all the demand drivers the potential to take advantage of low prices is probably the most limited. To be successful, a firm in the fluid milk industry will likely have to pair value with other attributes. For example be the low cost producer of single serve milk products, or the low cost producer of lactose free milk products.

The fluid market is mature with some marketing chains well established. Federal milk marketing orders restrict the ability to offer fluid milk prices at a lower price than competitors. The ability to offer fluid milk products at prices at or below existing fluid milk products is limited.

Wellness - Broad

Milk is well established as a healthy food. Milk is an important source of calcium which is very important for bone development and strength. Consumers are also used to drinking milk products that have been fortified with additional vitamins. This implies

that developing milk products that successfully address the health concerns of consumers stand a good chance of acceptance.

There are a number of ways to target wellness. An older population will be interested in products that meet their nutritional needs. The same holds true for products developed for women (Mintel, *Milk*, p.79). Milk has traditionally been a product that has been fortified, primarily with vitamins. Additional product fortifications could be added to milk as long as milk remains to be considered pure and wholesome. One type of product has definite potential for the fluid milk market is prebiotic and probiotic products. Prebiotic products are supposed to aid the health of the gastrointestinal tract and probiotic products are said to strengthen the immune system.

Wellness is one of the reasons why sales of organic milk is increasing as well as the continuing interest in obtaining milk for cows that have not been treated with rbST. According to a consumer survey 16 percent of consumers are willing to pay more for organic milk and 12 percent prefer it to regular milk (Mintel, *Milk*, p.6). Retail sales of organic lowfat and skim milk increased by 59.1 percent from 2000 to 2002, and retail sales of whole organic milk increased by 44.4 percent during the same time period (Mintel, *Milk*, p.20).

The potential for development of prebiotic and probiotic fluid milk products, organic milk products and fortified milk products is great. The opportunity for new products appealing to the demand driver of wellness is broad.

Cultured Products

Background

Cultured products primarily consist of yogurt. The yogurt industry is undergoing profound change. The development of drinkable yogurt products is affecting both the yogurt market and the fluid milk market as well as perhaps affecting the fruit juice and soft drink market. While drinkable yogurt has been available in other parts of the world for a long time, they are a recent phenomenon in the U.S. (Mintel, *Yogurt Drinks*, p.1). The size of the drinkable yogurt market has gone from virtually zero in 1998 to \$213 million in 2003 (Mintel, *Yogurt Drinks*, p. 6). However, according to one survey only 14 percent of consumers had consumed a smoothie or yogurt drink within the past 30 days (Mintel, *Yogurt Drinks*, p. 37). There appears to be a great potential for growth in the yogurt market. While not as universally used as fluid milk, 64 percent of households consume yogurt (Mintel, *Yogurt*, p.7). However, 29 percent of those surveyed who eat yogurt did not eat it in the previous 7 days (Mintel, *Yogurt*, p.41). There is potential to increase the amount of yogurt consumed. Women are more likely than men to eat yogurt; according to a Mintel survey, 74 percent of women eat yogurt compared to 54 percent of men (Mintel, *Yogurt*, p.9). Products aimed at men may find a market.

Yogurt products are well suited to meet the demand drivers of convenience indulgence, wellness and ethnicity. The number of flavors and textures that could be used for yogurt has not been fully developed.

The yogurt market is dominated by a few large firms. In 2003, Dannon and Yoplait accounted for 64 percent of all sales (Mintel, *Yogurt*, p.6). Also, the amount of space for new yogurt products is limited (Mintel, *Yogurt*, p.35). However, there may be

opportunities for small yogurt producers through alternative distribution sources such as smaller retailers, convenience stores and health food stores.

Convenience - Broad

Convenience is a major aspect of the drinkable yogurt market. Drinkable yogurts do not need a spoon and can be consumed while driving and doing a number of other activities. Fast food restaurants, convenience stores and vending machines may be possible outlets for yogurt drinks because of their convenience (Mintel, *Yogurt Drinks*, p. 8).

Convenience also plays a role in the traditional yogurt market. Most yogurt is sold in single serve packaging. This makes it easier for consumers to use yogurt as a breakfast or lunch food.

The fluid yogurt market is still in a state of development. The opportunities for developing cultured dairy products designed to meet the demand driver of convenience is broad.

Ethnicity - Broad

There is potential within ethnic markets to expand the use of yogurt. One firm that has focused on the Hispanic market is Johanna Foods with its La Yogurt line (Mintel, *Yogurt*, p.26). Yogurt drinks also have a potential for ethnic markets. Drinkable yogurts are common in many parts of the world. Yogurt Drinks with real fruits may have the greatest potential. This appears to be particularly true for Hispanics (Mintel, *Smoothies*, p. 52).

The increased number of U.S. residents who are used to drinkable yogurt products and those who are interested in alternative flavors creates broad opportunities for cultured products that appeal to the demand driver of ethnicity.

Indulgence - Broad

Indulgence is a major source of growth in the yogurt market. Dessert style yogurts now accounted for more than half the sales growth of yogurt from 2001-2003 (Mintel, *Yogurt*, p.5). In 2001 dessert yogurts accounted for 8.7 of yogurt sales, and accounted for 16.4 percent of sales in 2003 (Mintel, *Yogurt*, p. 17). Dannon's *La Crème* line is probably the most well known dessert yogurt. Also, there has been a growth of specialty yogurts aimed at children such as Go-Gurt (Mintel, *Yogurt*, p.5).

Given the inherent nutritional value of yogurt, dessert yogurts and yogurts aimed at children have the potential to compete successfully with traditional snack food and dessert products. These yogurt products could appeal both to the demand driver of wellness and indulgence.

Yogurt drinks also have the ability to appeal to indulgence. Enhanced flavors and textures could appeal to consumers not otherwise interested in dairy products. Yogurt drinks also have the potential to be a dessert drink, particularly substituting for ice cream desserts (Mintel, *Smoothies*, p.20). This also presents a definite opportunity for Michigan based dairy firms that are interested in using Michigan fruit products, developing a cherry, apple, or blueberry yogurt drink for example.

Another way to appeal to the demand driver of indulgence is by offering yogurt products that are made from goat or sheep milk. Goat based yogurt products are common in some parts of the world, and introducing these types of products would be a method to

develop new flavors and tastes into the yogurt market. It would also be a way to combine the demand drivers of ethnicity and indulgence into through the introduction of one product.

The development of dessert yogurts and flavors that are geared towards sophisticated tastes create broad opportunities for cultured products that appeal to the demand driver of indulgence.

Value - Limited

The market potential appealing to value conscious consumers is limited. The firms that dominate the yogurt market are large and have excellent distribution systems. They also possess the financial resources to advertise and market their products. The federal milk marketing order system also restricts the potential for competing on the basis of price. Competing on price would be very difficult.

There may be some potential in the area of yogurt drinks. This line of products is still being developed, and current firms are earning a price premium. A firm willing to forego these premiums may be successful. However, the yogurt drink market is maturing rapidly, and the large firms such as Dannon are establishing themselves. Prices for Yogurt Drinks may decline in the future.

It appears that there are sufficient cultured dairy products currently available to meet the needs of price sensitive consumers. The opportunities for cultured dairy products that appeal to the demand driver of value are limited.

Wellness - Broad

There is a great deal of potential for yogurt products with respect to the demand driver of wellness. Yogurts can be formulated to add additional calcium, vitamins and

omega-3 fatty acids to name a few (Mintel, *Yogurt*, p.7). Some studies show that eating yogurt 3 times a day helped in weight loss. It is thought that the high levels of calcium were responsible for this weight loss (Mintel, *Yogurt*, p.10). The existence of calcium or active cultures are high priorities for consumers (Mintel, *Yogurt*, p.49). Health is also an important consideration in the consumption of yogurt drinks (Mintel, *Yogurt*, p. 46).

As is the case with fluid milk, distribution channels aimed at children while at school offer potential. School officials are under increasing pressure to replace soft drinks and typical snack foods with healthier food products (Mintel, *Yogurt*, p.23). Yogurt, particularly, if it was in a form and flavors that students prefer could fill this market.

Organic is another market with potential. Over half of the respondents to a Mintel survey cited naturalness or the organic nature of yogurt products as a factor of interest when making buying decisions (Mintel, *Yogurt*, p. 19).

Yogurt products are well known as being good for consumers. The opportunities for cultured products that appeal to the demand driver of wellness are broad.

Cheese

Background

It has been estimated that 98 percent of households consume cheese (Mintel, *Cheese*, p.7). Retail sales of cheese increased by 25 percent from 1997 to 2002. Furthermore, most of this increase was in the form of natural cheese. Sales of processed cheese are flat (Mintel, *Cheese*, p.5). However, cheese consumption is only half of what it is in other countries (Mintel, *Cheese*, p. 1). There remains room for increased

consumption of cheese. This is particularly true for new varieties of cheese that appeal to ethnicity and indulgence. Also, cheese will remain a major input into pizza.

The market structure for cheese is favorable for firms interested in the industry. Private label brands account for one third of all retail cheese sales (Mintel, *Cheese*, p.10), and its market share is growing (Mintel, *Cheese*, p.80). The cheese industry is not as concentrated as yogurt, and the barriers to entry do not appear to be as high. Cheese appears to be seen as a commodity to many consumers (Mintel, *Cheese*, p.11), which presents an opportunity for firms that are truly innovative in the cheese industry. It should be noted that Kraft does dominate the cream cheese market.

Convenience - Selective

Cheese is a very versatile food. It can be used as a snack food, in sandwiches, salads, pizza, and burgers to name a few. The development of shredded products has also added to the convenience of cheese. However, the range of flavors for shredded cheese has been limited. The expansion of shredded cheese flavors is a potential source of growth. One thing that could add to the convenience of cheese is to expand the use of resealable packaging beyond that of shredded or sliced products. Shrink wrap is used for many cheese products; this type of wrapping is not convenient and using resealable packaging may increase the demand for cheese products.

Another possible area of growth is in cheese spreads and cheese balls. These cheeses make it easier to consume cheese with other types of food. Many of these cheeses are considered gourmet cheeses (Mintel, *Cheese*, p.19), allowing cheesemakers to link convenience with indulgence. Making natural cheeses easier to use would enhance the demand for these products.

There are selective opportunities for cheese products that appeal to the demand driver of convenience.

Ethnicity - Broad

Ethnicity plays a complicated role in the cheese market. As previously noted, some groups have a higher incidence of lactose intolerance, although the vast majority of people do eat cheese. This makes selling cheese to these groups more difficult. However, it may be possible to increase the sales of cheese to other ethnic groups through the use of different flavors.

Whites eat more cheese than other ethnic groups (Mintel, *Cheese*, p. 13). This presents both a challenge and an opportunity. A firm that produces cheese varieties that are popular with Hispanics in particular could find a profitable market.

Producing cheese products that appeal to growing ethnic markets creates broad opportunities for such products.

Indulgence - Broad

There does appear to be an opportunity to appeal to indulgence through the use of new varieties of cheese provided the taste is not too strong. American and cheddar cheese remain the most popular varieties of cheese (Mintel, *Cheese*, p. 65). It appears that cheeses such as blue and feta are becoming less popular (Mintel, *Cheese*, p.5). However, it is also true that the demand for processed cheese is flat. Consumers are increasingly interested in the full taste of natural cheese.

Another aspect of cheese is the fact that people crave it. According to one survey, cheese ranked second behind chocolate as a food people cannot live without (Mintel, *Cheese*, p.9). Furthermore, 75 percent of those surveyed who had a household income of

\$75,000 or more ate cheese by itself (Mintel, Cheese, p.74). This is good news for the industry, but the industry needs to develop new products, packing, and markets to take advantage of this opportunity. One way to appeal to indulgence is to introduce new ways of eating cheese such as using it as a dessert item, or eating it with specialty breads.

As is the case with fluid milk and yogurt products, cheese made from goat and sheep milk also presents opportunities with respect to the demand driver of indulgence. Goat and sheep based cheese products would provide a unique eating experience, the hallmark of indulgence. These products would also appeal to certain ethnic groups as well as people interested in indulgence.

There appears to be an increase in the number of consumers interested in new varieties of cheese. Also, cheese manufacturers could produce cheese varieties that are currently imported. The decline in the value of the U.S. dollar has improved the competitive position of U.S. cheese producers. Specialty cheeses may be of particular interest in Wisconsin with its tradition of cheese production and its relatively low Class I utilization rate. Overall, there are broad opportunities for cheese products that appeal to indulgence.

Value - Selective

The United States is a major importer of cheese. Most of the cheese imports comprise imports of gourmet cheeses from Europe (Mintel, *Cheese*, p.30). Given the high cost of milk in Europe, as well as transportation costs, it may be possible for U.S. cheesemakers to undercut European cheese producers in the production of certain specialty cheeses.

It would be difficult to compete on price in the area of traditional cheese varieties. However, given the decline in the value of the U.S. dollar producing varieties that are currently imported does present some opportunities. Overall, the potential to offer cheese products that appeal to value conscious consumers is limited.

Wellness - Broad

There has been a reduction in the demand for lowfat cheeses (Mintel, *Cheese*, p.12). The market for cottage and cream cheese is not strong (Mintel, *Cheese*, p.24). This market continues to look unattractive unless there is a refocusing by consumers on lowfat products.

Young people and those 65 and older are least likely to see cheese as an important part of a balanced diet (Mintel, *Cheese*, p.58). This is despite the fact that cheese is a good source of protein (Mintel, *Cheese*, p.71). This presents a challenge to cheese manufacturers.

One way to address this challenge is through the use of organic cheese. Similarly, there is probably a market for cheese that comes from milk produced by cows that were not treated with rbST. Fully 59 percent of those surveyed would buy organic cheese if the price were right (Mintel, *Cheese*, p. 77). The interest in organic products is widespread. Another way to market cheese as a healthy food is through fortification. This could include vitamins and minerals beyond calcium. These products could be tailored to different demographic segments (e.g. children, senior citizens).

Given the interest in organic and natural cheese and the increased interest in products that improve health, there are broad opportunities for cheese products that appeal to wellness.

Butter

Background

The market for butter is showing signs of improvement. From 1998 to 2003 retail sales of butter increased from 398.1 million pounds to 452.1 million pounds; a 13.6 percent increase (Mintel, *Butter*, p.1). A consumer survey showed that 77 percent of households use butter (Mintel, *Butter*, p.41). The relative price of butter and margarine is an important consideration for consumers. The price of butter, in turn, is dependent on the price of milk.

The butter market is not concentrated. Land O' Lakes accounts for 30 percent of all butter sales. No other single firm has a market share of more than 5 percent (Mintel, *Butter*, p.26). Private label butter sales account for almost 46 percent of the market (Mintel, *Butter*, p.30). Barriers to entry do not appear to be excessive.

Convenience - Selective

Traditionally butter has been at a disadvantage compared to margarine because of margarine's superior spreadability. According to a survey, 55 percent of consumers find margarine more convenient to use than butter (Mintel, *Butter*, p.69). Improving the spreadability of butter has long been a goal of the industry. Land O'Lakes has introduced butter products with canola oil that is spreadable (Mintel, *Butter*, p.14).

If new products can be developed, there are selective opportunities for butter products that appeal to convenience.

Ethnicity - Limited

One way to appeal to ethnic consumers is through the use of labeling. For example, the labeling on Dairy Farmers of America's *Falfurrias* brand is in Spanish and

English. Hispanics consume more butter than whites, but less than African-Americans. This may be due to the fact that these ethnic groups do more cooking from scratch than whites (Mintel, *Butter*, p.43). It may be the case that marketing directly to these groups could increase the demand for butter.

However, butter is primarily a commodity. Opportunities for butter products that appeal to ethnicity are limited.

Indulgence - Selective

According to a survey, two-thirds of consumers prefer the taste of butter to margarine. Furthermore, more affluent households tend to buy more butter (Mintel, *Butter*, p. 7). The interest in authentic taste has allowed some manufacturers to introduce European styled butter with a higher milkfat content (Mintel, *Butter*, p.14).

New flavors can also be used to expand the market for butter. Garlic and honey butter are well established items in restaurants but have not been widely available in retail outlets. Other flavors and improved retail distribution could improve sales of butter.

There are selective opportunities for butter products that appeal to the demand driver of indulgence.

Value - Limited

Butter tends to be a residual use for milkfat. To a great extent the price of butter is determined by the price of milk. During times of milk surpluses, the government purchases butter to support the price of butter. When milk supplies are tight, the price of butter rises. The price of butter exhibits the classic behavior of a commodity.

The potential to attract customers who are price sensitive is very limited, particularly given the fact that a low cost substitute in the form of margarine exists.

Wellness - Limited

Butter is not considered a health food. However, butter does not contain Trans Fatty Acids (TFAs); margarine does. Therefore, butter could be positioned as a healthier alternative to margarine. This advantage may not be long lived as margarine manufacturers are removing TFAs from their products (Mintel, *Butter*, p.1).

Another way to improve the health of butter is to add ingredients to the product that would promote health. An example is Land O' Lakes spreadable butter with canola oil. This product adds convenience with a product that might improve health. Adding olive oil to butter could also be a method to improve the healthfulness of butter.

Overall, the opportunity for butter products that appeal to the demand driver of wellness is limited.

Ice Cream

Background

Ice cream is also a product that has a high level of use; 93 percent of households report eating ice cream (Mintel, *Ice Cream*, p.1). The industry has done a good job of developing products for a wide range of consumers including children, those interested in indulgence and even those interested in health (Mintel, *Ice Cream*, p.5). From 2001 through the first quarter of 2003 there were 715 new ice cream products introduced (Mintel, *Ice Cream*, p.11). It is anticipated that the ice cream market will grow by 7 percent in real terms from 2003 to 2008 (Mintel, *Ice Cream*, p.7).

While some of the largest food firms in the world are involved in the ice cream market there appears to be room for smaller firms as well. The three largest firms control 40 percent of the market, while smaller firms account for 60 percent of all sales (Mintel,

Ice Cream, p.6). Furthermore, according to a survey, only 26 percent of all ice cream consumers are single brand users. Brand loyalty among ice cream consumers is not strong. An individual firm could not only produce its own ice cream but could also sell it directly to consumers through retailing or through operating its own sit down ice cream store. Ice cream shops are a particular favorite of younger consumers (Mintel, *Ice Cream*, p.7). Small ice cream firms have been successfully operating for years.

Convenience - Selective

One way to expand the market for ice cream is to make its consumption easier. This can be done in a number of ways. The first is to expand the offerings of hand held ice cream treats targeted at adults; packaging geared towards single serving could also be useful. This is particularly the case for expensive ice creams that appeal to indulgence and only consumed as an occasional treat.

Another way to appeal to convenience is to expand the number of distribution outlets. Increased access to convenience stores and vending machines could expand the market for ice cream.

Increasing the number of ways consumers can consume ice cream products creates selective opportunities for products that appeal to the demand driver of convenience.

Ethnicity - Broad

There does not appear to be strong ethnic differences in the consumption of ice cream products. Asians do eat less than the other ethnic groups (Mintel, *Ice Cream*, p.49). It should be noted that teenagers are major consumers of ice cream and influence

purchasing decisions. African American teenagers are particularly heavy consumers of ice cream products (Mintel, *Ice Cream*, pp. 58-59).

One way to appeal to ethnic consumers is by increasing the range of flavors in ice cream. For example green tea ice cream aimed at the Asian Market, or orange ice cream aimed at the Hispanic market (Mintel, *Ice Cream*, pp. 93-94). These types of products have been introduced in some parts of the country. Packaging that uses more than one language could also be used to appeal to non-English speaking consumers.

Creating ice cream products in nontraditional flavors that appeal to ethnic tastes creates broad opportunities in ice cream products that are geared toward the demand driver of ethnicity.

Indulgence - Broad

Indulgence is a major demand driver in the ice cream market. According to one study more than 51 percent of the volume of ice cream sold is premium ice cream and 3.5 percent is super premium (Mintel, *Ice Cream*, p.10). These trends are likely to continue. Ice cream bars and other ice cream novelties are increasingly being targeted towards adults (Mintel, *Ice Cream*, p.10). Packaging for these products tends to be smaller than most ice cream; for example, Ben and Jerry's and Godiva ice cream tends to be sold in pint containers while most other ice cream products are sold in half gallon containers. Ice cream products high in fat and sugar continue to be introduced.

There a number of new products being developed that include flavors that are not associated with ice cream. Examples include: green tea, pumpkin cheesecake, and ginger to name a few (Mintel, *Ice Cream*, p.88). Various types of coffee flavorings could also be added (Mintel, *Ice Cream*, p.92).

While growing in terms of market share, these products often have lower profit margins than other ice cream products. This is due to the fact that they often have higher cost ingredients than nonpremium ice cream products (Mintel, *Ice Cream*, p.13).

Michigan is well positioned to take advantage of this trend for indulgence ice cream. Michigan is a major sugar producer and a major producer of a number of fruits. Furthermore, the state has a large number of summer tourists who may be less price sensitive than in state residents. Producing premium ice cream with fresh Michigan fruit products (e.g. cherry, blueberry, apple) could be a successful strategy. It is also a strategy that could be carried out by small entrepreneurs.

By definition consuming ice cream is an indulgence. The potential for new tastes, flavors and textures creates a broad opportunity for ice cream products that appeal to indulgence.

Value - Selective

Value plays a role in ice cream purchases. One study showed that almost one third of consumers always buy the ice cream that is on sale (Mintel, *Ice Cream*, p.65).; this appears to be particularly true of Midwesterners (Mintel, *Ice Cream*, p.70). There may be an opportunity for a larger firm in Michigan to produce ice cream based on value. The state is located close to both major sources of ingredients and population. This minimizes transportation costs.

There are selective opportunities for firms that are large enough to take advantage of economies of scale in the production of ice cream products that appeal to the demand driver of value.

Wellness - Selective

While there is a definite trend towards high fat, high sugar ice cream, there is also a trend towards ice cream products that address health concerns. Despite the fact that ice cream is not generally considered a health food firms continue to offer and introduce reduced or no-sugar products (Mintel, *Ice Cream*, p.11). This market could grow if the flavor was improved. This could be done with non-traditional flavors that have become more common with super premium ice cream.

Another trend is the introduced of fortified ice cream products. Adding calcium is perhaps the most common form of fortification (Mintel, *Ice Cream*, p.11). Vitamin fortifications could also be added to ice cream. Adding fresh fruit to ice cream would not only improve the indulgence factor of ice cream but also appeal to the demand driver of wellness.

Overall, there are selective opportunities for ice cream products that appeal to the demand driver of wellness.

Cream

Background

The growth of coffee consumption, especially indulgence coffee varieties such as latte's etc. has increased the demand for cream. For the purposes of this report half and half will also be considered cream. Between 1998 and 2003, retail sales of cream and creamer increase by one third (Mintel, *Cream & Creamer*, p.1). However, coffee shops will continue to see cream as a cost of production and look for ways to minimize this cost. Coffee shops will continue to be value oriented. Coffee shops are now a major user of cream. The number of coffee houses increased by 83 percent from 1998 to 2003

(Mintel, *Cream & Creamer*, p. 9). Younger people are least likely to drink their coffee black (Mintel, *Cream & Creamer*, p.12). This trend appears to be continuing as new coffee drinkers enter the market.

The cream market is not very concentrated. Private label sales of cream account for more than half the total retail sales (Mintel, *Cream & Creamer*, p.6). Barriers to entry in the cream market do not appear to be excessive.

Convenience - Limited

There has been an increase in the number of flavored creams for coffee introduced. This allows a consumer to obtain a coffee house experience without the additional work. Supplying flavored creams to convenience stores who sell coffee by the cup to customers on their way to work or other activities may be a source of increased demand for cream. In order to do this it may be required that these products be shelf stable.

Overall, the opportunities for cream products that appeal to the demand driver of convenience are limited.

Ethnicity - Selective

As is the case with other dairy products, the level of lactose intolerance among nonwhite ethnic groups poses a challenge. Many of these consumers will use nondairy creamers. One alternative for firms in the cream industry is to provide products that are lactose free or have reduced levels of lactose. Another way to market to these consumers is to offer flavors that appeal to different ethnic groups.

The ability to create cream products that offer flavors appealing to ethnic consumers creates selective opportunities.

Indulgence - Broad

Indulgence is the prime demand driver in the cream market. Consumers are attempting to replicate their coffee shop experience at home (Mintel, *Cream & Creamer*, p.5). This has led to the increased demand for cream.

This has increased the demand for flavored cream as well. Flavored creams appeal to both the demand driver of convenience and indulgence. The interest in richer tastes in food has carried over to cream products (Mintel, *Cream & Creamer*, p. 15). It appears that cream is being substituted for milk in coffee consumption.

The interest in creating the café experience has created broad opportunities for cream products that appeal to the demand driver of indulgence.

Value - Limited

Most consumers buy private label cream. It does not appear that consumers perceive a difference in brands of cream (Mintel, *Cream & Creamer*, p.27). To be successful, a firm will either have to offer unique product characteristics or be the low cost producer of the product. The opportunities of offering cream products based solely on value are very limited.

Wellness - Limited

Cream is not widely considered a health food. It is generally a condiment in the consumption of coffee. There may be some ways to add fortifications to cream such as calcium and selected vitamins to appeal to the demand driver of wellness. Overall, the opportunities of cream products appealing to the demand driver of wellness are limited.

Conclusion

Compared to many agri-food industries there are a number of positive trends in the dairy industry. However, in order to take advantage of these trends, an entrepreneur, whether an individual, cooperative, or processor needs to develop a workable plan of action that takes costs, size of market, the level of competition, and other factors into account. Government policy in the form of marketing orders also is a barrier to innovation. There are dairy products that can appeal to convenience, ethnicity, indulgence and wellness. While not impossible, appealing to value will be more difficult. Opportunities in fluid milk, cultured products, cheese and ice cream have the most potential for success.

The importance of dairy products in a well balanced diet has been well established. Additional fortifications, and the addition of prebiotic and probiotic product attributes could be used to appeal to the demand driver of wellness. This potential is particularly strong for fluid milk and cultured products. Organic dairy products are well positioned to appeal to both the demand driver of wellness and indulgence.

Overall, the dairy industry has not done enough with flavors. The flavors of fluid milk are fairly limited; and the few flavored fluid milk products that exist tend to be whole milk. There is potential to expand the number of flavors in fluid milk and to extend flavored fluid milk to lowfat and skim varieties. Additional flavors could also be developed for yogurt products and ice cream as well. This is a particular strength for Michigan with its large dairy and fruit industries. This presents an opportunity for a profitable partnership between the dairy and fruit industries. Related to this is the desire by some consumers for foods that are rich. This is particularly true for ice cream,

cultured products and cheese. There is a potential for the dairy industry to produce cheeses that are currently being imported from Europe. The desire for different and fuller more intense flavor addresses the demand drivers of indulgence and ethnicity. The growing Hispanic population which tends to consume more dairy products than other groups is a positive trend for the industry if the industry can meet their needs.

The fact that many industries are not dominated by a few large firms also presents opportunities for entrepreneurs in the dairy industry. There are distribution channels that have not been fully exploited. This includes increased offerings in schools, convenience stores and vending machines. Schools are under increasing pressure to offer snack food items that are healthier than soft drinks and candy. The increased interest in wellness and convenience could increase the demand for dairy products through these distribution channels. There is no reason dairy product vending machines that offered several types of dairy food could not be developed. This would be similar to vending machines that offer a wide range of snack foods.

Another area of potential product development and innovation is in the area of single serve and resealable packaging. Smaller households and the demand driver of convenience have increased the demand for single serve packaging. This would also work well with offering products that are sold in convenience stores and vending machines. Extending resealable packaging in the cheese market is another potential. Traditional shrink wrap cheese is not convenient, nor appealing to people who live by themselves.

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