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Analysis of the international dairy value added sector

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Contents

1 INTRODUCTION

This report has been produced for Meat and Livestock Australia Limited who are interested in learning from the value-added experience of other food sectors. This learning could be of use when considering the way forward for further R&D and marketing investment in value-added products derived from red meat.

Dairy was identified as a sector that has made major strides in developing and successfully introducing value-added products from the core product of drinking milk. The value-added products include variants of milk (with value added products such as flavoured milks, and functional food variants such as low-fat/vitamin enriched, omega 3 fortification), basic value-added products such as cheese, butter, yoghurt, ice cream, and milk powders, as well as specialised products and ingredients such as whey, lactose, and lactoferrin powders.

The report provides an overview of the international and Australian value-added dairy sector, identifies drivers for adding value, and summarises learning from the sector.

In addition, a number of case studies are developed from the literature as well as interviews in the dairy industry to establish answers to questions such as:

- Has the core product of milk influenced and been influenced by the perceptions of value-added products, such as health attributes?
- What are the conditions for success in developing and launching value-added products?
- Are there failures which provide insight and learning?

2 OVERVIEW OF THE INTERNATIONAL DAIRY INDUSTRY

This section examines the international value-added dairy sector. A number of countries are briefly analysed to get a view on developed countries with a well established and large dairy sector (such as the UK), developing countries with an emerging dairy sector (such as China), as well as the situation in Australia and New Zealand.

2.1 INTERNATIONAL

The international dairy industry consists of the core product of milk (with value added products such as flavoured milks, and functional food variants such as low-fat/vitamin enriched, omega 3 fortification), basic value-added products such as cheese, butter, yoghurt, ice cream, and milk powders, as well as specialised products and ingredients such as whey, lactose, and lactoferrin powders.

The sector is largely domestic-based with only about 5% exported, although certain countries (such as New Zealand at 31% of total world exports and Australia at 13%) have large export sectors, mainly in value-added products. 70% of exports are to developing countries, with trade primarily in major manufactured dairy products-butter, cheese, dry milk powders, with some trade in ice cream, yoghurt, and dry whey products. The export market is skewed by subsidies, although certain countries are reducing subsidies (such as the EU) or are unregulated (such as Australia and New Zealand).

The domestic markets internationally have tended to show an increase in consumption of value-added products over time, but this is dependent on a number of drivers, including population growth, rising incomes and westernisation of diets in the developing world, and changing consumption habits in the developed countries. Prior to 2008, in many parts of the world, the classic dairy segments (such as full-cream milk) were showing low growth, and value-added milk products, such as drinking yoghurt and whey, were gaining in popularity even though they are priced higher. This changed in 2008/09 due to the effects of the global financial crisis, where prices dropped, and there was a move back to cheaper/basic products from value added (such as a decline in ice cream and an increase in milk). In late 2009, the dairy industry emerged from the financial crisis with a positive medium-term outlook, and the demographic and cultural trends supporting dairy consumption growth resuming a normal trend. Beyond 2010, the market is expected to return to solid rates of demand growth for value-added products, driven by rising per capita incomes, population growth, urbanisation, westernisation of eating habits and government promotion.

The international sector consists of a number of large multinationals (such as Nestle, Danone, Parmalat, and Fonterra and Murray Goulburn in Australia/New Zealand) who continue to concentrate on converting their bulk commodity output into higher value added products. In the longer term, this focus will continue to drive growth and the ability to improve and stabilise returns back to the farm sector.

2.2 UK

The UK market is typical of those of highly developed economies, with a long tradition of consuming dairy products. Large food companies such as Nestle and Unilever and UK dairies are increasingly targeting the UK's value-added milk sector as they re-align their businesses and move from commodity products. Product launches and increased investment have driven sales increases of value-added milk sales to around 30% a year.

2.3 AUSTRLIA

Prior to 2009 (and the global financial crisis), the Australian dairy industry experienced high and increasing levels of consumption per person (particularly for value-added products), increased exports, high industry value add, increasing R&D investment, and higher supermarket sales for value-added products. Relevant statistics are as follows:

- Between 1990 and 2007, per capita consumption in Australia of dairy grew by 1.1% per annum in volume, whereas export value grew by 10.1% per annum. In 2008/09, $2.9billion was exported consisting mainly of value-added products (only 3% of drinking milk is exported)
- For 2008/09, dairy output was $4.0billion at farm gate, and $12billion value at wholesale, with post-farm gate value-addition of $8billion. Between 2003 and 2007, the industry value added per employee for the total food industry (IVA) has decreased with the exception of the dairy industry (up 12%). The main contributors to the dairy IVA were milk and cream processing (up 28%) and other dairy products (butter, cheese, milk powders) which increased by 11%
- Drinking milk utilisation is a minority of production at about 20 to 24%, with value-added products the remainder (cheese 33%, Skim milk powder/butter 25%, Whole milk powder 12%, casein/butter 4%, and others 2%)
- Changes in supermarket sales between 2006 and 2007 showed large increases in both milk and value-added dairy products (fresh milk and cheese > 10%, yoghurt and ice cream > 5% increase)
- R&D investment increased from $49 million in 2001 to $84 million in 2007,which is about 0.7% of sales (food industry average is below 0.5%).

This increase is largely attributed to additional investment in developing specialised 'health-based' value-added products

- Average weekly household expenditure on dairy showed a major change between 1976 and 2004, with value-added increasing by 282%, and fresh milk/cream increasing by 143%. Dairy consumption (Kg per person) in Australia is amongst the highest in the world (Australia 249, world average 80)

Dairy is thus one of Australia's leading rural industries in terms of adding value through further downstream processing. The milk processing sector is undergoing continuing rationalisation, resulting in improved factory capacity, as larger operations have improved their efficiency and economies of scale. The challenge has been to remove surplus capacity and to utilise the existing capacity as profitably as possible.

Per capita consumption trends over the past two decades have varied quite significantly by individual product. These trends reflect changes in consumer tastes and preferences in response to a multitude of variables such as multicultural influences on food trends, health perceptions about dairy products and manufacturer's responses (with low fat variants), new product development, flavour and packaging innovations, competitive category offerings, the distribution and availability of products, and the expansion of the 'coffee culture' in Australia (with shifts to low-fat, flavours, UHT). Cheese consumption has shifted from cheddar to non-cheddar varieties as consumer tastes have developed and diversified. Butter consumption slowed during the 1970s and 1980s, as people limited their intake of saturated fats.

However, dairy blends with the perceived 'naturalness' of butter products, have experienced growing popularity in the past two decades with per capita consumption of dairy spreads now around 4 kg per year. Yoghurt is the ultimate 'healthy snack' for time-pressed consumers, combining both convenience and health attributes. Growth in yoghurt sales has been underpinned by regular product innovation in the areas of packaging, flavour combinations and the use of probiotic cultures, as well as new products, such as drinking yoghurts.

In 2009 (during the global financial crisis) consumers traded down in line with trends all over the world: brands to retailer private label, functional/modified milks to plain/regular full cream milk, smaller to larger pack sizes, and less and cheaper eating out.

2.4 NEW ZEALAND

The industry has been successful at diversifying both its products, and the number of markets it exports to (over 80% of the industry's products are differentiated to some extent with significant value-added). Higher returning differentiated and customer specific products rather than bulk products are viewed as the key to increased returns, and provide possibilities for niche and high value marketing.

Products range from high quality basics such as milk powder, butter and cheese, through to speciality foods such as ice cream, and to highly specialised ingredients like spray-dried milk proteins, protein hydrolysates and freeze-dried biologically active proteins. Development of new functional foods- like low fat, high calcium and protein milk- and biomedical and biohealth products are also growing trends in the industry.

New Zealand accounts for 31% of world trade in dairy products, 2% of world dairy production, and exports 95% of its products with an emphasis of diversifying and value-addition. An example of the success of this effort is that New Zealand has 40% of the world market for lactoferrin, an iron binding protein.

2.5 CHINA

Growth in China's dairy industry is maintaining momentum, underpinned by a variety of drivers including strong demand for liquid milk, improved availability to consumers provided by fast expanding modern retail chains, and increasing brand awareness thanks to aggressive advertising campaigns by dairy processors.

Demand for dairy products in China has more than doubled in the past 5 years to reach over 25 million tonnes in 2005. UHT milk remains the biggest segment and is starting to penetrate rural areas. Consumption upgrading in developed cities will boost demand for value-added products such as yoghurt and cheese. However, consistency of quality is a major concern for Chinese consumers, particularly following the melamine scandal.

China remains a net importer of dairy products. However, its import structure has gradually shifted from importing raw material to importing more value-added processed products. This has been driven by the narrowing of price differences between imported milk powder and domestic procurement of raw milk.

2.6 SUMMARY

The international dairy sector is characterised by long-term growth in both developed and developing countries, particularly in value-added products, high

levels of value-add from milk, and a mainly domestic market with exports being low (although the Australian and New Zealand dairy sectors are dependent on high levels on export of value-added products, with consumption per person domestically being amongst the highest in the world).

The growth of value-added dairy products is dependent on a multitude of factors, including economic growth, rising incomes, and changes in consumption patterns. This was clearly demonstrated during the recent global financial crisis, where prices fell and there was a trend back to commodity products from value-add.

3 ANALYSIS OF THE VALUE-ADDED DAIRY SECTOR

The market for value-added dairy products is dynamic and affected by a combination of factors which are demand driven as well as influenced by internal efficiency and capacity reasons within manufacturing companies.

3.1 DRIVERS OF VALUE-ADDITION

Economic conditions, price, growth; growth in developing countries, westernisation, income growth, population growth, urbanisation:

The global dairy industry (including Australia) has been through two major phases over the past few decades. Until 2008, the industry experienced a period of demand growth - driven by population and income growth, changing dietary patterns and new opportunities for dairy components in innovative functional foods and nutraceuticals. The major growth was in the demand for milk and value-added dairy products influenced by increased urbanisation, westernisation of diets, and income growth in developing countries.

This positive growth situation changed in 2008 and 2009 due to the global financial crisis and resultant economic downturn. During this period, some consumers traded back to commodities, and milk consumption increased at the expense of value-added products with prices falling sharply.

The major lesson is that economic conditions have a major short-term affect on overall dairy's growth, brands, value-addition, types of products sold, and prices. There has since been the start of a recovery, and the medium to long term trends continue, as population growth, improved outcomes in developing countries and likely constraints on production point to higher prices. Economic recovery, particularly in the developing world will be a key factor in driving demand for dairy products into the medium term. Income growth and the ongoing westernisation of diets are expected to support dairy consumption in Asian markets. Rapid economic and income growth, urbanisation, and globalisation are leading to a dramatic shift away from staples and increasingly towards livestock and dairy products, vegetables and fruits, and fats and oils in Asia. Consumption patterns are converging towards a Western diet with the diversification of diets away from the traditional dominance of rice.

The long term future of dairy remains positive because of the unique position dairy holds as a highly nutritious food, and the world's increasing appetite as population continues to grow.

Substitutes:

As dairy prices rise, ingredient buyers consider substituting lower priced vegetable-based products; however, dairy's functionality has limited the ability of end-users to shift ingredient formulations. Strong consumer perceptions of the nutrition, convenience and taste benefits of dairy have underpinned demand for dairy in many markets. Dairy's health and nutrition platform, as well as its functionality as an ingredient are important aspects of its appeal. The enhancement and communication of these attributes will be required to ensure it maintains its competitive edge against substitute products.

Consumer needs: health/nutrition/wellness, convenience:

Changes in the market place for dairy are driven by the consumers' increasing sophistication and education, leading to changes in consumption and eating habits. These changes are driving the dairy industry to greater value-addition and segmentation. Value addition to dairy products implies that special ingredients or health features or variants have been added, providing the consumer with benefits that appeal to their immediate needs. In some cases, it can mean that a product has been made more convenient to prepare or consume. In other cases, it may simply mean that the product offers additional or unique flavours and textures.

These changes include:

- Health, wellness, and nutrition: The dairy industry has been particularly responsive to consumer health needs and preferences, caused by consumption changes. Milk and several dairy products are an excellent medium to generate an array of products that fit into the current consumer demand for health-driven foods. Several technologies associated with culture addition, fermentation, or both are available for creating an assortment of flavours and textures in milk products. Nutritionally improved foods with at least one nutritional improvement over the conventional counterpart have been successful in the marketplace. Product modification strategies include removal or reduction of fat, cholesterol, sodium, and calories and fortification with vitamins, calcium, fibre, and active cultures to align with health perception of consumers
- Consumers are also increasingly demanding dairy products with enhanced quality, enjoyment, and convenience, and are showing increasing concern for ethical integrity in food production systems, compliance demands on farm and processing enterprises, and issues of GM use in production inputs
- Lifestyle changes are responsible for the growth of value-added dairy products such as cheeses and yoghurt e.g. low fat, versatility of cheese

(pizza etc), snacking. Supermarket chains are feeling the impact of changing consumer lifestyles, which favour easier meal preparation and more out-of-home eating. Foodservice, restaurants, hotels are growing at a faster pace than supermarkets, providing new opportunities. Strong consumer perceptions of the nutrition, convenience and taste benefits of dairy have underpinned demand for dairy in many markets.

Science and technology/Innovation: New Product Development, new applications (due to the nature of milk):

The ability to divide milk into various components (such as fat, carbohydrates, protein and nutrients such as vitamins) creates a multitude of products. This includes products that can be used as ingredients in both food and non-food industries (such as pharmaceutical products). Concentrating nutrients through processing further enhances the nutritional value of milk and its by-products. For instance, the cheese-making process concentrates protein and fat, reduces water, and eliminates the carbohydrate component. The whey derived from cheese making can be further processed through UF to concentrate proteins of high nutritional value. Product modification strategies include removal or reduction of fat, cholesterol, sodium, and calories and fortification with vitamins, calcium, fibre, and active cultures to align with health perception of consumers.

The industry has been successful at diversifying both its products, and the number of markets it exports to. Products range from high quality basics such as milk powder, butter and cheese, through to speciality foods such as ice cream, and to highly specialised ingredients like spray-dried milk proteins, protein hydrolysates and freeze-dried biologically active proteins. Development of new functional foods-like low fat, high calcium and protein milk- and biomedical and biohealth products are also growing trends in the industry.

The dairy industry has made good progress to respond to consumers' interests in value added products by enhancing dairy's naturally existing healthful attributes with several different ingredients. Plant sterols and stanols, omega 3 fatty acids and probiotics are among several value added ingredients that have been added to dairy products. Functional dairy foods are foods that go beyond simple nutrition and have targeted actions. Various strategies have been adopted to develop functional foods: use of probiotics, which are specific live microorganisms that have a beneficial effect on the host; use of probiotics that have a beneficial effect on the microflora in the host itself; developing functional foods by adding specific ingredients that have a targeted action (e.g. conjugated linoleic acids); removing a component from the food (e.g. low-fat milk); increasing the bioavailability of a compound (e.g. calcium in yoghurt). It is recognised by the dairy industry that they must educate consumers to make changes to their eating habits and their lifestyles.

According to Euromonitor International, new products with plant sterols are a key growth area in the USA. With dairy products dominating the cholesterol-lowering food category in Europe (greater than 120 cholesterol-lowering dairy products) and the USA (greater than 20 dairy products), the dairy industry has the opportunity to continue developing value-added dairy products to meet consumer demand.

Milk is the source of a wide range of proteins that deliver nutrition to promising new food products. Isolated milk proteins are natural, trusted food ingredients with excellent functionality. Separation technologies provide the basis for adding value to through the production of proteins that provide the food industry with ingredients to meet specific needs, not possible with milk itself. The major milk proteins, casein and whey protein can be isolated by manipulating their compositional and physical properties and then by using various separation technologies to recover the proteins. Additionally, they can be processed in various ways to create a wide range of ingredients with diverse functional characteristics. These ingredients include milk protein concentrate, milk protein isolate, casein, caseinate, whey protein concentrate, whey protein isolate, hydrolysates, and various milk fractions. Within each of these ingredient categories, there is further differentiation according to the functional and nutritional requirements of the finished food.

Dairy ingredients are used in bread making for their nutritional benefits and functional properties. Ingredients include Skim milk powder, sodium caseinate, casein hydrolysates, whey protein concentrates. Functional benefits of dairy ingredient incorporation include improvement of dough handling properties and bread quality due to milk fat and protein. Adding value to milk by expanding from consumer products to ingredients often requires different technologies, marketing structure and distribution channels; despite these changes, many companies still want consumers to know that their value-added products are made from milk (an example is Pepsi in the USA want consumers to know that it's new Quaker 'Milk Chillers are 'made with milk').

Government regulation:

Government regulations can affect alteration of milk composition (e.g. minimum fat requirements in Cheddar cheese). They also include increased regulatory and labelling pressures in relation to the health claims associated with new dairy products.

In the EU, a number of major dairy companies have said that capitalising on higher margin value-added products will be necessary to offset Common Agricultural Policy reform and remain competitive internationally. These considerations are driving product innovation within the sector.

Need for efficiency and margins: diversification, new products, markets, higher prices, capacity utilisation:

The dairy industry has identified the need for diversification to increase sales of milk-based products. As a result, R&D undertaken by value adders has been focused on the development of a broad range of new products covering an increasing number of market segments.

Increased worldwide capacity is likely to encourage increased international competition at the commodity level. This will accelerate an existing push by Australian dairy companies to seek additional value from their available milk pool by shifting their product mix towards value added, higher return product lines and new dairy components. The need to secure operational plant efficiencies and margins at times of reduced milk flow will also press manufacturers toward value added products. In Australia, the milk processing sector is undergoing continuing rationalisation. This has resulted in improved factory capacity, as larger operations have improved their efficiency and economies of scale. The challenge has been to remove surplus capacity and to utilise the existing capacity as profitably as possible.

Retailers:

Supermarket chains are feeling the impact of changing consumer lifestyles, which favour easier meal preparation and more out-of-home eating. Foodservice, restaurants, hotels are growing at a faster pace than supermarkets, providing new opportunities for value-added convenience foods.

Pressures from the export, grocery and foodservice marketplace include the ongoing pressure to innovate in process and product to maintain a domestic market value growth and enhance operating margins, and the pressure to take advantage of opportunities in the export markets.

3.2 CASE STUDIES OF VALUE-ADDITON

NESTLE:
How does Nestle perceive milk in the context of value-addition, and how is this communicated to the public?
Nestle emphasise the following:

- milk is part of (and core) of a healthy and versatile family of products
- the core product has been used to produce many value-added products that are healthy because of the core product's attributes
- both the core product and value-added products need to be incorporated in the diet
- recommendations from Nestle are made on the basis of scientific and clinical research findings

The following quotes emphasise Nestlé's approach: "Milk is one of the most widely consumed and varied products in the world. It is a major ingredient in thousands of beverages and foods. Milk comes in many varieties and its health benefits are well researched and documented. Milk is packed with essential nutrients and it has more nutrients than any other single food. Its versatility allows it to be consumed hot or cold, to be used to make milk-shakes and smoothies, and to be added to coffees, teas and hot cocoa for added nutritional value." "Milk contains more than 10 essential nutrients that can promote health and prevent disease". "As part of a balanced diet, a 240 ml glass of milk provides energy and nutrients that keep the body healthy throughout the lifecycle." "Flavoured milks including chocolate, vanilla, strawberry and coffee are well liked and popular among children and adults. Much research has been conducted on the benefits of flavoured milks. The research concludes that these beverages are nutritious and may be more accepted by children." "Milk and milk-derived products can be included in the diet and provide health benefits; examples include flavoured milks, yoghurt, smoothies, low-fat cheese, ice cream and frozen yoghurt."

ANLENE (FONTERRA)
Anlene is a range of products specially formulated for adults who may be lacking in essential bone nutrients. It is enriched with a combination of essential bone nutrients- calcium, vitamin D, vitamin K1, magnesium, zinc and protein.

Anlene is a US$280m brand globally and world leader in clinically-backed health products. Its sister brand Anmum- a range of milk health products for pregnant and nursing women- is proving similarly successful delivering about US$70m last year. Anlene was launched in 1991 in Asia with low-fat, and no-fat variants, and the range was extended with a low fat, UHT, one-shot and high-dose concentrate in Asia in 2008.

Based on extensive scientific evidence and research through independent clinical trials, Anlene consumption helps to maintain bones. By 2009, over US$50m of leading bone science research, a team of 19 nutritionists and some innovative thinking on the part of Fonterra's product development team resulted in Anlene.

"The results were instant. Initial research in Asia showed women consuming Anlene benefited from a lower rate of bone loss."

Fonterra and General Electric's Healthcare Lunar business (industry leader in bone assessment technologies) formed a partnership (from 2006) to tackle growing global health problem of osteoporosis. The International Osteoporosis Foundation (IOF is supportive of the initiative, and data from the program is shared with lead agencies, including the IOF.
The partnership has a consumer awareness campaign, provides free ultrasound bone health scans in many Asian countries (in shopping malls, streets, workplaces). Anlene promotional activities in Asia include dancing and walking events as well as sampling and health professional visits to retail centres and health clinics.

The brand has been successful because of a combination of: continuous innovation in science and technology; a clinically proven position; innovative and eye-opening marketing communication techniques; packaging innovation; a premium price position. Fonterra focused on ensuring that all of the key marketing elements were in place in Asia- excellent product backed by scientific research and clinical trials, supported by appropriate distribution and promotion.

However, it is very important to be first as a value-added branded price-premium product, otherwise it is difficult to gain share and be profitable. This view is supported by evidence from New Zealand; Fonterra withdrew Anlene from the New Zealand market in 2009 following poor sales. The product was launched in 2006 after other high calcium and vitamin D rich dairy bone-building products were already established. Require good marketing- 4Ps obvious in this case.

MURRAY GOULBURN CO-OPERATIVE (MGC)
MGC is the major Australian dairy manufacturer, with 35% of all Australian milk production, and $4billion in revenue.

MGC's 2009 Corporate Strategy emphasise both high-quality milk growth, as well as an emphasis on innovation and value added products in order to meet the vision of being "the first choice supplier of customised dairy based products to our chosen markets". The emphasis on value addition has been emphasised by the effect of the Global Financial Crisis where low dairy commodity prices served to highlight the importance of developing value added products that can shield against downturns in the commodities market and consistently return a premium.

The Corporate Strategy identifies Key Performance Indicators for value-added: the major portion of MGC sales to be in value-add and retail within 5 years; a significant level of global ingredients sales are to be in value-added products and activities;

increase overall MGC profits through specialised products (relative to commodity price);identify and commercialise new protein and related by-product ingredient opportunities (NOTE: detailed targets have been removed for confidentiality reasons).

MGC's product mix has shown a 10% increase in value-added volume between 2005 and 2009, with a major effort to increase ingredient sales (in addition to cheese, butter, and UHT products). Ingredients include: Skim milk powder, full fat milk powder, milk protein concentrate, buttermilk powder, cheese products, milk fat products, whey products, caseinate, casein (total of about 42 ingredient varieties).

MGC's research and development activities continue to have two primary goals: the continuous improvement of manufacturing operations including associated product quality and consistency and secondly, the development of improved and new ingredients and products to meet the demands of customers globally. The focus is on continuous improvement of product quality and consistency, reducing costs of manufacture and development of innovative products.

Details of the MGC Innovation Strategy are as follows:

- MGC want to create the environment to support innovation and continuous improvement, with a strategy to continuously move to higher value product mix
- PROCESS DEVELOPMENT AND IMPROVEMENT, INCLUDING ENVIRONMENTAL SUSTAINABILITY*:* Develop, commission, new processes and improve existing processes to increase yield, produce high quality products, reduce environmental impact, including extracting valuable products from waste streams
- PRODUCT DEVELOPMENT AND NEW PRODUCT INNOVATION: Develop new products and improve existing products with value-added consumer benefits for the Australian and export markets
- $30m capital expenditure for new value-added products over next 2 years
- The implementation of the Strategy requires an in-depth look at value-added opportunities. For example, there are 20 fat based products from milk, and this portfolio needs to be optimised in terms of profitability, spare capacity, cost of new capacity, market opportunities, which will result in a shift to higher margin value-added products

The author interviewed 3 senior staff members at MGC, who are representative of both Innovation/R&D, and Marketing (see Attachment 1 for details of the discussions). A summary of the major points and learning is as follows:

- DRIVERS FOR VALUE-ADDITION: need specialised products to provide consistently high prices/margins to balance large price variations in

commodities like milk; milk is perishable, and need to convert it for preservation (e.g. milk powders, UHT); high push from supermarkets who want excitement, innovation (particularly in their house-brands), and to keep customers interested; major international trends are convenience/snacking (e.g. single-serve with flavours), and nutrition (because milk is perceived as 'healthy'); innovation in value-addition includes product, packaging, and the way it is marketed (e.g. cross-selling cheese in 'fresh' areas of supermarkets as an addition to salads, use of cream as an ingredient in cooking); need to focus on the benefits of value-added products not details of the product itself e.g. consumption of the product will lower cholesterol, or will build bones

- GROWTH TRENDS: Milk sales are 'flat' (with nearly 100% penetration and 1 to 2% growth per annum), but value added milk products (such as omega 3)are growing with high margins, but are still a small niche market with high fragmentation of products; the major growth opportunity is to increase dairy consumption in markets such as China; new markets of value-add has resulted in small amounts of cannibalisation, but generally provided new growth (e.g. low-fat milk is a shift, shredded cheese is new growth for pizza); milk and value-added variants do not cannibalise each other, but grow the total market and consumption; e.g. the product used changes with the family life-cycle (older empty nesters will buy low fat or functional milk, family with young children will buy core product, teenagers may want flavoured milk etc)

- PERCEPTIONS OF MLK AND VALUE-ADDED PRODUCTS: Dieticians would recommend low-fat milk as healthy and a recommended part of a balanced diet; the core product is unaffected by value-addition, but they complement each other (e.g. in reinforcing health attributes); milk has no 'baggage' unlike other products (e.g. red meat with concerns about cholesterol); in general, perceptions on value-added products is positive-MGC changed minds externally through effective communication (opinion leaders, sports people, health professionals, science/research results) and internally, the major argument is that additional margins are available from value-addition (e.g. spray-drying whey as a protein product), use of waste, and the fact that value-addition in dairy is relatively easy (no major capital, easy to add ingredients/flavours); companies manufacturing products perceived to be less healthy (e.g. Coca Cola in soft drinks, Kirrin in beer), want to be in the milk market because of its healthy image

- R&D FOCUS: For nutritional products, require lots of science and these are difficult to commercialise (patents etc); for R&D investment: about 10%of projects are completely new value-added, and the rest are aimed at improving productivity/yield, developing line extensions, and improving the

environment and quality); value-added R&D is largely driven by consumer needs/possible increase in sales, and sales staff influenced by supermarkets

- EXAMPLES OF VALUE-ADDED FAILURE: MGC liquid cheese in squeeze container failed because of price, impractical (some cheese left behind), taste, and quality. Fonterra's Anlene did not succeed in Australia/New Zealand like Asia because the product was launched into a mature calcium-enriched milk market (e.g. strength of PhysiCAL milk using opinion leaders, health professionals, sports people etc), and the communication benefits about calcium had little impact as this is already well understood in Australia/New Zealand

3.3 SUMMARY

The long-term growth of the international value-added dairy sector is being driven by a number of factors, which include:

- Conditions in the economy: government regulations, economic conditions
- Market pull by customers: westernisation of diets in developing countries, changes in lifestyle and consumption patterns, role of retailers
- Push by dairy companies: need for efficiencies/margins/capacity utilisation, innovation/R&D/new applications and markets

Learning from major dairy companies such as Nestle, Fonterra, and Murray Goulburn can be summarised as follows:

- The health perceptions of milk and value-added variants are generally positive, and reinforce one another. However, this perception needs to be backed up through science, research, and trials
- Although value-added products are growing in line with the trends, new products need to be innovative, of high quality, and supported through research and development, and marketing

4 CONCLUSIONS AND LEARNINGS

The major learning from the success of value-addition in the international and Australian dairy sector is as follows:

- The medium-to-long term trend in the dairy industry is generally for both the core (drinking milk) and value-added products growing, with the major growth being in value-added products. This has largely occurred because of the ability of the dairy industry to understand and meet changing drivers, particularly the growing desire of consumers for healthy and convenient products which are reasonably priced. However, the growth trend for value-added products is complex and subject to short-term influences, such as the global financial crisis in 2008 and 2009.

- Value-added products need to b e differentiated from competitive products and supported by above average levels of marketing, R&D and innovation investment (including scientific and clinical trials as required). Despite this, products can fail if they are introduced late into the market where competitive products already exist, and where problems (such as high price, and poor quality exist. For specialist ingredients, need to focus on specific applications where the products exceed the performance of substitutes, and create barriers to entry.

- The perception of milk (particularly low-fat) is positively affected by the properties of value-added products (such as in the health area); this relationship is synergistic, as milk also provides positive attributes to value-added products.

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6 ATTACHMENT

SUMMARY OF INTERVIEWS WITH DAIRY COMPANY SENIOR PERSONNEL
DISCUSSION: (Innovation Manager), (Cheese Manager),

- Drivers to value add: need specialised products to provide consistently high prices/margins to balance large price variations in milk, cheese etc; milk is perishable, and need to convert it for preservation (e.g. milk powders, UHT); high push from supermarkets who want excitement, innovation, and to keep customers interested
- For nutritional value-add products with high margins, link products to milk to get benefit (both ways) of health perceptions of milk (particularly low-fat milk); require lots of science, difficult to commercialise (patents etc)
- Milk sales 'flat', but value added products growing
- Dieticians would recommend low-fat milk as healthy and part of diet; value-added milk (e.g. omega 3 supplement) are still small in sales
- R&D projects: about 10% is completely new value-added, rest is productivity/yield, line extensions, environment, quality, new markets etc of Value-add has resulted in small amounts of cannibalisation, but generally new growth; e.g. low-fat milk is a shift, shredded cheese is new growth (e.g. for pizza); value-added R&D largely driven by consumer needs/possible increase in sales, and sales staff influenced by supermarkets
- Major growth opportunity is to increase dairy consumption in markets such as China
- Failure: liquid cheese in squeeze container, because of price, impractical (some cheese left behind), taste, quality

DISCUSSION: Marketing Manager,

- Milk has no 'baggage' unlike other products (e.g. red meat with concerns about cholesterol), and (with variants) has over 99% penetration in Australia. Milk consumption in Australia is 2 billion litres per annum, UHT 12%, functional small
- The core product is unaffected by value-addition, but they complement each other (e.g. in reinforcing health attributes)
- Milk and value-added variants do not cannibalise each other, but grow the total market and consumption; e.g. the product used changes with family life-cycle (older empty nesters will buy low fat or functional milk, family with young children will buy core product, teenagers may want flavoured milk etc); milk products are also versatile (e.g. Cereals, coffee)

- Focus on benefits not details of the product itself e.g. will lower cholesterol, will build bones
- Functional milk market is small, niche, high margin; has led to fragmentation in a small niche market
- Consumption of the core product is mature (nearly 100% penetration) with growth of 1 or 2% p.a. Good growth off a small base for value-added milk, and this will continue in the future through innovation
- Companies manufacturing products perceived to be less healthy (e.g. Coca Cola in soft drinks, Kirrin in beer), want to be in the milk market because of its healthy image
- Major international trends are convenience/snacking (e.g. single-serve with flavours), and nutrition (because milk is perceived as ‘healthy’)