

3.0 MALAYSIA INFANT FORMULA INDUSTRY - EXTERNAL ANALYSIS USING PORTER'S FIVE FORCES MODEL OF COMPETITION



Figure 5: The five forces model of competition
Source: Hilt et. al., 1999

3.1 First Force: Rivalry among competing firms

3.1.1 Market analysis

The infant formula market is very much influenced by social, demographic and economic conditions. Urbanisation, increasing population of working mothers and shorter breast-feeding duration has helped to grow the infant formula market as a whole. On the other hand, lower birth rates in 1998 and 1999 (lower than usual rate of 2.3% of total population from 1991 - 1995), strong breast-feeding lobby and the recent Asian economic crisis has slowed the growth of infant formula market.

Among the above-mentioned factors, Asian economic crisis has the greatest impact on parents' decision making of infant formula for their babies as it affected their monthly allowance for milk powder. An estimate of average spending on premium priced infant formulas per baby is about RM150 per

month. Therefore, unemployment rate for instance, has direct influence on market volume of premium priced infant formulas (Table 3 and 4).

Table 3: Unemployment rate in Malaysia
Source: Bank Negara Malaysia and DUMEX (1999)

Source: Bank Negara Malaysia				Source: DUMEX
Actual 1996	Actual 1997	Actual 1998	Actual 1999	Expected 2000
2.5%	2.7%	3.2%	3.0%	3.0%

Table 4: Premium Formula market volume variance in comparison with the year before – West Malaysia

Source: A. C. Nielsen (1996 – September/October 2000)

Actual 1996	Actual 1997	Actual 1998	Actual 1999	Expected 2000
10%	11%	-8%	9%	9%

Currently, there are thirteen milk companies in Malaysia; out of which, only two companies are without infant formula (Table 5).

Table 5. Milk companies and brands of infant formula in Malaysia

Company	Standard formula		Premium formula	
	Infant Formula	Follow-up Formula	Infant Formula	Follow-up Formula
DUMEX	Dumex Infant Formula	Dumex Follow-up Formula	Mamex	Mamil
Nestle	Lactogen 1	Lactogen 2	Nan 1	Nan 2
Dutch Lady	Dutch Baby 1	Dutch Baby 2	Frisolac 1	Frisolac 2
Snow	Not available	Not available	Snow P7β	Snow Fplusβ
Wyeth	Not available	Not available	S26	Promil
Mead Johhson	Not available	Not available	Enfalac	Enfapro
Abbott	Not available	Not available	Similac Advance	Gain
Nutricia	Not available	Not available	Bebelac 1	Bebelac 2
Meiji	Not available	Not available	Meiji FM-T	Meiji FU
Morinaga	Not available	Not available	Morinaga BF	Morinaga Chil Mil
Milupa	Not available	Not available	Aptamil	Milumil
F & N Dairies	Not available	Not available	Not available	Not available
New Zealand Milk Products	Not available	Not available	Not available	Not available

Infant formula market was segmented into Standard Formula and Premium Formula. Differentiation between both segments is based on pricing, country of origin and product formulations.

Standard Formulas are priced at least 60% less than Premium Formulas; raw materials for Standard formulas are imported but they are blended locally. Thus far only three milk companies are marketing Standard Formulas i.e. DUMEX, Nestle Sdn. Bhd. and Dutch Lady Milk Industries Sdn. Bhd. Even though Standard Formulas are the most profitable among milk powder segments (about 25 to 40% of gross sales), the enormous cost needed in setting up blending facilities locally is still the primary deterrent for other milk companies to be directly involved in Standard Formula segment. Other major deterrents are the stricter Code of Ethics and the increasing consumers' preference for Premium Formulas.

In term of product formulation, the major difference between Standard and Premium Formulas is the vegetable oil content where Standard Formulas contain about 20% vegetable oil while Premium Formulas are having 100%. Minor additional nutrients are also added into Premium Formulas to increase consumers' acceptability of the premium pricing.

Looking at market value (Table 6), combined Standard and Premium Formulas are of the highest among all segments of milk powder in Malaysia. The high value is attributed to the high pricing of Premium Formula.

Table 6: Year 2000 market volume and value

Milk powder segment	Volume (tonnes)	Value (MYR'000)
Standard Formula	13,240	193,350
Premium Formula	6,520	168,430
Growing Up Milk	20,970	306,700
Full Cream	16,970	206,760
Low Fat / Hi-Calcium	3,930	63,700
Mama Milk	190	7,300
Total	61,820	946,240

Market growth in year 2001 for combined Standard and Premium Formulas is predicted to be stable with major contribution from the Premium Formula segment (Table 7).

Table 7: Year 2000 and 2001 market growth

Milk powder segment	2000	2001
Standard Formula	3	0
Premium Formula	12	10
Growing Up Milk	18	8
Full Cream	-10	-12
Low Fat / Hi-Calcium	18	8
Mama Milk	5	4
Total	5	1

Volume in Premium Formula segment has continued to decline since 1998 due to economic crisis. Dioxin scare in mid 1999 deteriorated the decline further as almost all Premium consumers switched from Premium Formulas to Standard Formulas in order to avoid infant formulas imported from European Union countries. However, it is expected in year 2000 that Premium segment will show a double digit 12% growth. On the other hand, the volume growth rate for Standard Formula will lessen to 3% after a substantial 12% growth in 1999 at the expense of the Premium segment.

3.1.2 Competitive analysis

The infant formula competitive share scenario is stable over time, which shows that brand loyalty in infant formula segment is high and brand conversion is difficult and a long process. As marketing activities were greatly constrained under the Code of Ethics, most milk companies have chosen product development route in order to leverage brand perception in the mind of health care professionals. The main competitors especially the premium brands have regional or global product development strategies. This enables aggressive R&D, clinical trials and medical marketing materials done centrally.

Year 2000 saw Premium Formulas making a comeback from the economic crisis and dioxin scare. Premium brands are now in the race to update their formulations with nucleotides, a nutrient proven capable in enhancing a baby's immune system for protection against certain diseases. The pioneer and most aggressive company to use this feature is Abbott which market Similac Advance.

The next step expected in new product development is on docosahexanoic acid (DHA) and arachidonic acid (AA), as this has been undergoing applications for registration approvals, particularly by Mead Johnson. Wyeth however, continues its consistent promotional message of beta-carotene, but is also adding nucleotides in other Asian markets. Snow, the market leader in Premium Formula segment, apparently have follow Wyeth's strategy with the re-launch of Snow P7 β infant formula and Snow F-Plus β follow-up formula with beta-carotene in June 2000.

In strong pursuit of making a comeback from lost market shares, Nan from Nestle has added bifidus, 'friendly' bacteria which aids food digestion, to its follow-up formula. Medical marketing to health care professionals has heavily supported this feature. However, this development has not been rated as successful although the same ingredient that was added in Nestle's growing up brand (Neslac) has strengthened the brand equity of Neslac. Further consumer marketing of Neslac and the immunity function of bifidus may prove to be successful later. Among milk companies which market Premium Formulas, Abbott, Mead Johnson and Wyeth are perceived to be the forerunners of infant formula development and well positioned in the minds of the medical profession.

Besides new product formulation, Wyeth also explored innovative packaging. Nursoy, a special infant formula for lactose intolerance babies and S26 infant formula have been introduced recently in an easy to prepare one serving sachet.

Among the Standard Formulas, Dumex has been the most aggressive in product development over the past two years, by upgrading the essential fatty acids profile. Plan for new product formulations is in place within the next five years. Innovative technical support to Nutrition Services Team has proven to be one of the key success factors as well where new detailing method using laptops was explored since early 1999.

Meanwhile, Lactogen has not been active at all and has been losing market shares since mid 1999. Dutch Lady's strategy of separating the infant formula and follow-up formula from originally one product in 1997 has marginally gained some shares, again at the expense of Lactogen. However, drastic formulations changes in mid 2000 to be similar as Premium Formulas are expected to have negative impact on taste acceptance among current consumers.

Following table shows the market shares positions and pricing levels of the main players in Malaysia milk industry.

Table 8: Market shares positions and pricing levels – combined Standard and Premium Formulas

Source: A. C. Nielsen, September/October 2000

Company	Brand	Price index	Volume share	Value share
Infant Formula market size (Estimate 2000)		Infant formula only	19,760 tonnes	RM360 million
DUMEX	Dumex Infant Formula / Follow-up formula	100	30%	24%
	Mamex / Mamil	176	2%	3%
Nestle	Lactogen 1 / 2	98	27%	20%
	Nan 1 / 2	176	6%	9%
Wyeth	S26 / Promil	209	5%	9%
Mead Johnson	Enfalac / Enfapro	174	3%	4%
Abbott	Similac / Gain	174	2%	9%
Snow	Snow P7β / FPlusβ	157	8%	10%

3.2 Second Force: Threat of new entrants

According to Hitt et. al. (1999), new entrants to an industry can threaten existing competitors. New entrants bring additional production capacity. Unless product demand is increasing, additional capacity holds consumers' costs down, resulting in less sales revenue and lower returns for all firms in the industry.

In Malaysia infant formula industry scenario, the possibilities of a new entrant into Standard Formula segment are practically zero. The number of milk companies with infant formulas has remained the same as fifteen years ago. Even though recent news has it that Japlo, a baby toiletries company, are importing a Premium Infant Formula into Malaysia, it has thus far did not materialize.

A number of high entry barriers are explained as follows:

3.2.1 Economies of scales

Entry barrier caused by economies of scale has deterred many milk companies from venturing into Standard Formula segment. DUMEX, Nestle and Dutch Lady have gained scale economies over the years through major business functions i.e. marketing, research and development, purchasing of raw materials and manufacturing. New entrants inevitably will face a dilemma when existing competitors have scale economies (Hitt et. al., 1999). Small-scale entry places them at a cost disadvantage. On the other hand, large-scale entry, where the new entrant manufacture large volumes of a product to gain scale economies, will risk strong reactions from established competitors.

Hitt et. al. recommended mass customization for large numbers of small consumers groups as an effective mean to gain market entry. Companies manufacturing customized products learn how to respond quickly to customers' desires, rather than developing scale economies. Unfortunately in infant formula industry where product quality and nutritional values are the utmost important selection criteria, customization of infant formulas are not advisable. It will definitely encounter parents' violent objections.

3.2.2 Product differentiation

Product differentiation can be best explained from the point of brand equity. Brand equity represents the 'added value' endowed to a product as a result of past investments in marketing of a brand (Project Multiple, 1999). It helps to provide direction and focus to future marketing activities. In another word, brand equity is defined as the differential effect that knowledge about the brand has on consumers' responses to the marketing of the particular brand.

Brand equity is calculated by:

- Measuring what consumers know about the brand (brand knowledge)
- And by measuring what happens as a result of this brand knowledge (outcomes of brand equity) i.e. customer loyalty and ability to command a premium price

Table 9: Brand equity index – Infant formula and Follow-up formula
Source: Project Multiple (DUMEX, 1999)

Infant formula	Brand equity index
Standard Infant Formula	
• Dumex Infant Formula	2.7
• Lactogen 1	1.7
• Dutch Baby 1	0.8
Premium Infant Formula	
• Snow P7L	1.3
• S26	0.5
• Similac	0.4
• Morinaga 1	0.4
• Enfalac	0.4
• Frisolac 1	0.4
• Bebelac 1	0.4
• Mamex	0.3

Follow-up formula	Brand equity index
Standard Infant Formula	
• Dumex Follow-up Formula	2.6
• Lactogen 2	2.1
• Dutch Baby 2	0.8
Premium Infant Formula	
• Snow Fplus	1.3
• Nan 2	0.8
• Promil	0.5
• Mamil	0.3
• Enfapro	0.3
• Gain	0.3
• Morinaga 2	0.3

Brand equity is particularly important for infant formulas, as it will help to create brand loyalty. Brand loyalty in return, has time and time again proven to be the barrier for parents to switch formulas. Established brands such as Dumex, Lactogen and Snow have been perceived by customers to be unique.

This perception can result from service to the customers, effective promotional campaigns, or the company being the first to market a particular product. DUMEX for example, is the first milk company with Standard infant formula while Nestle is the pioneer in Standard follow-up formula (Lactogen 2).

However, circumstances can be the culprit in establishing a brand name. Snow infant formulas from Australia, for instance, was launched in mid 1980s during the Chernobyl crisis when radiation issue was a major concern for imported infant formulas from Europe. Once again in mid 1999 during the dioxin scare, Snow was proven to be the major market shares gainer.

Typically, new entrants must allocate significant resources over a long period of time to overcome existing customer loyalties. To combat the perception of uniqueness, new entrants frequently offer their products at lower prices. For example, Snow infant products are priced relatively lower than other Premium Formulas. This can result, however, in lower profitability or even a loss for the new entrant unless lower pricing is justified by volume of sales.

3.2.3 Capital requirements

Competing in any new industry requires resources to invest. In addition to physical facilities, capital is needed for inventories, marketing activities, and other critical business functions. Although competing in a new industry may appear attractive, the capital required for successful market entry may not be available.

3.2.4 Access to distribution channels

Effective means in distributing products developed over time. Once developed, firms nurture their relationships with distributors (Hitt et. al., 1999). Such nurturing creates switching costs for distributors. New entrants must persuade distributors to carry their products, either in addition to or in place of existing firms' products. Methods use to persuade distributors are price breaks and cooperative display allowances, but their use reduces the new entrant's potential to earn above-average returns.

Japlo for instance, attempt to take advantage of the established distribution channels for its baby toiletries to launch a Premium Formula. However, their efforts were hampered by an important factor which are not within their control i.e. Code of Ethics.

3.2.5 Code of Ethics for Infant Formula Products

Since early 1999, Vetting Committee has incorporated Malaysia Food Regulations 1985 as one of the key requirements for infant formula product labels before approval codes are granted. Unlike previous practice where Vetting Committee is a different entity from Food Quality Control Department, nowadays non-compliance product label need to undergo amendments if it is found to contain food ingredients not gazetted under the Food Regulations. Although infant formula food-labelling act was in Food Regulations 1985 since it was gazetted, steps in enforcing it were only taken recently through the Vetting Committee. In fact, this is the entry barrier face by Japlo new infant formula range.

In addition to Malaysia Food Regulations 1985, time is another issue face by infant formula companies in their attempt to launch new products. In order to be competitive, newly formulated infant formulas need to be launched as soon as approval codes for product labels are obtained. However, the Vetting Committee only meets up once in two months. Furthermore, quota on number of label submissions and first-in-first-out queuing procedure are practised. Thus infant formula companies need to ensure that new product labels are submitted at least four months in advance before the scheduled meeting; this has proven to be a major disadvantage and 'heartache' in new product development for infant formulas.

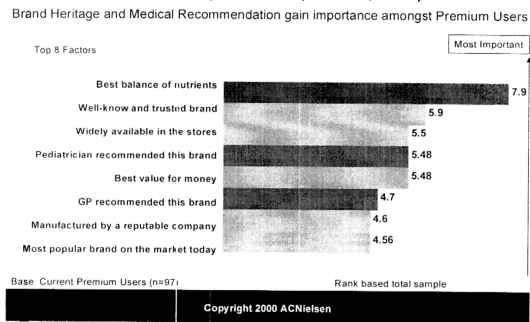
3.3 Third Force: Bargaining power of buyers

From infant formula industry's perspective, the direct buyers of infant formulas are health care professionals while parents are the indirect buyers. Knowing the importance of health care professionals' recommendations, every milk

company is putting in efforts to convince them that their infant formulas are more beneficial to babies than the others.

The importance of medical professionals' recommendations for infant formulas was reflected in Project Rattle results (DUMEX, 2000). Even though nutritional values and branding are still the key criteria for infant formula selection from consumers' point of view, medical recommendations or endorsements are gaining 'popularity' and cannot be ignored by milk companies especially in Premium Formulas segment. On the other hand, Premium Formulas users are not taking doctors' advice blindly as this group of consumers usually is from higher education background and staying in urban areas. Thus advice has to be supported by strong perceptions in terms of nutritional values and brand heritage.

Figure 6: Overall Importance of Factors driving IF
Source: Project Rattle (DUMEX, 2000)



Most health care professionals are aware that their endorsements are greatly valued by milk companies. With this in mind, certain health care professionals

have continuously use their 'strengths' to demand sponsorships in cash or in kind from milk companies in exchange for recommendations of infant formulas. In order not to miss any little opportunities left to promote infant formulas, most milk companies will submit to their demands.

Even though health care professionals give the much-needed weight and assurance for parents to start their babies on certain infant formulas, there is a major downside to this current practise. As infant formula brand choice is a function of recommendations by health care professionals, consumers/purchasers may not have a sufficient impression of brands to form segments. Segmentation of infant formula may best be done from the doctors' perception of brands. No formal segmentation study has been done, but most doctors will be able to place the brands in two categories (Project Premium, 1999):

- Standard brands that offer good basic nutrition for babies
- Innovative brands that are perceived to be constantly updated scientifically and has a foreign (usually American) image

Among local brands, the main standard brands are Dumex and Lactogen. Doctors, who are sceptical of differentiation between formula brands or benefits of new ingredients, would recommend these main brands.

3.4 Forth Force: Bargaining power of suppliers

The major part of current world milk trade is carried out by large organizations that need to be consulted regularly. New Zealand's exports, for example, are all made through a single body, the New Zealand Dairy Board; Dutch and Danish exports are through a handful of large corporations.

Termed as the 'Milkman of the world', New Zealand Dairy Board has monopolized the raw milk powder and ingredients supply in Malaysia. Practically the Board does not only control powder supply but also price determinations in its export markets. Indeed, Southeast Asia and South Asia

accounted or nearly 60% of New Zealand's skimmed milk powder exports and nearly half of whole milk powder in the 1998/99 season (Asia Pacific Food Industry, 2000). In that year, Malaysia, Taiwan, Indonesia and the Philippines together took in 38% of skimmed milk powder shipments, or more than 40% of total export value. Following table shows profile of milk products imported in Malaysia.

Table 10: Summary profile of net imports (volume)
Source: Mohd Jani b. Mohd Fauzi (1985)

Milk products	%
Skimmed milk powder	46.7
Full cream milk powder	33.7
Infant milk powder	17.1
Other dairy products	1.7
Liquid milk	0.5

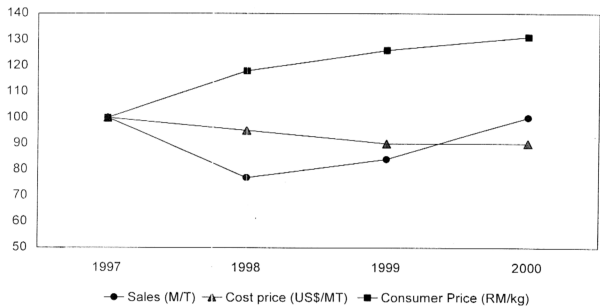
A week NZ dollar and strengthening prices, as well as unflagging efforts at launching and marketing new products, somewhat mitigated the negative effects on Asian sales in the aftermath of the region's crisis. Peter Wynne, regional services manager for New Zealand Dairy Board observed: "We have seen a recovery in general through the whole of Asia from the lows of the previous year. The whole dairy market is very tight at the moment; demand is buoyant and this has driven up prices quite significantly in most areas."

3.4.1 Cost price increase

Since Quarter 3, 2000 word market price for skimmed milk and whole milk powder has increased by a margin in excess of 33% and 27% respectively. It was with this background that prices of DUMEX products in Malaysia were increased in September 2000 by 4% to 10%. However, the price increases are still insufficient to cover the increased costs. Therefore, it is inevitable that milk powder prices are to be increased further in year 2001.

As a matter of fact, all Standard and Premium infant formulas will be greatly affected by the cost increase of skimmed milk powder, as it is an important ingredient for infant powder formulation. The luxury of enjoying the benefits of declining powder cost price since 1997 has ended in Quarter 3, 2000 (Figure 7).

Figure 7 - Index - Dumex Standard Formula (Malaysia)



3.4.2 Basis of price determination

Tariff payments are the key drivers in price increase of raw milk powder and ingredients. Wynne further added that tariff payments represent a substantial chunk of the New Zealand Dairy Board's cost. "We pay about a billion dollars worth of duties and import taxes to get our products into various markets," revealed Wynne.

In additional to tariff payments, other price determinants are (OEEC, 1960):

Initial price

Prices to milk producers are sometimes guaranteed directly but more often they are dependent upon wholesale prices for liquid milk and milk products

and these wholesale prices are generally subject to direct or indirect government influence. Nevertheless in all of the countries whose dairy sectors have been studied, except Denmark the prices set, whether at producer, wholesale or retail level are determined at least partly with a view to assuring milk producers a reasonable level of income from the sale of milk.

Other factors taken into consideration are the need for avoiding undue increases in the cost of living while at the same time limiting the budgetary cost of 'producer' or 'consumer' subsidies. Increased efficiency of production and the current and likely future supply and demand situation for the product or products concerned are also taken into account.

Price revision

A point of some importance is the frequency with which announced prices can be revised. In most countries, the Government re-opens negotiations or reconsiders prices if production costs or market conditions change significantly since prices were last announced. For instance, in the United Kingdom, guaranteed prices for milk (and other commodities) are subject to annual revision. In some countries, price revision is made automatic through tying announced prices to specified indicators of factors having a close bearing on product prices.

Price seasonality

Milk production is not a year round affair. For example, milk production in New Zealand is seasonal, with virtually zero flows in the mid winter months from May to mid July. But from mid July, calving begins and milk production rapidly ascends to a peak in late October to early November when milk solids output can reach 140 million kg (Asia Pacific Food Industry, 2000).

Given the seasonal nature of milk production, there is an inherent contradiction in the pursuit of income stability for milk producers through stable prices for milk at the farm gate level, if 'stable' is interpreted as implying the elimination or attenuation of changes within seasons as well as between seasons. It is thus not surprising that almost every country that produces

milk, producer prices for milk vary seasonally, in anti-phase with milk production. In Denmark for instance, the seasonality of butter supplies from Danish and other suppliers in export markets in which demand is relatively steady throughout the year is reflected in corresponding seasonal changes in the commercial value and in the producer price of milk to Danish farmers.

3.4.3 WTO/GATT and Malaysia tariffs policy

The gradual liberalization of agricultural trade that began with the GATT round in 1994 has been a boon to New Zealand's dairy industry (New Zealand and Singapore recently signed a free trade agreement, paving the way to unrestricted flow of goods and services between the two nations). The writing on the wall indicates that the New Zealand Dairy Board's relationship with Asian customers and partners will continue to deepen. The result of decades of ground work in building up a wellspring of trust will definitely help the Board ventures into setting up manufacturing or reconstitution sites right in core markets such as Malaysia and China (Asia Pacific Food Industry, 2000).

On the other side of the world in European Union countries, concerns are rising on how far the GATT Agreement is likely to change the residual nature of world markets for dairy products. The main elements of the GATT Agreement requires the EU (Williams E. R., 1997):

- To reduce export subsidies by 36% in six years from 1995 and the volume subsidised by 21% based on averages of 1986 - 90.
- To implement reductions in each of four commodity groups - butter and butter-oil, skimmed milk powder, cheese and 'other products'.
- To convert all non-tariff barriers into bound tariffs at a level corresponding to the difference between internal and world prices in a 1986 - 88 base period.
- To reduce all tariffs by an average 36% over six years from 1995/96 with a minimum of 15% for each tariff line.
- To allow imports at reduced rates of duty for a volume of products accounting for a minimum of 3% of total milk requirements in 1993 and increasing to 5% of consumption over the six years.

- To reduce all subsidies affecting the level of production and therefore trade levels by 20% from the average of 1986 - 88. This is interpreted as a reduction in the 'aggregated measures of support', but this is an area in which there were some differences of interpretation between the EU and other Contracting Parties.

Clearly the requirements of the GATT Agreement are going to tighten on the EU dairy industry in this millennium by imposing quota on production volume of dairy products (William E. R., 1997). Price increase of raw material will eventually occur due to similar or increased demand versus limited quantity of raw materials. Milk companies, which are at the end of the supply chain, will receive the price increase consequences.

Moving to Malaysia scenario, import tariffs on milk products are almost non-existent when imports are from preferred countries. These include major suppliers of dairy products to West Malaysia i.e. New Zealand and Australia. For other countries, import duties on milk products are minimal and the pattern has been similar during the past twenty years. Import duty on milk powder for infant has been nil since 1964 (Mohd Jani b. Mohd Fauzi, 1985).

3.5 Fifth force: Threat of substitute products

According to Hitt et. al., substitute products are different goods or services that can perform similar or the same functions as the focal product (functional substitute). In the area of infant formula, beside breast milk which is the ultimate food for babies, the probabilities of parents to switch from infant milk powder to other type of beverage are rare. Brand loyalty and concern for nutritional values did not permit any infant formula substitutes market from taking place. However, cases of mother feeding their babies with cow's milk, goat's milk or even water skimmed from rice do occur due to extreme poverty and lack of breast milk.

For the first six months of a baby's life, infant formula substitutes do not exist other than breast milk (Project Multiple, 1999). Even though liquid milk

category for infant formula was well established in European market, it was unable to break through Malaysian parents' mindset who still prefer infant formula in powder form. In addition to consumers' preference, cost of liquid infant formula is also an entry barrier as it is about 150% higher than powder. Abbott faced this cost issue when they introduced ready-to-drink Similac infant formula in early 1990s; it was subsequently withdrawn from the market within two years.

Figure 8: Beverage consumed most often
Source: Project Multiple (DUMEX, 1999)

