

CHAPTER IV

PRODUCTION AND MARKETING OF DAIRY PRODUCTS BY PRIVATELY-OWNED FIRMS

Previously presented subject matters dealt with the production and marketing of milk by farmers at the farm level. This chapter will investigate the production and marketing of dairy products by privately-owned firms in Thailand in detail, so as to gain more knowledge of Thailand's dairy industry today.

4.1 Dairy Products Production

4.1.1 Production Units

1) **Economic Purpose:** The privately-owned firms are the modern economic units of dairy-products production. They provide the dairy products to satisfy consumers' wants. A survey by the author in 1971 found that eight privately-owned dairy business firms exist in the country¹⁾ running dairy businesses to maximize profits. Any other purpose of the firms, such as public service, is secondary; no other purpose is mentioned in the organization of the firms.

2) **Ownership Type:** Each of the firms is an abstract entity, consisting of an entrepreneur and all other production factors he acquires while engaging in the production of dairy products. From the viewpoint of legal organization, all the firms are limited companies, five of them owned by Australian, Dutch, Swiss and American business men, and three others by Thai business men. All the firms are in Bangkok and Samutprakan.

¹⁾ They are: (1) The Foremost Dairies Company (Bangkok), Ltd., founded in 1956; (2) The Bangkok Dairy Plant Co., Ltd., founded in 1959; (3) The Thai Dairy Industry Co., founded in 1965; (4) The Pop Products Co., Ltd., founded in 1962; (5) The Alaska Milk Industry Co., Ltd., founded in 1969; (6) Pranakorn Milk Industry Co., Ltd., founded in 1965; (7) The Thai Milk Produce Co., Ltd., founded in 1965; and (8) The United Milk Co., Ltd., founded in 1967. In 1972 one more firm of this type was being established in Ratburi. Firm no. 7 has sustained a net loss since 1971.

They are legal **persons,existing** independently of the **owners**. They can **own,sell,purchase,borrow,and** lend in their own names and they are tared by the Thai government like any other legal person. The **owners** are **shareholders,who** are subject to limited liability. Within the firm there is separation of ownership and management. Shareholders elect a board of directors responsible for **policy,objectives,and the** success or failure of the firm. **The** board of **directors,in turn,appoints** an executive **committee to manage** the firm's day-to-day affairs.

The privately-owned firms are not **co-operative-type** firma **since they** do not utilize oo-operative principles and **practices**. Hut they **profess** to follow the joint stock company organization **through** administrative and managerial organ8 of owners of big **properties for maximizing** Profits. A feature of great significance is the manner in which each firm is **organ-ized** in its dairy business. Jt consists of interdependent **de-partments:production,marketing,accounting,and** Personnel. The uniting of **these** departments Into a smoothly **operating** dairy business is a **managerial** function.

4.1.2 The Firm of Medium Siee

No study of the prirstely-owned business firms would be complete without **some** consideration of their sizes. **Size is** a relative **matter,and it is** measurable by the number of **employ-ees**. Each firm,on the **average,employed** 175 workers In 1971 and had a share capital of about 33,250,000 Baht in the same year. **These figures** show a firm of medium size. There **was of course** some variation in size,but most firms were medium in this res-pect.

4.1.3 Modern plant Layout¹⁾

Broadly speaking,layout is the **arrangement** and loca-tion of **equipment,men,and functions** of dairy production. "Its

¹⁾ ---The Thai Dairy Industry Co.,Ltd. (Bangkok: the Company,1964), p. 9.

objective is efficient utilization of space and optimum flow of work in process." Specifically speaking, the dairy-product plant layout in Thailand is best described as a floor plan arranging the desired dairy machinery and equipment of the plant in one place, to permit the quick flow of material at a low cost and with a minimum of handling from the receipt of raw material to the shipment of finished dairy products.

Figure 8 shows the dairy-products plant layout of the Thai Dairy Industry Co., Ltd.; it is used for producing condensed milk,¹⁾ the main dairy product for Thai consumers at present. The approximately 6,000-square-metre floor area is divided into 1) the processing area at the left, 2) the can-making area at right, and 3) the filling and packing area being between the two. Special nylon filters, a homogenizer, pasteurizer, cooler, and a vat with preheater for mixing milk powder, sugar, butter oil, vitamins, and water are installed in the processing area, adjacent to which is the receiving platform.

Vacuum coolers, storage tanks, flame sterilizer, filler, labeller, capper, and carton sealer are installed within the filling and packing area of the floor, the area of packing, storing and loading. Here the finished product is stored and finally despatched to market.

The can-making area contains a high-speed automatic can-making plant. There are also other miscellaneous processing machines scientifically installed in the plant. Each type of equipment is linked together according to the dairy plant techniques for ensuring a continuous flow of the product.

4.1.4 Production Process

The process whereby the materials--milk powder, sugar, butter oil, vitamins, and water--are transformed into the sweetened condensed milk is the production, or manufacturing, process. In the economic sense, the mentioned materials and

¹⁾ Ibid., pp. 6-7.

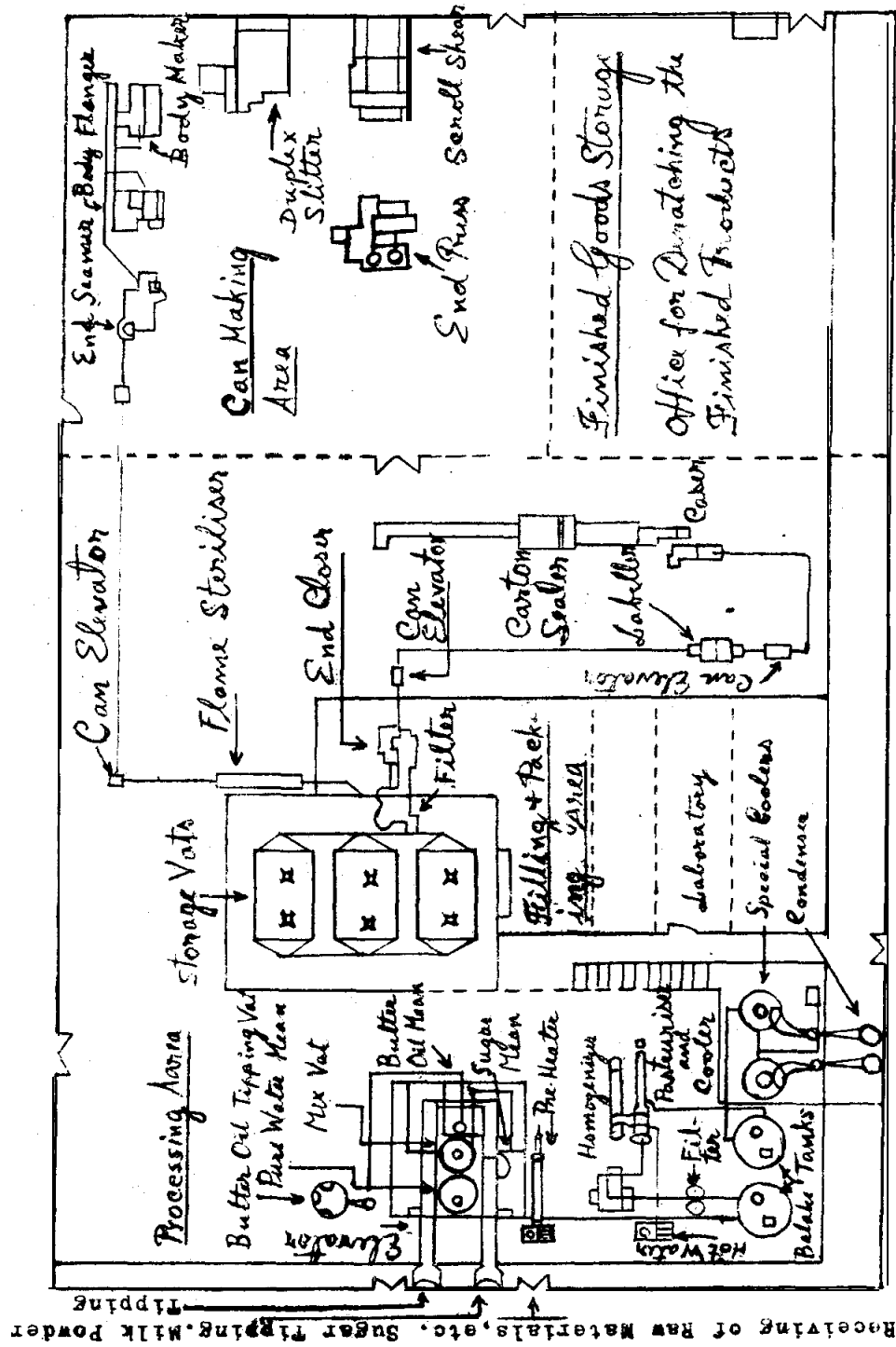


Figure 3

Sweetened Condensed Milk Plant Layout, Bangkok, 1973

other resources such as labour, capital goods, power and utilities, and supervisory and managerial skills utilized in the production process are the input for sale. The output of goods is dependent upon the input, and the amount and quality of output is closely related to the ability of production management. If the input is utilized efficiently and in proper proportion under well-defined standards, the output may be maximized in relation to input, i.e. $\text{Output} > \text{Input}$.

To obtain more knowledge of this field, some observed production processes are here analytically presented:¹⁾

1) Production Process of Sweetened Condensed Milk by the Thai Dairy Industry Company, Limited, in Bangkok (See Figure 9): (1) In this process, the ingredients are milk powder, sugar, butter oil, vitamins and water. Each must be tested for quality before going into the production process. (2) When the correct quantities of these ingredients are determined, they are combined in a special high-speed mix vat in batches of 3,000 litres at a time. (3) The mixing completed, the condensed milk flows from the mix vat through stainless steel pipes to a filter, to ensure the product's purity. (4) From the filter the product is pumped to a homogenizer which emulsifies the product, giving it a desirably smooth texture. (5) Following homogenizing, the product is pasteurized in a modern heat exchanger to a temperature of 195°F. and is held at this temperature for exactly half a minute, to ensure the destruction of all harmful bacteria. (6) Immediately after pasteurization, the product is cooled in the same heat exchanger to a temperature of 120°F. and is pumped into special vacuum coolers, where it is cooled to 65°F. under very low vacuum to ensure rapid cooling without discolouring or deterioration. (7) From these coolers the product is pumped to storage vats for a quality test. (8) After the test the milk is pumped through a filter to a sterile filling room, where it is put into cans from the can-making plant, which are then labelled and packed for further handling. (9) Finally, the product is left for a period of time

¹⁾ Ibid., pp. 6-7.

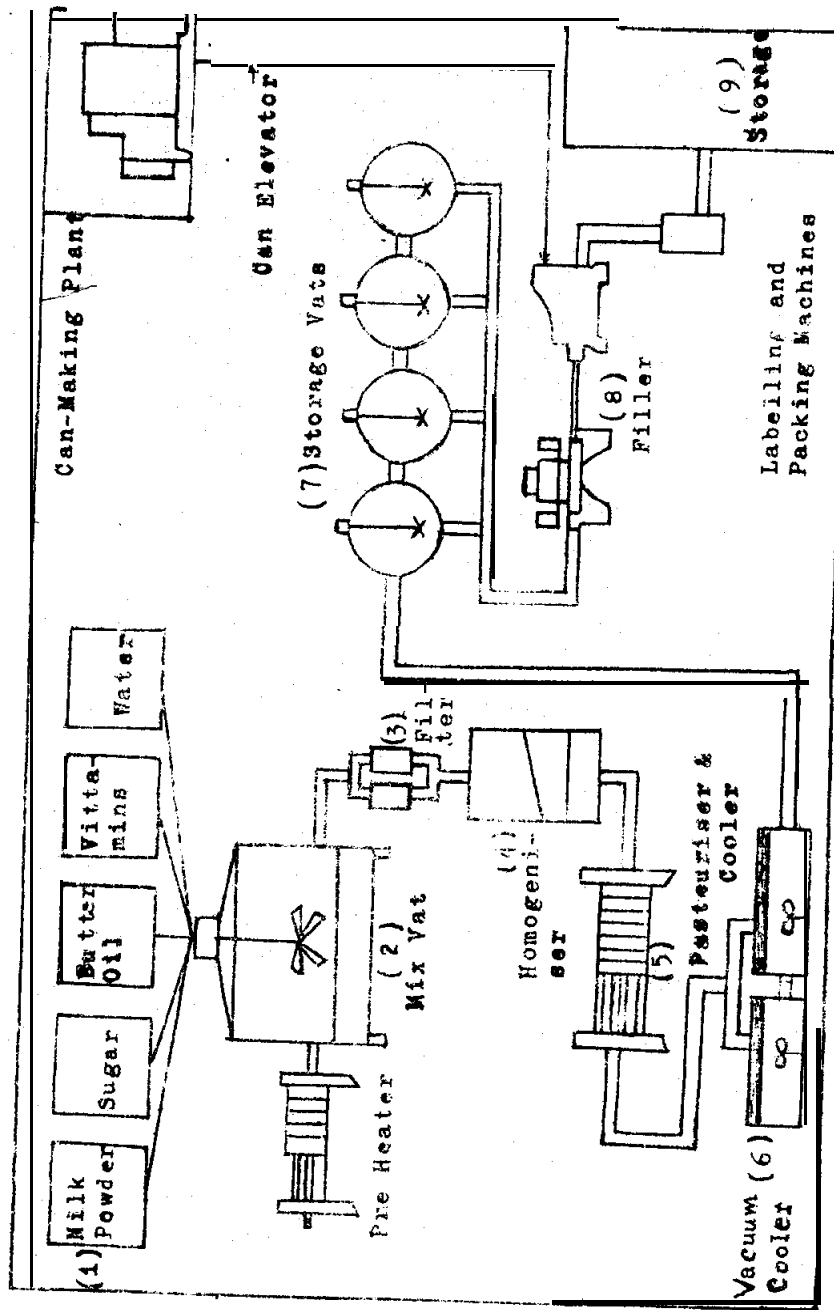


Figure 9

Production Process of the Sweetened Condensed Milk, Bangkok, 1973

in the storage room, waiting for transportation from plant to market.

During the whole of the production process delineated above, the sweetened condensed milk is not exposed to air at any point; all the surfaces in contact with the product are made of highly polished stainless steel which can be kept clean and hygienic at all times. Each stage of operation is automatically recorded on charts and every precaution is taken to ensure that under no circumstances can the process be upset by incorrect operation.

2) Production Process of Pasteurized Fresh Milk: The following is a brief description of the production process for pasteurized fresh milk by the Bangkok Dairy Plant Company, Limited, at Bangkok. The operation can be divided into the following stages: (1) When the raw milk arrives at the plant, it must be weighed and tested by a milk grader for grade quality. (2) After the grading, all the milk is poured into a filter for purifying. (3) From the filter the milk is pasteurized by a pasteurizer to a temperature of 145°F. to destroy harmful bacteria. (4) After that, the product is homogenized under constant high pressure by a homogenizer to reduce the size of fat globules in the milk. (5) Following homogenization, the product is filled in sterilized bottles by a filling machine, and the bottles are then capped. (6) Finally, all the bottles of pasteurized fresh milk are sterilized in a sterilizer by a steam to a temperature of 240°F. for ten minutes to kill decisively bacteria in the product.¹⁾ By this production process the pasteurized fresh milk is made hygienic.

4.1.5 Purchasing

One of the privately-owned dairy firms' main functions is the procurement of goods and services from outside sources.

1) --- The Bangkok Dairy Plant Co., Ltd. Bangkok: the Company, 1965), pp. 2-4.

Purchasing functions assume a routine nature • associated with the cycle of the firm operation and its use of material and • supplies, which the firms purchase mainly from vendors in foreign countries. ☞☐☐ • especially, the firms purchase dried skim milk, butter oil, vitamins A, B, and C, and milk fat in very large quantities from vendors in Australia, the Netherlands, the United States of America, New Zealand, among others, for use in the production of • sweetened condensed milk, reconstituted milk, and other Thai dairy products. About 137,650 kgs. of such foreign products are utilized daily.

The firms purchase daily about 3,000 kgs. of raw milk from the dairy farms solely for producing liquid milk for commercial purpose. This amount of raw milk is very small when compared with the quantity of foreign materials mentioned. The purchasing of such • small quantity by the firms is thus perfunctory. The main reasons given by the firms for the purchasing are: (1) the local milk • supply is of very small • significance to the dairy manufacturers and (2) the daily quantity of raw milk supplied by the dairy farms is not sufficient to ☐ meet the demand for daily production; only about 11,500 kgs. of raw milk can be daily delivered by local milk producers to the firms. In their opinion, they must buy the raw materials from foreign countries.¹⁾

(However, the one other important material the firms buy locally is sugar from privately-owned sugar-processing factories in Thailand. One kg. of sugar sold at a price of 3.75 Baht in 1972. About 53,748 kgs. of sugar is utilized daily by the firms. This quantity is not small when we consider business volume in the country. But this material is not the product created by the dairy farms and is thus not within the • scope of the present study.)

As to the payment made to the dairy farms, the buyers pay the sellers for their raw milk in accordance with its

¹⁾ Editorial in the Siam Rath, October 31, 1969 (Newspaper).

quality. The **raw** milk delivered to the plate **is tested** and classified into **A grade, B grade, and C grade** by milk graders. The **prices paid for one kg. of A grade milk, B grade milk, and C grade milk are 3.50 Baht, 3.25 Baht, and 3.00 Baht respectively**. This pricing method is strictly **practiced** by the Bangkok **Dairy Plant Co., Ltd.**

The sellers deliver their raw milk in metal **cans** by trucks to the **buyers**; a horse-drawn **wagons** have **never been** used for this purpose. The transporting of **raw** milk from the dairy farms to the **farms' plants** is entirely assumed by the farmers **themselves**; they defray all the transporting expenses.

4.1.6 **Type and Quantity of Dairy Products**

In 1971 the eight privately-owned dairy firms could be divided as follows, according to dairy product types: (1). five economic units producing condensed **milk**, one of them producing butter also and (2) three economic units producing pasteurised fresh **milk, ice-cream, cheese, coffee, and miscellaneous** other products. On the basis of economic importance, the milk-based products can be grouped into (1) condensed milk, (2) pasteurised fresh milk, and (3) ice-cream, butter, cheese, and other flavoured milk. Of these products, the condensed milk is the most important product in both quantity and value in Thailand today, the pasteurised fresh milk ranking second,

Quantitatively, the eight firms could yearly produce milk-based products of about 152,069.95 tons in 1971, or about 416.63 tons (416,630 kgs.) per day. (One firm alone could produce 19,008.63 tons in 1971) Of this amount 148,821.45 tons was the share of condensed milk. According to the opinion of the firms' officials, the output of the firms is probably enough to meet the potential demand.

4.1.7 **Properties of the Products**

The properties of the products must be strictly consistent with provisions of the Food Quality Control Act 1964

of Thailand, and a number of regulations on dairy products promulgated later under said Act by the Ministry of Public Health. For example,¹⁾ new milk to be pasteurized must come from cows free from tuberculosis, it must have no bacteria E. Coli. The unsweetened condensed whole milk must contain at least 7.8 per cent butter fat and 17.7 per cent non-fat milk solids. The sweetened condensed whole milk must consist of at least 8 per cent butter fat and 20 per cent non-fat milk solids. The dairy products must be in a hygienic condition: they must be good foods for Thai consumers. To ensure that they meet the aforementioned quality requirements, a committee consisting of eight government officials appointed by the Minister of Public Health is in charge of inspecting dairy production in plants throughout the country. If the product is not consistent with the Act and regulations, its producer may be punished by the authorities concerned. Thus the quality of dairy products has been given considerable attention by producer dairies.

4.1.8 Economic Productivity

On the basis of the above presentation, the dairy business seems a more or less productive one. This significant hypothesis ought to be tested. We should investigate economic productivity: how efficiently is the production carried on?

Economic productivity is "the ratio of the output of goods or services, or collection of goods or services, to the input of one or more of the factors producing them. This ratio may be in the form of an average, expressing the total output of some category of goods divided by the total input of a factor or factors."²⁾ Using this definition, the economic productivity of all factors combined in the production process can

¹⁾ Police Lieutenant Sathir Vichailuksana, The Food Quality Control Act 1964 (ed. in Thai, Bangkok: Nitivach, 1964), pp. 1-42.

²⁾ M.F.I., "Economic Productivity", Encyclopedia Britannica (Chicago: William Benton, 1972, Vol. 7), p. 930.

be determined mathematically by the dairy-products' output divided by the total input of the production factors. However, although all the factors that go together for making up the products are inputs, the input is generally measured in terms of man-hours employed.

The focus of this measure is on man-hours for two reasons: first, labour absorbs, on the average, from two-thirds to three-fourths of the value added in economic activity; second, labour inputs are more easily measured than certain other factors, such as capital. The economic productivity in figures per day (1971) is as follows:

$$\begin{aligned}\text{Productivity} &= \frac{416,630 (\text{Unit of output})}{1,400 (\text{Man-hours employed})} \\ &= 297.59 \text{ kgs. of dairy products}\end{aligned}$$

This quotient represents approximately the output per man-hour per day. And we can conclude that the firm is productive. This result is, of course, due mainly to dairy plant management,

4.2 Marketing Dairy Products

The afore-mentioned production is dependent upon marketing for the distribution of the firm's output. Marketing is concerned with all of the resources and activities involved in the flow of dairy products and services from producer to consumer. Its major objective is the sale of dairy products to satisfy consumer wants in anticipation of a profit. The study of the subject, therefore, proceeds from analyses of the market and market demand to the functions required to serve market demand, and then to the channels of distribution.

4.2.1 Dairy Products Market

The market is an arena in which buyers and the sellers negotiate the exchange of the products. Breaking down the statement for further discussion, we find four main characteristics

of the market: (1) type of the products marketed, (2) the marketing area, (3) market demand, and (4) form of the market.

1) Type of products marketed: if we take their durability as a classification basis, the dairy products are non-durable goods, because they can be consumed completely within a very short period of time. This durability is in marked contrast to the durable goods such as automobiles, which have longer service life. Another classification of the products is based upon the intended use of the products: they are daily consumed by consumers. They are thus the goods destined for the ultimate consumer; they are also convenience goods.

2) The marketing area: The whole of Thailand is a 'free-trade area' for nondurable goods and other types. The sellers' market is local or regional, but to some extent international, since they export condensed milk to Laos and other nearby countries. The pasteurized fresh milk is suitable more for local markets while the condensed milk is suitable for the international market as well because of its relatively nonperishable quality. Thus the marketing area is regional and international.

3) Market demand: Market demand for dairy products in Thailand is centered in two major groups: personal, or family, consumers and foreign buyers. The spending of these two groups makes up an aggregate market demand for the products; and their desire to spend, coupled with purchasing power, is an effective demand. Of the two spending groups, personal consumption expenditure (expenditure by consumers) is the most important in volume in the manner of its growth and dynamic change. Growth in both population and real per capita income has brought increased sales volume, probably with accompanying opportunities, in marketing the said nondurable goods.

4) Form of the market: If we take the number of sellers and buyers, free entry for new ones, homogeneous commodity, and both buyers and sellers taking price as given as the basis for

¹⁾ Chinnawoot Soonthornsima, A Macroeconomic Model for Economic Development of Thailand (Bangkok: Dr. Soonthornsima, 1964), p. 21.

considering the form of the condensed milk market in Thailand, it is a competitive market. It closely approximates perfect competition. Besides, each dairy firm has a high capacity for production and tries to produce and sell while lowering costs of production. Advertising and brand names are used as means of increasing sales.

4.2.2 Selling and Pricing the Product

Marketing of the product is accomplished by the performing of appropriate marketing functions. As observed, the basic marketing functions performed by the firms are assembling and grading, selling and pricing, transporting, storing, standardising and grading, financing, risk managing, and securing marketing information (see Figure 10). Of these marketing functions, selling and pricing are discussed in some detail in this section because of their prime significance.

1) The selling function is all-important in the dairy business. Sales of the product are the source of income required to cover costs and to yield a profit. The selling methods bring together buyers and sellers of the products. Two phases involved are the contacting of possible buyers and the sellers in Bangkok at a given time, and the negotiation of the terms of exchange. In larger markets, and where buyers or consumers are separated from the producers by distance, the negotiation of sales is undertaken by sales personnel of the firms.

Most of the milk-based products are sold regionally by the firms, leaving very small quantities of the condensed milk to be exported to Laos,¹⁾ a neighbouring country. In regional selling, the condensed milk is sold to wholesalers; but the pasteurized fresh milk and ice cream are sold both to retailers and to individual consumers in Bangkok and elsewhere.

As to the payment for the products, two systems are practiced at present: (1) the payment is collected at the end

¹⁾ This information was collected from the Phranakorn Milk Industry Co., Ltd. in the area of Samutpragarn, Thailand.

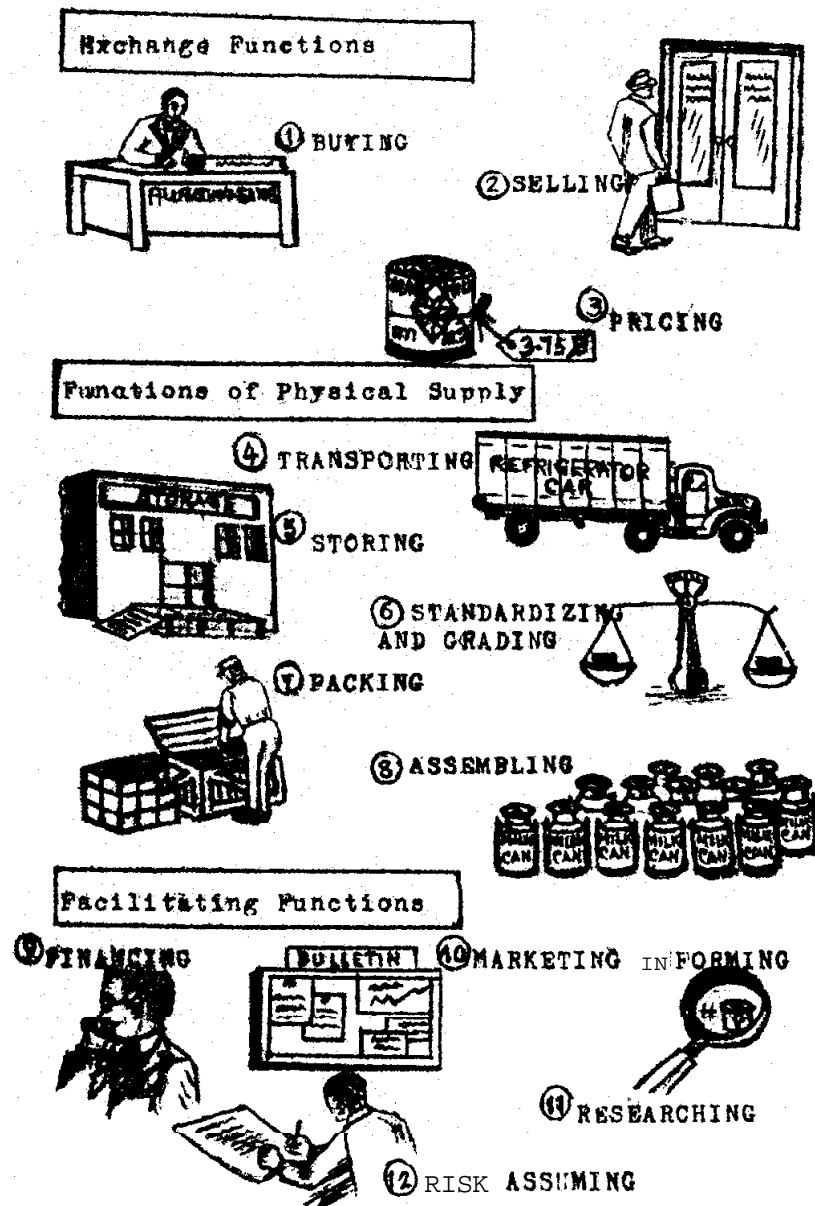


Figure 10

Twelve Basic Functions of Marketing
 Performed by Privately-owned Thai Dairies Firms

of each month, and (2) the payment is collected at the time of sale in cash from some regular and irregular customers, Roth systems are suitable and effective for the seller and buyers to practice.

2) Before selling, each product is reasonably priced by the manufacturer. Pricing of products reflects the nature of competition in the market, the elasticity of demand for the products, the sellers' costs, and gross margin. Other factors which may condition the pricing are the availability of substitutes for the sellers' dairy products, the attitude of customers about fair or equitable pricing, and national laws and regulations affecting marketing.

Most of the products are priced under condition of strong competition rather than otherwise. And the fixed price must be under the control of the Ministry of Commerce of Thailand. The following table shows a method of pricing the condensed milk practiced by the firms today.

This pricing method is based on the seller's total per-unit cost of the product (cost of ingredients + operating expense) plus an additional margin for profit. In the table one of the manufacturers of the condensed milk finds his total per-unit cost to be 3.67 Baht, and if he adds 0.34 Baht for profit, his price to the wholesaler should be 4.01 Baht. But in reality the per-unit price to the wholesaler is 3.33 Baht, thus the per-unit loss is 0.34 Baht.

Table 12

Illustration of the Cost-Plus Method of Pricing One Tin of 397 Grams of Condensed milk by the Firms, Thailand 1973

Agent	Cost of Good	Gross Margin		Selling Price
		Operating Expenses	Profit+ or Loss-	
Manufacturer	3.15 Baht	0.52 Baht	-0.34 Baht	3.33 Baht
Wholesaler	3.33 Baht	0.13 Baht	0.04 Baht	3.50 Baht
Retailer	3.50 Baht	0.15 Baht	0.10 Baht	3.75 Baht
Consumer	3.75 Baht	-	-	-

Source: The Bangkok Milk Product Co., Ltd., the Phranakom Co-operative Store, and the Department of Domestic Trade under the Ministry of Commerce.

The wholesaler, in turn, adds his operating expenses and profit to the 3.33 Raht paid to the manufacturer for the product, and the retailer follows a similar procedure in setting the price of the product for sale. For all economic agents, the price charge for this product will be the total of three separate major items, as follows:

$\text{Cost of Goods} + \text{Operating Expenses} + \text{Profit (or-loss)} = \text{Price of Product.}$

In this equation, $\text{Operating Expenses} + \text{Profit (or-loss)} = \text{Cross Margin}$. The manufacturer attaches special importance to the gross margin. He seeks to obtain a price for the product high enough to yield a net profit within the gross margin over and above his operating expenses of administration. But he fails to achieve this objective because his selling price is controlled by the Ministry of Commerce. Besides this, the cost of ingredients has increased considerably since 1971.

3) Besides the selling and the pricing, other marketing functions are also performed, at least to some extent by the firms. The transporting, the movements of pasteurized fresh milk, ice cream and some other dairy products by refrigeration trucks, is invariably performed by the firms. But the transportation of the condensed milk by trucks from the dairy plants is usually performed by buyers. Before the transporting, the condensed milk is normally kept in a storeroom in the dairy plant, but the other dairy products are stored in cold storage rooms of the firms for preservation of their qualities.

To guarantee composition and quality of the products as prescribed by the Food Quality Control Act 1964, grading, standardizing and controlling the products are undertaken by the firms all year round. A group of officials of the Ministry of Public Health inspects and analyses the products irregularly to make sure that the firms comply with the provisions of the Act. If not, the producers concerned are punished according to the Act's provisions.

Closely related to these functions is the packaging

of every kind of the product to protect it from physical damage and loss of weight and food value in handling. For instance, the condensed milk is put into a tin of 397 grams volume. The tin is then labelled with a paper bearing the following: (1) unsweetened condensed whole milk or sweetened whole milk; (2) name and residence of the producer; (3) net weight of the product; (4) registration figures; and (5) kind and quality of vitamins added, if any. The main purpose of this information is to help customers in buying the nutritive product. 48 condensed milk tins are put in each paper carton for delivery.

Risks associated with the dairy business, which occur in various forms, are insured against by the firms through privately-owned insurance agencies, for which regular premiums are paid. This function creates sound dairy business.

To cover expenses for marketing functions, financing is performed by the firms. Certain funds are acquired and set aside to cover marketing costs and for investment in products held for sale. The capital of the firm available for this purpose may be adequate, but credit extended by a bank to the manufacturers is also used.

4.3 Total Costs and Revenue

Now we turn to the dairy firms' total costs and income to know their whole financial status. To achieve this purpose we shall first investigate investments and total costs, cost of ingredients+operating expenses, and then income of the dairy firms.

4.3.1 Investment

"In the sense of economics, investment is the productive employment of capital--the direction of savings into uses that fill an economic need." The main investment objective is to earn profit for investors. According to the survey by the

writer in 1971, in the dairy business enterprises the entrepreneurs' invested their capital in four items: lands, dairy equipment, buildings, and oars. These items are production factors. Of these factors, buildings and dairy equipment are the most important. That is, they were purchased at great cost. The amount of investments in the first varied according to each venture's size. However the approximate amount of investment per venture was 20,000,000 Baht in 1971. On this figurative basis, the total investment of the eight dairy firms amounted to about 160,000,000 Baht in the same year. (Please note that prices of goods in Thailand have increased considerably, and the amount of the investment today is thus greater than 20,000,000 Baht.) This is a considerable amount for entrepreneurs in an economically underdeveloped country.

4.3.2 Total Costs

Investigation shows that all cost items defrayed by the firms include (1) costs of raw materials or ingredients and (2) operating expenses. The items of operating expenses are wages, taxes and fees, fuels and electrical power, allowances, packaging, interest on borrowed capital, insurance, advertising, repairs of buildings and equipment, depreciation of buildings and equipment (machinery, service equipment and tools), and miscellaneous others. In addition, one of the eight dairy firms has renting expenses, owing no office or physical dairy plant of its own. Of these cost items, packaging, taxes, wages and raw material purchases are the most important, from an economic point of view. In 1970 the total costs of the eight firms amounted to about 90,415,215 Baht,¹⁾ or about 11,301,901.9 Baht per firm.²⁾ It was considerable for each firm.

¹⁾ The reason for the approximation is that the firms did not give exactly precise data, due to business confidentiality.

²⁾ This data is obtained from a survey and confirmed by a manager of the Bangkok Dairy plant Co., Ltd.

4.3.3 Revenue

The revenue earned during the 1970 period was of two types: (1) operating revenue, and (2) nonoperating revenue. The first type results from the normal and recurrent primary activities of the enterprises, the sales of dairy products. The second type results from the more irregular and unpredictable activities of the firms apart from sales of dairy products. Occasionally, the firm sells some other asset which was originally intended to be used rather than sold. Nevertheless, the sale of dairy products is the main source of revenue of the firms. More particularly, the sale of condensed milk is the main source of revenue.

In 1970 the eight firms' revenues were approximately 99,375,000 Baht, or about 12,421,875 Baht per firm. It is not really too small an amount for new dairy industry in this country. This data has been confirmed by the mentioned manager.

4.3.4 Net Income

Now we come to measuring dairy business income for the 1970 period by matching the realized revenues and the related expired total costs in order to know the financial position of the ventures. The following is the process of measuring the income.

Revenues from the goods sold	99,375,000 Baht
Related expired total costs	90,415,215 Baht
Net income	8,959,785 Baht

The net income per firm was about 1,119,973.13 Baht in 1970. It was thus a positive net income. From an accounting point of view. In sum, the dairy business operations in 1970 are successful, because the realized revenue exceeded the related expired total costs.

4.4 Dairy Business Problems

Last, but not least, is the problematic aspect of the

dairy business of the firms. Although the firms are successful as such, they have encountered some economic problems since 1971: (1) considerable increase in price of imported raw materials used in the production process, (2) lower prices for condensed milk sold in Thailand, (3) greater expense for repairing dairy equipment, and (4) strong competition among the dairy firms themselves. Of the four problems, the first and the second are most significant today. As to the first, the prices of imported raw materials to be used in the production process has increased by about 45 per cent since 1971.¹⁾ In consequence, the cost of the condensed milk is high. The manufacturers have had negative incomes since then. For the second, the retail price per one tin of 397 grams of condensed milk is 3.75 Baht today; it is too low. It does not take into consideration costs and expenses. But the retail price is the ceiling price fixed by the Ministry of Commerce and cannot be increased by the sellers, without violating the law.

1) Editorial in the Nation, October 31, 1972 (Newspaper in English).