Chapter II

The Pharmaceutical Industry in Thailand

General Characteristics.

The production of modern drugs in Thailand could be categorized into three main types as follows :

a) Formulation : the use of pharmaceutical substance to formulate finished product. This kind of production does not require a large amount of investment and high technology. The quality of products might be evaluated from the process of production. Good Manufacturing Practice (GMP) scheme for each dosage form of pharmaceutical products is set and approved by FDA. Therefore the FDA GMP granted certification is somehow quality index of the products.

b) The repackaging of finished drugs by dividing bulk drugs into small package and labeling.

c) The production of raw materials and/or active ingredients that are imperative for the production of finished drugs. This type of firm requires very high, complex technology and large investment. In 1993, there are 10

firms that produce pharmaceutical substance, 9 of 10 firms are belonged to private sector, the other firm is the Government Pharmaceutical Organization (GPO).

Most of the firms in both a and b categories are in medium and small size comprising of manpower varying from 10 to 100 persons in each firm.

Production and Distribution.

1. The Pharmaceutical Firms in the Private Sector.

As shown in Table 2.1, in 1993, there are 181 pharmaceutical firms altogether, of which 134 are in Bangkok and the rest 47 are spreaded all over the country. Among these 181 firms in 1993 we can classify them into two group :

a) Multinational Corporations (MNCs) or foreign firms, such as those from Germany, the United Kingdom, Canada, Hongkong, Japan, India, U.S.A., etc. These are composed of 26 firms of which some of them are completely foreign-owned, and some are in the form of joint-ventures. In case that they are branches of the MNCs, the share of them will be 100% foreign-owned. But if they are joint-ventures, the share of their Thai partners are usually more than 51% and operate under the joint-ventures' agreements.

b) Thai - owned firms are 155 firms. The management and administrative system are handled with Thai counterparts. It could be both totally Thais and at least 51 percent share of Thais.

Table 2.1 : Number of Private Pharmaceutical Firms, 1987-1993

Year	Number of Private Firm		
	Bangkok	Regional	Total
1987	151	40	191
1988	150	40	190
1989	148	43	191
1990	142	43	185
1991	137	45	182
1992	133	47	180
1993	134	47	181

Source : The Food And Drug Administration; The Ministry of Public Health

2. The Pharmaceutical Production in the Public Sector.

The pharmaceutical production in the public sector are comprised of the Government Pharmaceutical Organization (GPO), the Military Pharmaceutical Plant and the public hospitals.

3. Drug Distribution.

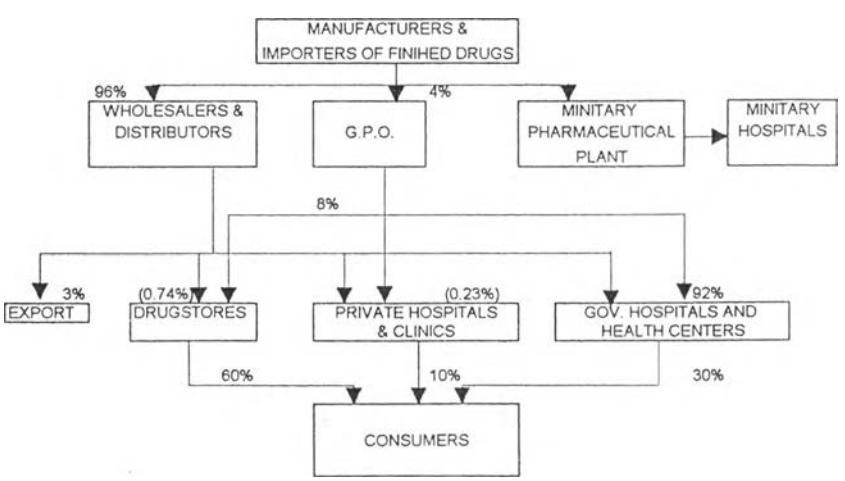
In Thailand, drugs are distributed through two main sources. These are the government sector through GPO and the private sector through wholesalers, MNCs or distributors. At the retail level, there are organizations that distribute drugs directly to the public such as drugstores, hospitals, clinics, health centers, etc. (see Table 2.2 and Figure 2.1)

Table2.2 : Number of Drug Stores / Manufacturers / Importers ,1991

	Bangkok	Upcountry	Total
Drug Stores			
• Modern	2,135	2,336	4,471
• Modern (Ready-Pack)	817	454	4,365
• Modern (For Animal)	36	177	213
• Traditional	432	1,916	2,348
Manufacturers			
• Modern	133	47	180
• Traditional	260	387	649
Importers			
• Modern	450	35	485
• Traditional	96	0	96

Source: Drug Control Division, FDA

FIGURE 2.1 : THE DRUG DISTRIBUTION SYSTEM.



SOURCE : TECHNICAL DIVISION, FOOD AND DRUG ADMINISTRATION, MINISTRY OF PUBLIC HEALTH. UTILIZATION AND DISTRIBUTION OF PHARMACEUTICALS IN THE PUBLIC SECTOR, 1983, p.7

The distribution of drugs at various levels made through four major channels, namely; GPO, hospitals and health centers, clinics, and drugstores.

a) The Government Pharmaceutical Organization (GPO)

The GPO is a state enterprise. Its activities include manufacturing of basic pharmaceuticals as well as processing and distributing all pharmaceutical supplies to state-owned hospitals.

The supply of drugs through GPO comes from two sources. These are the GPO's manufactured products and the products purchased from private manufacturers. The GPO plays a major role in the distribution chain, as it is the major supplier to government-funded institutions which, in turn, are constrained to spend the government budget through the GPO, although they can use funds collected from the patients to purchase drugs from alternative sources.

b) Government Hospitals and Health Centers.

About 30 percent of the total value of drug consumed by the consumers in 1982 was distributed by the government hospitals and health centers. The hospitals and health centers under the control of the Ministry of Public Health have two main sources of revenue. Those are the regular government budget and a small amount of the low income budget on buying the drugs included in the National Essential Drug List (NEDL) from the GPO before dispensing them to the patients.

However, it is a good sign that nowadays, the government hospitals, namely, the provincial hospitals could produce some drugs such as common mixture, injectables, transfusion solutions, common ointments, etc. Thus, drug budgets could be made to serve a larger number of patients.

c) Private Hospitals and Clinics

In 1982, about 10 percent of total value of drug consumption was supplied by the private hospitals and clinics. The modern health care or "Western" type of medical service as well as the drug distribution are being provided in an increasing degree by private hospitals and clinics. The private hospitals and clinics, unlike the government hospitals, are not constrained to buy drugs from the GPO but they can spend their own revenue on buying drugs from any sources. Unfortunately, the data about the percentage of drugs the private hospitals and clinics purchase from the GPO and private firms are not available. Nevertheless, private hospitals and clinics tend to buy drugs from private suppliers with the reason of prompt delivery and more availability of drugs at the private firms. Nowadays, private hospitals and clinics have become an increasingly important health care and drug distribution outlet that the majority of people who live in Bangkok use. This may be because of the time saving and the convenience provided by private hospitals and clinics as compared to the state hospitals. In rural areas, these private, modern medical services have become widespread in only recent years.

d) Drugstores

In Thailand, drugstores engage in both prescribing and dispensing drugs to patients. They are the most important channel of drug distribution

in the Thai market. That is , about 60 percent of the total value of drug consumption is distributed by drugstores. There are 4 major types of modern drugstores as listed below:

1. First Class Drugstores.

This type of drugstore can sell every kind of drugs including "dangerous drugs" and "regulated drugs" . The regulation for this type is that there must be a pharmacist in the drugstores all the time. This condition seems to be enforced only in urban areas, where is very few pharmacists really work in the first class drugstores in rural areas.

2. Second Class Drugstores.

These are drugstores that are not allowed selling "dangerous drugs" and "regulated drugs" . All of the drugs sold in this type of drugstores are "Ready Packaged Drugs". This type of drugstores are more available than the others.

3. Third Class Drugstores.

These are drugstores that sell only the animal drugs.

4. The Traditional Drugstores.

This type of drugstore can sell the traditional drugs to the consumers. The drug can either be produced from herb or animal organs.

In reality, the classification of drugstore is not effective in practice since there is an evidence that the second class drugstores always sell "dangerous" and "regulated drugs". Moreover, the opening of the second class drugstores are easier and require less expenditure than the first class drugstores. And the government officials do not impose a rigorous control on this type of drugstores . Hence, there is a tendency that the first class drugstores will automatically change to the second class drugstores.

It is found that drugstores are the most important channel of drug distribution in the Thai market. That is, about 60 percent of the total value of drugs is distributed through drugstores. This situation opens the opportunity for the private drug firms to spend much money on advertising of their products and persuade the consumers to use their brand name drugs. This may lead to the problem of misuse and overuse of drugs. The important point to be noted here that the over-consumption or misuse of drugs not only creates a waste in money terms but it also causes the inverse effects in non-money terms such as the drug-resistance, chronic diseases, the side effect of drugs and the toxification of drugs.

Market Structure and Degree of Competition.

Estimation of concentration can be misleading since the markets for pharmaceuticals tend to be much more fragmented than those of other product markets. Most manufacturers sold products to a rather broad groups user but medicines, usually used for specific disease, are in a number of self-contained submarkets. Industry-wide estimates therefore understate the extent to which a few companies dominate certain submarkets.

In Mexico, for example,64 percent of the 300 largest-selling medicines were found to account for more than 40 percent of their respective individual markets in the late 1970s. The situation is much the same in the European Community (EC):50 brands or more exist in most product classes but the leading one will often have 20 to 25 percent of the market and the top five may account for two-thirds or more (Burstall and Senior, 1985).

The number of distinct product markets (referred to as therapeutic classes and subclasses in the literature) is great,reflecting the diversity of diseases and treatments which exist in many countries.

There are several reasons why competition in individual markets is not always vigorous. The most obvious one is that some markets are dominated by a few, relatively efficient drugs which are patent-protected. In other instances the patents of the leading brands have expired but the products continue to be leaders. At first glance,this result seems peculiar; competitors would logically be expected to enter a profitable market once the patent of the dominant product has expired. The effects of patent expired can be offset, however, by brand-name loyalty, control over a key input or policy decisions.

The first of these factors is the source of much dispute. Large pharmaceutical firms spend huge sums on product promotion, a practice which has made them the point of considerable criticism. Effective promotion of branded drugs is clearly part of the mechanism by which returns to innovation are realized and the success of advertising will depend mainly on the therapeutic novelty and efficacy of the drug in question (Slatter, 1977).

Nevertheless the hold of branded drugs is a powerful one (even in countries that do not grant patents). Some analysts suggest that brand-name loyalty may be a more effective method of guaranteeing high returns than the patent system itself (Lall,1985).

Robert et al.(1992) demonstrated that drug companies go to remarkable lengths to promote their products adds credence to these arguments. In the United Kingdom, for example, drug industry spent 80 times more than the country's national health service in 1988 to inform doctors about the drugs they offer. Several companies have also established 'teaching centers' in attractive locations where doctors come to learn about medical matters and the company's drugs. The suspicion is that a portion of the industry's marketing budget is really intended to maintain brand-name loyalty rather than providing genuine information.

Control over a key input for example, a medicinal chemical or active ingredient can also mean that the original product retains a large market share long after its patent has expired. New competitors will require access to the input. The originator, however, may choose to sell the input to licensees, or else transfer the production technology if these methods are more profitable than sale of the drug itself. Such an outcome is most likely when the production technology is sophisticated and difficult to control (for example, the production of antibiotics by fermentation with good yield and consistently high quality). If competitors are unable to replicate the process exactly their ability to compete with the original product is severely limited.

Finally, policy decisions will affect the pattern of brand leadership. Various governments, for reasons of efficacy or cost, enforce programs to ensure that only certain drugs are sold in the home market. The country may

adopt the list of essential drugs recommended by the World Health Organization(WHO) or it may develop its own list. Some developing countries also distribute a large portion of all drugs through public channels and control the availability of drugs through the tender system they use for imports.

The result is that only a few suppliers appear to dominate each market but, if the government intervention and related measures - for example, price controls - are effective, the degree of market power should not be large.

The fact that the leading product is often an 'original' which is no longer protected by patent is changing the nature of competition in many markets. Traditionally, the original market leader is expected to be replaced by a superior, research-based drug. This is still true when demand is growing rapidly, but in maturing markets such as antibiotics the amount of research is being cut back and the pace of innovation is slowing. As a result, many battles for market share appear not between two patented drugs but between and original and generic drugs. Factors like brand-name loyalty then assume greater importance. This helps explain why firms are now willing to spend more money to maintain the marketability of older generation drugs.

The impressions which emerge from this examination of market power and competitive patterns are several. Firstly, at the international level the degree of market power is considerable and probably exceeds that in most other industries. The same does not apply at the national level. Most drug markets, however, are extremely fragmented and national data may be a poor indicator. The extent of market power and the limited degree of

competition reappear when attention turns to the markets for individual drugs.

Secondly, the tendency for only a few drugs to dominate a particular product is widespread. Product of the rivals either patent-protected or generic drugs, eventually appear but markets continue to be oligopolistic, marked only by changes in the leadership of firms. The nature of competition is changing, however, as firms become more judicious about the ways they spend their research funds. Research success and product innovation are still the main criteria for success in dynamic markets. Meanwhile research is being cut back in mature markets as firms rely more on promotional effects and characteristics such as brand-name loyalty.

Finally, the degree of market power and the extent of competition do not seem to differ significantly between the industrialized and developing countries. A few companies are world leaders and occupy prominent positions in the markets of both country groups. Nevertheless the implications for policy makers and consumers in the developing world are worrying. The domestic industry in these countries is relatively weak and consists almost exclusively of small firms which can pose no challenge to the multinationals. An added complication is that the regulatory system in these countries is often incomplete and sometimes inefficient. These circumstances mean that markets are relatively vulnerable to the possible abuse of market power.

From the fact that most pharmaceuticals are suitable only for a few purposes, and the market is therefore divided into a number of largely self-contained sectors. The responses of individuals to particular drugs vary

greatly. Side-effects are possible and sometimes serious. Within each therapeutic category a choice of alternatives is considered to be desirable.

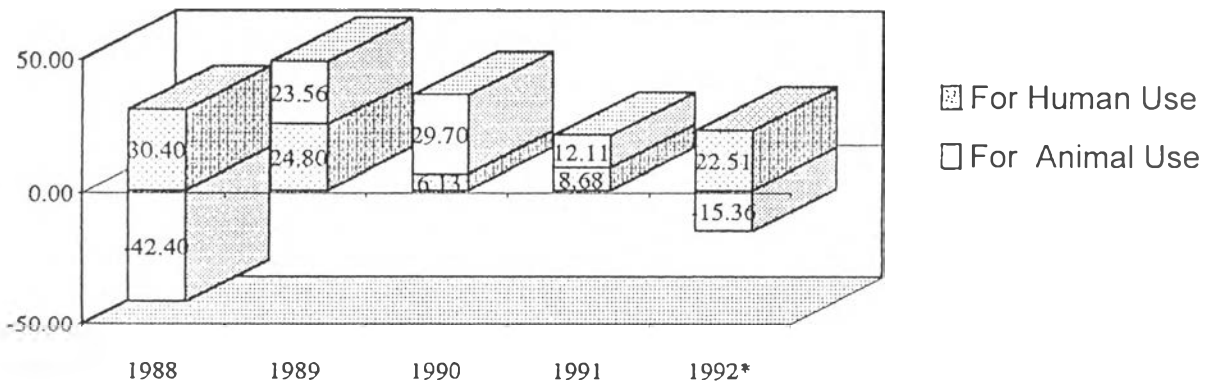
The number of drugs marketed in Thailand is therefore relatively large as shown in Table 2.3 and Figure 2.2

Table 2.3 : Value of Modern Drug Manufacturing in Thailand, 1988-1992.

Year	For Human Use		For Animal Use		Total	
	Value (million baht)	% Growth	Value (million baht)	% Growth	Value (million baht)	% Growth
1988	6,708.85	30.40	181.27	-42.40	6,890.12	26.30
1989	8,372.85	24.80	223.98	23.56	8,596.83	24.77
1990	8,886.02	6.13	290.50	29.70	9,176.52	6.74
1991	9,657.54	8.68	325.68	12.11	9,983.22	8.79
1992	11,831.03	22.51	275.66	-15.36	12,106.69	21.27

Source : Drug Control Division, FDA

Figure 2.2 : Value of Modern Drug Manufacturing in Thailand, 1988-1992.



Source : Same as Table 2.3

The delivery of medical care in Thailand is largely decentralized, autonomy and the right of the doctor to prescribe whatever he thinks best for the patients. To the drug company the doctor is therefore the customer, and the aim of marketing is to persuade him to favor one product rather than another. This is best achieved by personal contact, and all firms maintain large forces of highly trained salesmen for this purpose. This is more important as doctors generally get news for development in therapies from the drug company personnel.

Marketing costs for prescription drugs are therefore heavy. Marketing OTC drugs is also expensive although in this field the major cost is general advertising, which takes place mainly on radio and television.

Government Policies toward the Industry.

Drugs are one of the most important components for the implementation of the country's health services. In order to reach "Health for All by the Year 2000", the government's drug policy emphasizes the following aspects:

a. The supply of safe and good quality drugs at reasonable prices to the rural areas, with special emphasis on primary health care. This will include the improvement of the logistics of drug supply and promotion of local drug production both in the private and public sectors.

b. The wastage of drugs will be cured by strict adherence to the National Essential Drug Lists and dissemination of comprehensive information to the medical profession regarding drugs and treatment regimens.

c. As an important component of the quality assurance scheme augmentation of drug analytical facilities, including the testing of biological and immunological products and development of a responsible organization for drug standards, drug analysis and reference substances will be carried out.

d. To survey the indigenous raw materials available in the country and to investigate the possibility of developing bulk drug production utilizing local resources for the country's self-reliance.

e. Explore intensively the therapeutic potential or "Traditional Drugs" for safe and efficacious use, especially in the area of primary health care.

In order to reach these objectives, the GPO which is the dominant institute that the Ministry of Public Health (MOPH) has implemented the national drug policy. Moreover, in the move to prevent wastage, the MOPH issued the "National Essential Drugs List" and stating that hospitals under its responsibility have to buy drugs from the GPO if the funds come from the government budget allocation.

The quality assurance of drug maunfacturing is another important role of government. Since 1984, the government has launched the Good Manufacturing Practice Criteria so as to assist the quality of drugs which produced by domestic drug manufacturers.