INTERNATIONAL PHARMACEUTICAL MARKETING: AN HISTORICAL PERSPECTIVE

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ABSTRACT

This study traces the history of international pharmaceutical trade and its development since the Middle Ages to the present. This history is divided into two time periods (1) Middle Ages to World War II and (2) World War II to the present. The marketing strategies employed in these different time periods are compared with respect to product, promotion, distribution, and pricing policies.

INTRODUCTION

Health and long life have been among the deepest desires of men and women since the beginning of the human race. Hope of a small advance in physical well-being, or even a slight mitigation of human pain, has changed the course of history. It sent Christopher Columbus across the Atlantic to discover America. The spices of the East, to which he was seeking a short route, were the medicinal herbs of the day rather than seasonings for food. Through the centuries it has led the noble and the daring to risk their fortunes, sometimes their lives, in jungles and laboratories.

The contribution of the drug trade to advancement of knowledge in medicine has been largely ignored by historians. Plenty of attention has been lavished on the history of the great doctors and scientists, while the history of manufacturing and trade in drugs in particular has been paid little attention. Historians have been guilty of perpetuating the snobbery of the old medical hierarchy, which dismissed those engaged in such activities as mere tradesmen. This fact is now acknowledged by those studying the history of pharmaceutical trade (Liebenau, Higby, and Stroud 1990, p. 12,13). Books have been written on the history of pharmaceutical firms that first started engaging in drug trade, but they say almost nothing about the networks of buying and selling pharmaceuticals, the economy connecting the wholesale chemical suppliers and the doctors and medical institutions which purchased their wares, or about the capital, investment, and profit involved.

The present study attempts to fill this gap in the literature. It traces the changes taking place in international pharmaceutical marketing from a historical perspective. From the review of literature it was found appropriate to divide this history into two periods: (1) The Middle Ages to World War II and (2) World War II to the Present. It appears that significant changes in the status of international pharmaceutical trade took place only after World War II. However, drug trade between countries was carried on even in the middle ages.

In this paper, first, the history of the global trade in pharmaceuticals is traced, beginning with the middle ages to the period of World War II and post World War II to the present. The post World War II period is further divided into three important eras, namely, (a) 1940-1960: The Golden Era (b) 1960-1980: Era of Regulation and (c) 1980 - to the present: Era of Strategic Alliances. Second, the marketing strategies employed by the parties concerned in the different time periods are compared with respect to the product, promotion, distribution, and pricing policies. Finally, some concluding comments are offered.

MIDDLE AGES TO WORLD WAR II

The trade of pharmaceuticals to other countries really began in a formal way after World War I and picked up in competition after World War II. Foreign trade in medicines coincided with progress in pharmaceutical manufacturing. With the advancement in technology it became possible to mass produce drugs in tons which led to saturation of domestic markets and hence exploration of foreign markets (James 1983; Keller and Smith 1969; Measday 1977).

However, relatively speaking, large scale production of certain drugs also existed in the Greek and Roman Age and in the Middle Ages. Kremers and Urdang (1940) who did an exhaustive study on the history of the pharmacy profession describe some of the manufacturing and marketing practices during those times. According to their account, clay tablets which were made from special greasy clay found on the island of Lemnos before 500 B.C., were produced on a mass scale and sold over the entire known world up to the late Middle ages. The clay tablets were used as an antidote for poisons as well as in treatment of dysentery, internal ulcers, hemorrhages, gonorrhea, and even eye infections. The most striking feature of this drug however, was the way in which it was manufactured and marketed. The clay was dug, carried to the nearby village, washed, formed into pastilles, and while still soft, it was impressed with a seal (what would today be called a trademark). The first seal used is said to be in form of a goat. Later, the head of Goddess Diana was used. According to Wootton (1910), this practice of "trademarking" drug preparations became a part of the pharmaceutical industry well before the Christian era and hence is no invention of modern times. These lozenges were then distributed and sold throughout all parts of the known world. The great demand for these clay tablets and their brisk sales caused people in almost every country in Europe to look for similar earth. At the end of the seventeenth century, there was a great variety of white, red, and yellow sealed earth on the market showing different impressions - the images of saints, ships, plants, coats of arms, etc. For example, the Terra Mellitea came from Malta and was alleged to have a special power against the bites of serpents and vipers. These cakes bore the effigy of St. Paul and a popular legend attributed their efficacy to a blessing on the earth of the island when the apostle landed there (Wootton 1910).

There was large scale manufacture of medicinal products in Italy as early as the twelfth century. Venice is mentioned as the place of manufacture of corrosive sublimate and cinnabar. Somewhat later, sugar of lead, borax, soap, sal ammoniac, Venetian talc and Venetian turpentine were manufactured. These were then exported to places across the world such as Germany, France, Britain, and Lisbon. An important pharmaceutical article of export was Venetian treacle and Venetian troches of vipers required in some European states for the local preparation of treacle. Some monasteries in Italy engaged in industrial pharmaceutical activity. The monastery of the church of Santa Monica Norella in Florence was famous for the distilled waters and cosmetics which the monks prepared and sold. The decline of the Italian trade and wealth began with the discovery of America and more particularly with the discovery of the all-water route to the East Indies. The drugs of the Orient were brought directly to Europe by the Portuguese and later by the Dutch (Kremers and Urdang 1940). However, such large scale manufacture of drugs was incidental and conservative - i.e., an accident of circumstance - the local raw material granting, in effect, a monopoly to the producers. Modern mass production has been systematically planned and progressive. In the mid-sixteenth century, competition in foreign trade in drugs and spices was at its peak, with mainly Portugal, Spain, Holland, and England in the fray. During this time in Europe, many drugs and spices were highly valued, partly because they were brought from the Far East by land after the merchants had undergone many dangers, but mostly because of their medical powers.

The history of the modern patent legislation can be traced to the seventeenth and eighteenth centuries. At this time, pharmaceutical proprietaries or "nostrums" were made on a large scale in some monasteries in Italy, France, and Germany. Some of these nostrums were so highly regarded that the rulers bought the formulas from their inventors and published them for the benefit of their people. The most famous example of such a transaction is the sale of the formula for a decoction of cinchona bark

by an Englishman by the name of Talbor to Louis XIV of France in 1860 for an undisclosed high price (Thompson 1929, p. 233). Frederick the Great of Prussia (1775) gave the inventor of a nostrum against tapeworm, not only an immunity but also a noble title (Schelenz 1904, p. 579). Such remedies, cleverly promoted into high esteem, came to represent large enterprise and high monetary value. Purveyed with an air of mystery, and often actually secret in composition, they pretended to represent some unique virtue or invention. This circumstance gave such drugs a role in bringing about legal rights that formed the basis of modern patent legislation. England was the first country to establish governmental regulation in lieu of princely arbitrariness. A statute of King James I (1624) declared all monopolies that were grievous to the subjects of the realm to be void, except privileges for the,

> sole working or making of any manner of new manufacture within the realm to the true and first inventor of such manufacture, which others at the time of making such letters patent or grants should not use, so they be not contrary to law nor mischievous to the state by raising of the prices of commodities at home or hurt of trade or generally inconvenient (Encyclopedia Britannica 1910, p. 903).

On these words rests the modern legal concept of patents for inventions. In the American colonies, the British monarch or his governors granted letters - patent of the old type for exclusive privilege (land, trading companies, manufacture), but this practice was never more than casual. The Colonies had no concept of patenting inventions on a systematic basis and thereby lagged behind the mother country's marked shift toward emphasizing patents of industrial or inventive purpose. Modern patent laws emerged later as part of an international trend in the nineteenth century (America, 1836; France, 1844; England, 1852; Italy, 1864; Germany, 1877). The development of the patent system provided a legal property of far-reaching importance to the pharmaceutical industry. This international trend came to maturity in 1883 with the signing in Paris of an International Patent Convention (Kremers and Urdang 1940).

Thomas Corbyn (1711-1754)

The business records of an English druggist, Thomas Corbyn, in the eighteenth century give a picture of the foreign trade in drugs at that time (Liebenau, Higby, and Stroud 1990, p. 5-22). Corbyn's business lay in the manufacture and sale of drugs, both wholesale and retail, though wholesale trade comprised the major part of his enterprise. Corbyn made and vended simple drugs like senna, rhubarb, clove oil, arrow root, several types of medicinal waters, elixirs and nostrums. The Company possessed massive recipe books, listing the ingredients and proportions for several hundred different preparations, together with lengthy and precise instructions for pounding, blending, distillation, and so forth. Most recipes contained itemized costing details and recommended wholesale prices for the finished product. Corbyn's letters to his customers reveal that he relied on consistent quality and not cheapness or innovation. His warehouse stock book dated December 1761, runs to 2500 different items of materia medica, which were stored in extraordinarily large quantities. Like all businessmen at that time, Corbyn often diversified, exporting in addition to drugs, items such as gloves, shoes, or haberdashery.

Records indicate that Corbyn had a massive export trade. He made contact with a couple of dozen people abroad, a few in continental countries such as Portugal, but mainly in the Americas. These were surgeons, physicians, dealers, and general agents. Corbyn's technique was to dispatch a chest full of drugs about fifty pounds worth. He would suggest to the recipients that they do business on a sale-or-return basis, and asked them to distribute the drugs, parcelled into appropriate quantities, to local medical practitioners and also to planters. He specified a minimum wholesale price below which he was unwilling to go, as well as an "advanced" price. His business letters chronicle the immense difficulties of foreign trading in those times (1742-1755): endless losses, breakage, spoilage, market vagaries, bad debtors, and so on.

The Quaker connection proved very important to Corbyn. It was the moral and business codes

of the Quaker International which made long-distance, indeed trans-Atlantic trade in drugs a via enterprise. The Quakers were a English community who emigrated from England to the U.S. in 1(and who were active in making of herbal remedies and selling them. It is worth speculating as to motives underlying Corbyn's decision to engage in foreign trade in drugs, considering that enormous risks involved frightened several druggists to be content with opening a "apothecary" a making and dispensing medicines to the local population. However, to one correspondent he wrote, "t drug trade is my proper business, it will pay better than any other merchandise" (Liebenau, Higby a Stroud 1990, p. 14). Corbyn's letters to his customers reveal that he believed in product quality mo than in low price or novelty of the product. In 1750, he wrote to his friends in America,

> The simple drugs are ye the best of their kind, and ye compositions not only true, but curiously prepared, and charg'd reasonable according to ye present market prices...Perhaps some will say ye compositions are too dear, thou must insist on their goodness. I know there are a great many very bad and adulterated medicines sent to America, which are sold cheap but have much larger proffitt than those who are conscientous in preparing them true according to ye London dispensatory (p. 14).

The above statement is revealing of Corbyn's shrewdness and business sense. In those times, adulteration of drug products was so common that it became something of a joke. Senna, a laxative for example was derived from a plant in India and Egypt, but the latter was superior in quality and higher in price. When a customer complained that the senna he received contained camel dung, a dealer laughed. "Of course it's camel dung," he replied. "This proves it is genuine Alexandrian senna. There are no camels in India" (Mahoney 1959, p. 24). In contrast, Corbyn knew his trading reputation hinged on reliable, high quality products.

According to the evidence, Corbyn was a keen market researcher. The records indicate that he was constantly seeking information about possible new markets and asking questions of his agents with respect to market potential, prices, etc.

It was around the middle of the eighteenth century that the modern day pharmaceutical industry began to replace the traditional, back-room, small scale manufacturing by retail pharmacists, especially in England, France, and Germany. In the U.S., the pharmaceutical industry developed somewhat later but here too, it was retail pharmacy that took part in the start as well as the growth of this industry. In the U.S., manufacturing pharmacy was born during the Revolutionary War (1775-1783). Particularly after the Civil War (1861-1865), the number of pharmaceutical manufacturing firms in the U.S. increased rapidly. In 1866, Parke, Davis and Company was formed. One after the other, pharmaceutical manufacturing plants arose from modest beginnings to large establishments. Most of them devoted themselves to the manufacture of galenicals, however later on, systematic synthesis and production of organic chemicals and chemotherapeutic agents would be undertaken. Merck, Sharp and Dohme; Eli Lilly; Squibb; to name a few were some of the drug houses established in the mid-1800s. Some large German firms had their own factories in the United States long before the U.S. entered World War I.

During World War I, U.S. drug firms started expanding their activities abroad to a greater extent than before. In 1929, after the opening of the Shanghai Branch, the following account appeared in the Lilly Sales Bulletin of Eli Lilly and Co.

> For the past few years Eli Lilly and Company has set about in an earnest way to develop the foreign market. With full knowledge of the conditions and with an appreciation of the fact that it would take a lot of the spirit of our pioneer fathers to develop foreign markets,....a capable staff of some twenty Lilly representatives have worked faithfully during these years until the Lilly label has gradually and surely gained ground (Clark 1946, p. 113).

WORLD WAR II TO THE PRESENT

The demands of World War II for all types of pharmaceuticals placed an unprecedented strain and pressure on pharmaceutical manufacturing facilities and almost overnight, manufacturers were faced with the multiple problems of stepping up production of existing machinery a hundred fold or a thousand fold. It was during these trying times that research in penicillin and other antibiotics was at its peak, and steps to increase production of penicillin were made (Davies 1967; James 1983; Keller and Smith 1969). This is reflected in the advertisements by several pharmaceutical manufacturers during the 1940s in trade journals such as the Oil, Paint, and Drug Reporter. It was during this time that the large drug plants in the U.S. established subsidiaries in other countries, not only in Europe and Australia, but in South Africa and the Near and Far East as well (Davies 1967; James 1983).

Various interrelated factors contributed to increased global trade by the drug firms in the U.S. and in other countries in this period. Significant advances in technology which led to the discovery of newer, more effective therapy took place in this period. Manufacturing know-how increased, enabling production of pharmaceuticals in huge quantities. Demand for medications increased world over because of their greater effectiveness and availability. This was coupled with an increase in economic growth leading to greater purchasing power of consumers, helped by national health insurance systems in some countries. However to better understand the tremendous changes taking place in the period, the post World War II period can be divided into three important eras, namely, (a) 1940-1960: The Golden Era (b) 1960-1980: Era of Regulation and (c) 1980 - to the present: Era of Strategic Alliances which are discussed below. A literature review suggested each of the three eras to be distinct periods in the post World War II age.

1940-1960: The Golden Era

Most European drug executives speak with reverence of the golden age - the late 1950s. In the U.S. too, the pharmaceutical industry was at its peak, when one company consistently made over twenty percent net returns on sales, and the industry average was over eleven percent (Keller and Smith 1969).

Several synthetic compounds were discovered in this period. The availability of a wide range of synthetic compounds and the advent of public health care systems coupled with a surge in economic prosperity and political stability, created a tremendous growth in the international pharmaceutical market (Keller and Smith 1969). Before World War II, Europe was generally regarded as the fountainhead of pharmaceutical research. However, since World War II, the United States pharmaceutical industry became the undisputed leader in new product development. During this period, the U.S. drug firms dramatically increased their investment abroad. Between 1950 and 1959, the value of total U.S. investment abroad rose from twelve billion dollars to almost thirty billion dollars. In 1959, exports of chemicals and allied products by U.S. firms hit a record high of over one billion dollars. Companies such as Abbott Laboratories, American Home Products, Johnson and Johnson, Eli Lilly, etc., were among the globally oriented players in this period. A prominent observer during this period dubbed this phenomenon of frenzied international expansion as the "gold rush" (Moskowitz 1961).

Most U.S. companies entered foreign markets primarily through licensing arrangements with top ranking French and German companies (Fenton 1963). American companies also had strong market shares in Canada and Latin America during this period. In Europe, they were strong primarily in Britain. Seven of the ten leading companies in Britain at that time were American. The poor standing of U.S. companies in rest of Europe, Africa, and Asia has been attributed to the presence of strong national companies in their respective countries at that time. Besides, the British and the French pharmaceutical firms still dominated the market in the colonies previously occupied by them.

The key factor in the early success of the American drug companies was their technological

leadership. A number of important pharmacological innovations in United States, particularly in th antibiotic and corticosteroid fields, produced a virtual revolution in the pharmaceutical marketplac Technological leadership coupled with adequate resources and a lack of organized competition enable many of the larger American drug companies to secure important market positions individually an these companies, in several large markets, became collectively the largest national group of companies By 1960, the U.S. lead in the drug export race, with Switzerland, Great Britain, West Germany, and France also in the race (Chem. Engg. News 1960).

1960-1980: The Era of Regulation

This period was characterized by increasing discontent of the public with the industry especially in the U.S. and Britain leading to greater regulatory controls over the practices of drug firms. Cries of "unethical promotion," "excess profits'" "soaring costs of drugs," and the like were commonly heard (Chemical and Engg News 1961). Although regulatory reforms were actively formulated in Europe and the U.S. in this period, pharmaceutical manufacturers had been subject to reform long before this time. In France, during the fourteenth century, the apothecaries were required to subscribe to a formal oath before being permitted to practice. They had to swear to:

> live and die in the Christian faith, to speak no evil of their teachers or masters, to do all in their power for the honor, glory, ornament, and majesty of medicine, to give no remedy or purge without the authority of a physician, to supply no drugs to procure abortion, to prepare physicians' prescriptions exactly, neither adding, subtracting, nor substituting anything without the express permission of the physician, to avoid the practices of charlatans as they would the plague, and to keep no bad nor old drugs in their stocks (Lawall 1927, p. 166).

An ordinance in Paris in 1359 provided that no one should be granted the title of "Master Apothecary, unless he can show his ability to read recipes." In Germany conditions must have been much the same, for in Nuremberg in 1350 there was a decree providing that "the pharmacist shall conscientiously fill all written and verbal orders to the best of his ability; that he shall use none but pure drugs; that he shall treat rich and pure with equal courtesy; that he shall be modest in his charges and not demand more than he needs to feed and clothe himself and those dependent on him" (Lawall 1927, p. 167). Thus the concepts of drug purity, customer service and price controls are not modern concepts by any means.

Before World War II, competition in foreign trade was only a decorous kind of tug-of-war which improved muscle tone and didn't hurt anybody. After World War II, with the entry of the American firms, competition became intense. Pfizer, a leading American firm and one of the first to go overseas, adopted aggressive methods of sales promotions that left European competitors shocked. A chairman of a leading pharmaceutical firm in Holland was quoted as saying, "I have great respect for them (Pfizer), but they really are bulldozers." In the 1960s, Pfizer startled the industry by a publicity stunt in Britain, which involved arranging golf matches for doctors and distributing a couple of golf balls marked "Pfizer" to each competing doctor (Keller and Smith 1969). By 1969, about half of the British market belonged to American pharmaceutical companies. Increased competition brought with it increased need for regulation.

The thalidomide disaster served as the catalyst for increased regulatory reforms being implemented (Smith 1983). Thalidomide was a tranquilizer-sedative marketed by Chemie Grunenthal in West Germany as an OTC. The product was distributed for approximately 3 years before Dr. Leng, a pediatrician at the University of Hamburg, discovered and reported to the company that it caused phocomelia, a birth defect in infants. By this time several thousand infants had been affected. The U.S. passed the Kefauver-Harris amendment in 1961 which imposed serious regulatory controls over the

American based companies. This amendment made pharmaceutical research a more expensive and time consuming process by requiring substantial evidence of efficacy for approval of new drugs. Germany introduced new regulations concerning advertising of pharmaceuticals and related products during this period. Stringent governmental rules discouraged several smaller firms from venturing abroad in the 1960s and 1970s. One author commented on this situation stating, "..we have almost as many different situations with regard to drug regulations as we have countries" (Fenton 1963). Different reimbursement systems introduced in countries made the process of internationalizing operations more complicated.

1980 To The Present: The Era of Strategic Alliances

The earliest forms of strategic alliances were the organization of pharmacists and physicians into a guild in Italy and other parts of Europe in the Middle Ages. However unlike today, these alliances were formed mainly for social and welfare purposes and for regulating conditions of trade, although the guilds did ultimately achieve a monopoly in the trade of drug products, mostly with the government backing them (Kremers and Urdang 1940). In present times, alliances are formed in the face of increased competition, to gain better access to markets, and to pool resources and spread the risks of expensive research and development.

Corbyn, the English druggist and trader, in the mid-eighteenth century formed a loose network of relationships with a group of Quakers around the world - mostly in colonial America and in the East Indies. The Quaker connection proved to be the key to Corbyn's success. Because of the moral and business codes of the Quakers, Corbyn was able to send large consignments of expensive drugs to people who had never heard of him, and they in turn felt able to buy from him with confidence. This was essentially because of the special relationship among members of the Quaker community who addressed each other as "Loving Friend" (Liebenau, Higby and Stroud 1991, p. 20). Such credit and confidence were absolutely indispensable to the rapid expansion of Corbyn's long-distance trade. Thus the basic reason for forming alliances in the eighteenth century versus today still remains essentially the same - i.e., gaining market access, improve image, and pool resources, although the resources that need to be shared in the twentieth century (mostly research skills and promotional abilities) differ from the type of resources shared in mid-eighteenth century Europe (mostly distribution channels and financial resources).

The United States today constitutes the largest market for pharmaceuticals. Sales in the U.S. in 1984 exceeded twenty-two billion dollars, which was more than twenty percent of the world's total demand. Of the top twenty leading pharmaceutical companies worldwide in 1989, the distribution was: 13 - American, 3 - Swiss, 2 - German, and 1 - British. Clearly American companies dominate the market today (Teitelman 1989). In the past few years, the traditional strengths of the pharmaceutical companies - patented products, pricing flexibility, and steady innovation - have begun to erode. Several top selling drugs lost their patents in the eighties and more are expected to lose their patent in the coming years. Governments are increasing price regulation on drugs to control health care costs which is further eroding the profits of the industry (Temple 1991). These developments have led companies to form strategic alliances with each other (James 1983; Teitelman 1989). This trend of acquisitions and mergers is expected to continue in the future, in an attempt to reduce R&D costs and duplication of efforts. Today, it costs anywhere from a hundred million to a hundred and twenty-five million dollars to develop a new drug, which is up from about ten million dollars just twenty years ago (Teitelman 1989).

With competition intensifying, increasingly aggressive strategies are being used (Chemical Marketing Reporter 1991). A classic example is the rivalry between U.K. based Glaxo and the U.S. based SmithKline for market share of their anti-ulcer drugs, Zantac and Tagamet respectively. Medical journals are filled with comparative advertisements of these two drugs. Glaxo went all the way to promote the newcomer Zantac by mobilizing all of its sales force, about a thousand of its own medical representatives in the U.S., and hired four hundred more medical representatives from Roche to sell

its product. Product swapping is another strategy used increasingly by multinationals. In the market, Sandoz for instance recently traded rights of a calcium-channel blocker to Glaxo in retur Glaxo's over-the-counter drug Zantac. This is happening because multinationals are choosin concentrate on a select range of products rather than have a broad range (Tietelman 1989). The to survival nowadays is being able to generate innovative products. Merck is currently in that posi having produced four major products (with several more expected) over the past few years. Japa firms are also moving to set up joint ventures and subsidiaries as their home market gets satura However Japanese drug firms are still nowhere in size compared to multinationals such as Me Roche, or Glaxo. But Japan already has two drug firms in the world top twenty, and has overtal America as the world's most innovative drug producer, ranked by the number of new drugs (T Economist 1988).

With a slump in drug sales in major markets (i.e., America, Europe, and Japan), multinatio drug firms are now turning to South-East Asia to keep up their profits. Pharmaceutical consumptic in South-East Asia has been growing at eighteen percent a year and some governments are offeri attractive incentives to high technology firms. The South-East Asian market is as big as the Britis market (The Economist 1986).

Inspite of the tremendous changes taking place, it is useful to reflect and compare th marketing strategies in the areas of product, pricing, distribution, and promotion used historically sinc the middle ages to the present. Have changes in technology changed the criteria for successfu pharmaceutical marketing around the world, or do the basic principles of global pharmaceutical marketing remain the same? This question is examined below.

MARKETING STRATEGIES USED HISTORICALLY AND TODAY

(1) Product Policies

When a firm decides to market a drug product abroad, there are a number of product considerations to be made, such as whether the product will treat the disease condition, how it needs to be packaged and labeled, what are the country's registration procedures, will it need major adaptation to the foreign market in terms of its dosage form, color of the product, etc. (Pradhan 1983 p.103-105). Today companies do extensive market research to study consumer preferences across the world, regarding color of the medicine, whether the consumer prefers to take the medicine by mouth or as injection, and so on. In France, consumers have been found to prefer rectal suppositories to oral medication and the Chinese consider blue and red colors to be auspicious for good health (Keller and Smith 1969).

Historically, taking the example of the clay tablets, which are the earliest known example of a "finished drug product," although it is known that they came in several different colors, it could not be determined if certain colors were sold only in certain countries, i.e., if the manufacturers did employ any such strategy. All that is known is, that they were extensively distributed throughout the known parts of the world and were used for treating certain common ailments of those times. However, they did use different seals, depending on the geographical source of the drug, so apparently the trademark concept existed even in those times.

Italy, in the early 1900s, was also active in the trade of finished drug products. The monasteries in Venice were famous for its medicinal waters and an antidote called "Venetian treacle." These were also supplied to the different parts of the European continent. Again, with regard to how these products were packaged and labeled, or to what extent they were adapted to the foreign markets is not clear. Later, in the 1700s and 1800s, when some druggists began to manufacture drug products in their own laboratories with secret formulations resulting in proprietary medicines called "nostrums," the main

product considerations when exporting them were "purity" and "effectiveness" (Kremers and Urdang 1940, p.109). Most of the exported or imported finished drug products were used for treating common ailments such as diarrhea, dyspepsia, constipation, cough or cold, etc. In the late 1800s and early 1900s, the manufacturing firms which developed also seemed to consider the foreign market needs as similar to the home market needs. For example, the products of Allen and Hanbury's, an old English pharmaceutical company had operations in several countries at that time, but there is no indication of any special product considerations for marketing in a foreign country. In fact, such companies seemed to prefer to sell their products where English was the spoken language and even where English was not the native tongue, the products were still labeled in English (Bader and Picker 1947). It was only after the second World War when competition for foreign markets intensified, that companies began paying greater attention to the unique needs of consumers in foreign countries.

An important consideration in product strategy is the packaging and labeling aspect, particularly in the case of pharmaceutical preparations. The design of the package reflects the image of the company, the quality of the product, and its reputation in the market. Labeling is also equally important and the label has to be developed in such a way as to comply with specifications and other standards in keeping with the regulatory agency of the respective country. Evidence on the type of packaging and labeling considerations for foreign markets in the Middle Ages and the pre-World War II period in general is extremely scarce. Packaging technology today is obviously more advanced and labeling regulations more stringent than in the past, giving manufacturers greater latitude in the former aspect and less options in the latter aspect.

(2) Promotion Policies

Pharmaceutical firms, like other business firms, derive their income from the consumer's dollar, and the success of these firms depends on how fast and how often they are able to get these dollars. Therefore every organization is drawn into a role of communicator and promoter. The present multinational drug firms manage this complex and critical system of communication through a promotional mix consisting of advertising, personal selling, sales promotion, and publicity.

Today, personal selling or detailing is the most important method used by multinational companies for promotion in foreign markets. Most firms have sales forces comprised of natives of the import country and who are familiar with the language and customs of that country. Besides personal selling, advertising in medical journals, organizing exhibitions and seminars among other methods are the forms of promotion used by companies today. Most companies appoint a local Sales Manager or a Marketing Manager to supervise the selling operations (Pradhan 1983, p.139-146).

However personal selling or detailing and even the practice of giving promotional samples is not a modern concept as frequently believed. The records of Corbyn indicate that Corbyn would personally write to surgeons, physicians, dealers, and other "general agents," some of whom were personally known to him (such as the Quakers), and send them a chestful of drugs along with a supply of small bottles and vials and they would then distribute them to the local practitioners. So, essentially Corbyn was using personal selling as his promotional tool. However, it was more of a strategy for distribution rather than promotion since the problem of distribution needed to be overcome first. Word of mouth seemed to play an important role in promotion. The account books of Corbyn also list "presents" of drugs, or what would be termed today as "free samples."

However, according to Mahoney (1959), a letter written in 1879 reveals that the practice of detailing physicians is an American practice introduced by Burroughs Wellcome in Britain. In a letter by Mr. Burroughs to Mr. Wellcome, the former writes enthusiastically of the opportunities in England and states, "our house is the only one in the kingdom making a business of calling on doctors with samples of new things" (p. 98).

In the late 1800s, when British and German pharmaceutical companies started exporting wares, the distributional aspects were tied with the promotional aspects. Typically, such comp would send their own agent to the foreign country for extended periods of time. This agent would contact the medical profession and the druggists and wholesalers. A depot would then be formed i market looked attractive, and some more agents from the home country would be stationed the carry out the sales operations.

The content of the advertisements in the sixteenth and seventeenth century show that exporters and importers emphasized the "purity" element more than anything else, which suggests t the adulteration of drug products must have been quite rampant and a serious problem for practition (Kremers and Urdang 1940, p.173). In contrast to today, the advertising content emphasizes "cost-effectiveness" characteristic of the drug in response to the rising health care costs and t government regulations. The extent to which the drug products had been processed was also advertis back in the eighteenth and even up to the early twentieth century. Issues of the Oil, Paint, and Dr Reporter of the 1940s reveal the spices as being advertised by the wholesalers and retailers as "Indi cardamom, bleached medium and decorticated" and "Indian cardamom bleached strong" (Oil, Paint, ar Drug Reporter 1942). In general, the emphasis of the content in advertisements promoting dru products has changed through the years from:

Geographical Source-->Purity-->Extent of Processing-->Effectiveness-->Safety-->Cost-effectiveness

(3) Distribution Policies

The export sales department of a modern day multinational negotiates the transactions with a sales or manufacturing subsidiary of the same company located in another country. Such negotiations involve the establishment of transfer prices, product manufacturing, quality control, modification and development, payment procedures, title transfer and related matters. Distribution is also done on a contractual basis and involves different types of middlemen such as export merchants, export commission agents, foreign import agents, import merchants, foreign sales subsidiaries of manufacturers, international trading companies, etc. These middlemen differ in aspects such as taking title to goods, whether or not they hold inventory, or take any credit responsibility. Multinationals also have a variety of organizational approaches to choose from which can help in distribution, such as licensing versus a joint venture versus establishing a subsidiary. The present day situation in international pharmaceutical marketing is characterized by cross-licensing and joint ventures by major pharmaceutical companies which prefer to take advantage of the existing know-how of the companies already established in some foreign country where they desire to sell their products. This is a result of the increasing sophistication in demand for pharmaceuticals and the complexities in the regulations of different countries which has made cross-licensing and joint ventures a more viable alternative for distribution (Pradhan 1983, p.155-170).

There is lack of evidence as to the type of distribution networks employed in the Middle Ages and in the days of the Venetian drug trade. Exactly how the clay tablets were distributed is also not clear. Flood's study (1975) of drug trade in fourteenth and fifteenth century Europe, revealed that there was an increase in the import of drugs and spices between 1327 and 1490 in Italy and Germany, but the increase was not uniform. Cities where the increase was uniform were located on major trade routes such as Modena and Frankfurt. An interesting trend noted by Flood was that there was a decline in the number of drugs imported in 1461 in Frankfurt as compared to in 1450. However, Flood concludes that the presence of a document such as a drug inventory at that time, indicates that use and purchase of pharmaceutical items must have been done quite systematically and with greater sophistication than we imagine. Again, the means by which these transactions were fulfilled remains unclear.

As mentioned previously, the English drug wholesalers like Thomas Corbyn in the 1700s and 1800s had an effective distribution network through their Quaker connections. The demand for drug products in the colonies was so great that overseas customers would contact Corbyn on their own initiative. A letter dated November 4, 1828 from a Peter Stryker of Somerville, New Jersey contacted the Corbyn firm asking for some hundred and thirty drug items as well as bottles, stoppers, and other such items. Letters of correspondence indicate that Corbyn constantly sought information from his agents about the nature of competition and that he allowed his agents considerable discretion in the transactions they made with the local purchasers. His contacts were mainly in the Americas, ranging from Nova Scotia and New England southward to Jamaica and Antigua (Liebenau, Higby, and Stroud 1990, p. 17-19). Corbyn would sometimes send lists of potential purchasers he wished his agents to contact, occasionally accompanied by a word of diplomatic advice and a letter that he would want to be handed over to these purchasers. One such letter began as:

> I have herewith sent a small chest, a sortment of those articles in most common use, which are choice good of their kind, and to judges will recommend their selves. My design is to supply yee with a proper stock and sortment that thou may serve the doctors and planters, especially those who do not commonly send their orders directly to London (p. 19).

Agents were free to make what profit they could. They were however instructed to send closely-itemized sales details to Corbyn. Thus Corbyn had a centralized decision making structure but at the same time gave considerable autonomy to his export agents.

Due to the dramatic advancements in technology and information systems, it is possible to have much more sophisticated distribution channel structures today than in the days of Corbyn. Joint ventures, network relationships, global sourcing, etc., have made pharmaceutical distribution more complex and challenging than before. However the personal relationships that benefitted Corbyn in his export trade still remain an important consideration even today for firms desirous of building a successful export business.

(4) Pricing Policies

A survey conducted in 1973 among some five hundred large American multinational corporations revealed pricing to be the most important factor in overseas marketing strategy (Pradhan 1983, p.119). Many firms have little control over the prices they are able to charge their customers when there are government guidelines and regulations. But for others who are able to differentiate their drug products from the "me-too" types or make price comparisons difficult, price becomes an important element of marketing strategy. Prices differ from one country to another for the exact same product made by the same firm because every country has its own system of taxes and import duty. Distribution costs, product registration costs, promotional costs all vary from country to country which affect the prices of drugs (Pradhan 1983, p.119-139). The price that a parent firm charges its licensee or its subsidiary is determined by a method called "international transfer pricing." Transfer prices are usually judged according to the internal standards of the firm and the external standards set up by government authorities in both the countries. Modern pharmaceutical product prices reflect a substantial component of the R&D and advertising costs.

Flood (1975) did a study of the history of drug commerce in late medieval Europe, where he looked at a drug inventory dating back to 1345 from Modena, a city in Italy in those days. Prices per ounce of certain drugs like pepper, cumin, mercury, tragacanth, incense, etc., revealed that the price differential among these drugs was related to the distance from which the items were imported. However the price list bore little resemblance to the tax assessed on the same items between the years

1311 and 1453. Flood concluded that the complex factors involved in pricing and taxation polici that period are areas for future research.

In the eighteenth century, the major component of the price was transportation costs and labor cost of production. Formulations made by different processes had different prices. D manufacture in those days was without doubt labor intensive, involving a long series of stages fi bidding at auctions and elsewhere for sacks of raw supplies from the East India vessels, through the f dispatch of orders in neatly labeled glass bottles, which were packed in chests and insured. Corl usually specified a minimum wholesale price and an "advanced" price. Corbyn gave his distribut twelve months credit and was quite particular about timely payments. There is no indication of a government intervention in price setting at that time. It was only in the 1950s and 1960s, that varic government agencies all over the world were set up to regulate prices of drugs (Pradhan 1983) Countries today differ in the extent to which prices of pharmaceutical products are regulated. The U. has the least number of price controls and remains the most attractive market for multinational dr firms for the same reason. However, price controls on drug products are expected to increas world-wide and companies will have to find other means of maintaining their profitability in the fac of such regulation in the future.

CONCLUSIONS

International pharmaceutical marketing has progressed from an era of trade in spices and crude drugs in the Middle Ages - to marketing of "proprietaries" in the seventeenth and eighteenth centuries; from scientific discoveries and profits in the 1940s and 1950s - to an era of controversy since the 1960s to the present (Business Week 1974; Times Review of Industry and Technology 1963). Nevertheless, there is no doubt that the benefits of trade in medicine have been immense, both in terms of precious lives saved, improved health, and longer life spans for mankind and in terms of the millions of jobs created by pharmaceutical multinationals around the world. With changes taking place in technology and transportation, the source of competitive advantage of the firms participating in the global marketplace has changed from manufacturing capabilities to innovative capabilities. Ability to discover new drugs which are more effective and less costly is the key to success today. Purity and safety of the product - traditional criteria for success are now merely criteria to be satisfied in the FDA drug approval process. However, personal selling and other means of promotion, though more sophisticated today, are still as important as they were during the Middle Ages when the clay tablets were stamped with identifiable trademarks. Image of the firm is still an important advantage today as it was in the past when Thomas Corbyn chose to associate himself with the Quaker image. Price of the product is now determined to a large extent by the expenditure on research on the product rather than the distance that the product had to travel to get to the market.

The pharmaceutical industry has been under heavy criticism since the 1970s for some of its questionable marketing practices in the developing countries, in particular from congressional committees, consumer representatives, government agencies, and to some extent from the profession of pharmacy itself. This criticism is regarding promotional practices, profit levels, and judgments of cost-to-benefit ratios on drug matters (Chemical Marketing Reporter 1984; Chetley 1990). However, as competition among multinational companies intensifies, and as more countries enter the race, there is likely to be a common code of law governing international pharmaceutical marketing practices. Irrespective of the future status of the industry, millions of people probably owe their lives to Christopher Columbus and his men for their effort in attempting to find a route to the East, which ultimately lead to international pharmaceutical marketing.

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