Historical View of Licensing

A product of the 19th and 20th Centuries, its unique role is traced in developing today's industries and societies

BY BASIL BARD*

We recognize that the 19th and 20th Centuries differ from all previous ones in the history of mankind, not only because of the great inventions that were made, but because industry, commerce and society generally became organized to prepare, plan, and arrange a pattern for their widespread utilization. In so doing, the face of civilization was changed. The world is a different place today materially because of these various developments; in health, in way of life, in our business and social environments, in our factories, in our warfare and in our leisure and hobbies, by reason of these inventions.

You will note I have used a number of familiar key words, "invention", "development", "innovation", "utilization". They represent interrelated phases in the onward progress of man's conquest of nature and of his environment. It is not necessary to attempt elaborate definitions of each of these stages, but we may usefully consider them in slightly fuller detail.

A typical major contribution to industrial economic progress passes in sequence through four stages. The first is the invention itself based on the creative concept of an inventor or a team of inventors. This is often preceded, particularly in applied chemistry and physics by a scientific discovery, e.g. penicillin by Fleming or electricity by Franklin and Faraday, but many discoveries do not lead to inventions. Equally many inventions are not preceded by discoveries.

Following the invention is the development state. There is a fundamental distinction between the two, even though one emerges from the other and it is difficult to draw a sharp line between them. Development will frequently require the investment of substantial resources which have to be justified from a business risk viewpoint. During the invention and development time periods patent applications are normally filed. We all know a patent has a precise legal meaning and patent office records contain numerous specifications, some of unique inventions. Nevertheless, although there are a plethora of statistics it is difficult to draw many useful conclusions from them. The next stage may be described as "innovation" where the new product or new process is put on the market and becomes commercial. At such time only the owners of the patent rights and any licensees under these may become a party to the project, but diffusion of knowledge into the industry and particularly into the hands of customers and users follows rapidly. This next phase, "diffusion", is the one which I think particularly interests us today. We know that many inventions and innovations are superseded before the patent has expired, whereas others have a continuing and enduring life. In the former case, diffusion takes place under patent licenses, but in the latter after the patents have expired the still useful knowledge is available to the world. It is this phase of diffusion which has resulted, as I mentioned earlier, in the transformation of our industrial and social society.

From LES International Conference

**First National Finance Corporation Limited; winner of LES Gold Medal, 1973.*

Studies, for example, by the U.K. National Institute in Economics and Social Research have shown that diffusion, although generally more intense and penetrating in the country where a project is initiated, eventually becomes more extensively widespread in other countries. This is partly because of licensing activity, partly because of competitive initiative, and partly because of the general adoption of the technology in its original or some modified form by the industry after the expiration of the patents. It is also sometimes found that in the country of origin the technology is sustained by new developments which add extra life (this is known as the "sailing ship" effect), for examples, fluorescent lighting and the safety razor.

The widest diffusion of technology has occurred in Sweden, with U.K. also high on the list.

It is important to distinguish between "innovation" and "technology transfer". The latter follows the former after the "innovative phase" and maybe either the application of the technology to a new use or by a new user, or indeed both. Transfer can often result in an enhanced value of the innovation by reason of the extension of its utilization, either by direct expansion of the market, or through cross-fertilization of ideas, thus realizing much greater benefit and an improved competitive position for the owners. Initially it is normally of a domestic nature, but if the project proves to be successful, export follows in the form of new products and foreign licensing agreements.

Table 1 contains statistics for the year 1971 showing monies received and paid out for foreign technology by a number of leading industrial countries. The true figure in each case is almost certainly much larger, as it is probable that neither cross licensing agreements where little or no money passes, nor many arrangements with subsidiary companies are included within these figures.

A word about "know-how" agreements. One aspect of these is to constitute an important part of information flow, both as regards new techniques and their actual and potential markets. In turn these lead to increased output from existing equipment through technical and managerial improvements and also to new production for new

TABLE I LICENSING AGREEMENTS (1971)

Country	Receipts $m.	Payments $m.	% Receipts to Payments
France	260	420	61
West Germany	170	430	40
U.K.	320	290	110
U.S.A.	3,000	260	1,131
Japan	70	550	12

products or maybe also existing ones. Companies outside such information interchanges are likely to lag in development in the relevant art. The resulting situation differs somewhat from one industry to another; in some independent competition through the companies on R&D program results, in others the sector in question becomes of secondary importance and the company expands its business into some other area where it is stronger. In particular therefore, a company with subsidiaries of licensees abroad or which is a member of a group of companies will gain vital information and therefore a lead about techniques in their industry, their progress, success, and relative efficiency.

Today's patents are used to obtain and maintain monopoly positions and licensing takes place with reluctance, using the following sequence, for justification

i. to subsidiary companies
ii. to associated companies
iii. in joint ventures
iv. under patent inter-change agreements
v. in return for another product
vi. for money only

More recently the rise of the multinational corporation has resulted in their new products being able to secure "in-house" a high volume of international sales. The only licensing normally resulting is to foreign subsidiaries (this can also help the various tax positions).

This is one reason why there is pressure from time to time and by various groups in various countries for compulsory licensing regulations.

We may note also that 19th Century inventors appeared for the most part reluctant to license. Like true capitalist-enterpreneures they developed their own businesses, or sold their rights to a company for shares and money; infringers were subject to litigation rather than being given the opportunity of participation under license. Examples of such 19th Century inventors who established new companies are the Swede, Alfred Nobel (explosives), the French, Brins Brothers (oxygen), the English, Perkin (aniline dyes) and Lawes (fertilizers), the German, Linde (liquid air distillation), the Canadian, Wilson (calcium carbide production), the Americans, Castner and Dow (industrial electrolysis) and the Belgian, Solvay (ammonia-soda). Nor must we forget Samuel Crompton (early textile machinery), Oliver Evans (steam engines and farming machinery), both of whom were substantially involved in patent litigation. Although we know that by the turn of the century industrial teams were taking over from the individual and sometimes lone inventor, in fact the records show that, these great inventors of the 19th Century worked quite closely, both with industrial companies who were interested and the scientists who were studying the academic background. They were much more than energetic empiricists who struck lucky. Many of the important 20th Century developments have also derived from individual inventors who were initially remote from the industry they benefited; for example Baekeland who created Bakelite, Carlson the pioneer of xerography and Cottrell whose patents on electrostatic precipitation were transferred to the Research Corporation of the U.S.A. for exploitation. 20th Century inventors appeared to be much more willing to license their results than expect one industrial concern to secure and maintain a monopoly position. For example, Francis W. Davis licensed some of the larger American motor car companies on his many patents covering hydraulic power steering, gears, and pumps.

Although we recognize that in the 20th Century, R&D came of age and such programs are carried out mostly by the large firms, employing more than 5,000 people, and that probably 95 percent of the smaller companies do not participate actively; nevertheless small firms account for many important inventions and innovations in our century.

Patents statistics are not a satisfactory yardstick because firms and industries have different policies. Some companies do not bother and prefer to rely on secrecy. In the U.S.A. large firms have a lower propensity to patent. Small firms cannot afford not to do so.

Jukes showed that of 70 major 20th Century inventors the majority were made outside the R&D departments of large firms. In other words, universities, small firms, and private inventors have made a large contribution. Nevertheless the majority of these were commercialized by big firms which carried out the development work, often under license arrangement.

There are obviously differences in industries according to scale of capital investment and type of business. Among highly technological businesses the small firms' contribution is modest, but in engineering, scientific instruments, electronics, materials, consumer goods etc. the figure was about 1 in 6 to the small guy. Most of the small firms' innovations were subsequently licensed internationally whereas the giant corporations kept them in their own family as long as possible.

Generalizing, it was difficult to say that the large companies played the major role; sometimes it was the other way round. A large number of factors are involved in a decision as to whether a new technique or product or system is required in a company or in a country. The attitude of management is the most important. Good management considers licensing, either in or out, within its key policy decisions.

Let us now consider some specific examples from major technological industries, and first the pharmaceutical industry.

THE PHARMACEUTICAL INDUSTRY

Of all world industries this one by reason of the universality of the need for its products and the corresponding high volume of production of useful drugs is probably the one where the patents system and consequently licensing is the most meaningful in the context of the international dissemination of new processes and product technology.

An outstanding example and case history is penicillin, the records of which could itself occupy a full conference paper. As is well known the pioneering work carried out in the United Kindom by Fleming, Florey and Chain was not patent based and the resultant know-how transmitted to the United States under the urgencies of war-time conditions enabled American industry to evolve at short notice large-scale production processes which were subsequently licensed in all the developed countries. A British research team came back in the late 1950s with the semi-synthetic penicillins based on the isolation of the penicillin nucleus, and again a new round of licensing followed, resulting in large-scale production of the improved drugs. It is interesting to compare and contrast the two phases. In the earlier one there was no product protection and licensing was based on processes and related know-how. In the latter patent control of the product provided the means for a more rational licensing policy with greater advantage to the owners of the patents, the licensees, and the general public who are, of course, the ultimate recipients and beneficiaries of antibiotics.

This story was repeated with variations in the cephalosporins with the licensing of which I was personally associated when I was in charge of this project at the National Research Development Corporation U.K. The story bears retelling for it is a splendid example and case history of the evolution of science, the ingenuity of inventing research teams, and a consequential widespread but controlled production on a world basis under license; and despite the very strict laws now obtaining in many countries in the world on the use of new drugs a substantially rapid absorption into the body of medicine and a consequential extraordinary growth in output rates.

The original discovery of the medically active material was made in Sardinia shortly after the War and specimens were subsequently sent to Lord Florey's Laboratory in Oxford for study. The discovery as such was not patentable, but as a result of work carried out initially at Oxford and subsequently in collaboration with Medical Research Council workers in England, a range of patent filings were made internationally to cover the chemically identified key intermediates and the related processes. Thereafter under option for license, synthetic products were prepared by various pharmaceutical companies in the U.K., U.S.A. and Japan.

As each company identified a unique cephalosporin derivative with relevant medical properties, it completed the license agreement with N.R.D.C., acting on behalf of the British inventors, and also helping to finance their R&D program. The licensing activity was in two phases, put between 1958 and 1962, and again between 1968 and 1971. The first product was put on the market in 1964, almost simultaneously by Glaxo Laboratories in the U.K. and the Eli Lilly Company in the States. Today some six different licensees sell some 10 active products in the market (out of perhaps 10,000 that have now been synthesized from the cephalosporin nucleui) and sales of these products now exceed $500m. a year.

This record shows how effective a rational licensing program can be in ensuring worldwide utilization of an important new medical discovery; in contra-distinction to the more traditional method of technology diffusion under which for many years the project remains in its host's nest.

THE CHEMICAL INDUSTRY

There are several key factors in the emergence of the chemical and related industries over the last 150 years and we may note in particular first the rapidly increasing market for various simple basic chemicals, e.g. soda, ammonia, sulphuric acid, and ethylene as building blocks for more complex end products; and second, the switch to derivatives of oil and natural gas, leading particularly to the evolution of a whole range of new synthetic materials mostly defined as "plastics". The original entrepreneurs, as I have said, established new companies at the end of the 19th Century. These, in turn, became absorbed into larger groups, e.g. I.C.I. British Oxygen Company, or retained their identity but grew into giants, e.g. Dow, Solvay. These giants entered into various licensing agreements of a broad character with each other, e.g. Nobel licensed DuPont in the States and Solvay licensed Brunner Mond (later of course I.C.I.) in the U.K. In particular these arrangements covered improvements, to the great mutual benefit of both organizations. In the dye-stuffs industry Germany became the world leader and by 1900 had 80 percent of the world's business. There was intense competition to find synthetic routes, e.g. to Indigo and Alizarine, but here the competition was so keen that licensing was contraindicated. In Switzerland the leading companies imported their basic materials from Germany, concentrating their research on the end products. For example, the "contact" process for sulphuric acid was originally patented by BASF in Germany at the turn of the century, and later licensed to the U.S.A. firm General Chemical Company, which built the first contact plant in the U.S.A. in 1906. This technique is still in substantial current production.

The development of synthetic nitrogen-type fertilizers was originally based on special catalysts. By refusing to license the German originators kept seven years ahead of their overseas competitors; but a second phase based on chemical engineering hydrogenation was developed by I.G. Farben after the first world war and sold to Standard Oil in the U.S.A. in 1929 under a major license agreement for a single, very large, lump sum. This very important transaction meant that thereafter the major developments in refinery activity and fuel oil cracking took place in the U.S.A. Standard Oil developed a strong patent position and licensed many companies at a good royalty rate. Competitive research was carried out by the Armour Company, forming UOP for the special purpose of development, patenting and licensing. Progressively all the leading oil companies became involved (Shell, Esso) and the story becomes very complex with cross licensing arrangements, patent litigation and further competitive work by other companies excluding e.g. Sun Oil, Socony, who considered that the royalties required were too high. Table 2 gives a list of the major firms concerned, the patents they contributed and their approximate share in the royalties.

TABLE II PATENTS AND ROYALTIES IN THE FLUID CATALYTIC-CRACKING PROCESS

Company	Patents Contributed	Approximate Share Of Royalties from Process (%)
Standard Oil, New Jersey	296	39
Standard Oil, Indiana	96	2
Shell	38	7
Texaco	55	2
U.O.P.	239	32
Kellogg	57	17

Plastics

In the field of plastic and synthetic textile materials there was also substantial international licensing enabling production to take place in many countries. Probably because these materials, by reason of their bulk and relatively lightweight, are not suited to direct export.

Plastics have become one of the world's main industrial materials group already exceeding in output nonferrous metals and on their way to approaching that of steel. This high growth has been parallelled by innovation and patenting. Eighty percent of these major synthetic materials were innovated in the 20th Century by the large chemical firms; in contra distinction to the 19th Century synthetic materials such as Bakelite and celluloid developed by the inventor/ entrepreneurs I mentioned earlier. Leo Baekeland who pioneered Bakelite built up his enterprise through subsidiary companies and international patent licensing. I.G. Farben dominated the world picture in synthetics from 1925 and after the War its constituent firms (Bayer, BASF and Hoechst) continued this tradition. The last name collaberated with Professor Staudinger and Dr. Ziegler in innovation work in low-pressure polyethylene, including consultancy agreements to cover licensing of the relevant processes. In the main however, I.G. Farben's policy was to use its patents for protection rather than for licensing.

Terylene, the I.C.I. polyester fibre Dacron (in the U.S.A.) and Trevira (in Germany) was originally invented by the Calico Printers Association in 1940 who licensed their innovation to DuPont in the United States and I.C.I. in Britain. These two firms spent £20m. on development before marketing started in 1950.

Polyethelene was originally developed by I.C.I. who early on licensed DuPont. In 1952 U.S. Courts required I.C.I. to license other U.S. chemical firms including Monsanto and Dow. This led to a rapid growth of new applications and to a corresponding increase in licensing fees and know-how payments to I.C.I. Table 3 shows the relationship between patents and innovations in synthetic materials.

Scientific Instruments

Although the application of basic scientific knowledge and production processes through the profession now known as "chemical engineering"; coupled with the development of the relevant instrumentation for monitoring and controlling flow processes, has been vital for the evolution of much modern industry, there appear to be very few relevant or even interesting licensing stories in this particular field. The markets are specialized and each company normally seeks to protect and retain for itself the special products it has developed.

Electronics

We may note first that major electronic products are seldom "inventions" in themselves, although they often embody novel components and are assembed into "systems".

The story of radio is particularly interesting. Studies were carried out in Britain, Germany, and U.S. in the first decade of this century, and as early as 1912, Marconi and Telefunken reached a worldwide agreement covering patents licenses and know-how. This was renewed in 1919 and in fact is understood to be still in being. Between them

TABLE III PATENTS AND INNOVATIONS IN SYNTHETIC MATERIALS

Patents and Innovations	Total	Percentage World Total IG Farben	Du Pont	I.C.I.
All plastics patents taken out by firms 1791 - 1945	6,777	20	6	2
All plastics patents taken out by firms 1931 - 45	4,341	20	8	2
"Major technical advances" in patent literature - 1791 - 1945	117	26	10	6
Innovations in synthetic materials 1870 - 1945	56	32	9	2
"Major innovations" 1870 - 1945	20	45	10	5
Innovations 1925 - 45	36	44	11	3
First "Imitations" 1870 - 1945		14	4	8

TABLE IV JAPAN-LICENSING AGREEMENTS

	Number Of "A" Agreements	Royalty Payments	"B" Type Contracts	Royalty Payments	Total Contracts	Total Royalty Payments $m.
1950/1955	518	56	623	13	1,141	69
1956/1960	832	250	941	31	1,773	281
1961/1965	2,184	618	2,310	74	4,494	692
GRAND TOTAL	3,534	924	3,874	118	7,408	1,042

they dominated the U.S. patent situation and it required the intervention of the Navy Department to set up the famous Radio Corporation of America (R.C.A.) which immediately concluded cross-license agreements with Marconi and Telefunken. R.C.A. subsequently also cross-licensed with A.T. and T.

In television early developments were carried out by R.C.A. in the U.S.A. and E.N.I. in the U.K. In 1936 these companies entered into a cross-license and know-how agreement. R.C.A. subsequently developed color television, licensed to various European electronic firms who carried out their own successful downstream development work.

The early defense developments in radar led after the war to a variety of civil applications devised by American and British firms. Licensing agreements were entered into with companies in other countries, e.g. Germany to help retrieve their technical lag.

The chief significance of licensing to the computer field has been the compulsory licensing requirements imposed by the American courts on I.B.M. which have led to a greatly expanded use of their technology.

After the war, transistor developments became very important and these were widely licensed in particular to Japan — with well known results substantially affecting European industry. The Bell basic patents in transistors were also made available to all comers by reason of an antitrust suit settled in 1956. Licensing arrangements were negotiated individually with each company either with or without know-how, most of the royalties returns in fact coming from companies outside the U.S.A. Subsequently there were a variety of license agreements with the Fairchild Company to secure the use of their semi-conductor developments. In the main the American companies whose R&D expenditure in the electronic components field was enormous have substantial positive balances in license royalty returns. Per contra the later developments in germanium and silicon transistors were substantially involved with major government contracts in the U.S.A. Licensing, therefore, was not so important.

Let me turn now to the impact of licensing on a national economy where a deliberate policy decision was made to use licensing as the main instrument for recovery from disaster.

The story of Japan's industrial renaissance after the Second World War is well known. It derived largely from license agreements on an enterprise-to-enterprise basis between mostly, but not entirely, American companies as licensors and Japanese firms as licensees. The system was strictly controlled by the Ministry for International Trade and Industry. There were two types of agreements for such technological assistance, the "A" type covered a minimum period of one year, the royalty being paid in foreign currency, and the "B" type was for less than a year or where the royalty was paid in Japanese currency. Table IV sets out the number of such agreements and the total royalty payments in $ millions.

Between 1950 and 1960 the industry of Japan was totally transformed and brought up to date and by 1965 a new generation of developments emerged, particularly in the fields of cameras and other optical equipment, scientific instruments, and automobiles, which were achieving world sales. During the last 10 years we have witnessed a progressive change in the royalty income and expenditure balance for Japan by virtue of its own program of international licensing through the three traditional media of subsidiary companies, joint ventures and straight forward licensing.

Coming back closer home, I have recently carried out an analysis of the progress of 50 major inventions of this century — Reference The Sources of Invention (Jenkes, Sowers and Stillerman) — to ascertain the extent to which the use of the licensing process was responsible for their widespread use. The figures are highly significant I believe, and are as follows:

Played important role	15	62%	30%
Played smaller role or was concerned in later international diffusion	16		32%
Major patent litigation involved	3		6%
No noticeable part	16		32%
	50		

Where success was achieved without licensing the business supported its own developments, e.g. the Giro-compass, Kodachrome and the self-winding wristwatch, and was sufficiently substantial to look after all the market as well.

It is interesting to assess whether the examples of significant licensing represent any particular pattern, and I have studied closely the 15 cases of major inventions in the 20th Century whose widespread international success has certainly been due in no small measure to the intelligent licensing policy of the owners of the rights. I must confess that I can find few other common features. In half of them the inventors came from within the industry and in half

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ment (UNCTAD) in Geneva, and the United Nations Headquarters in New York.

It is becoming clearer and clearer that the leaders of the world are giving more and more attention to the problems of technology transfer — and particularly technology transfer between the industrialized countries and the developing countries. Some of the industrialized countries recently put forward plans and new initiatives for technology transfer, and there is a need for improving the overall climate for exploring technology transfer. LES International is in a unique position to assist in this effort, and it is my hope that in the immediate future we can exert a real and beneficial influence in improving the technology transfer process which is so badly needed in the world today.

I believe most of you have probably noticed that the content of Les Nouvelles is becoming more and more international, and this, again, is an indication of the growth and importance of the concept of LES International.

I also take this opportunity in my final message to announce that Mitsua Okano was elected president-elect of LES International at the Board meeting in Basel. We offer him our congratulations and look forward to his becoming president in January 1977. I also would like to offer Bertil Hedberg our congratulations and best wishes as he succeeds to the Presidency of LES International in January 1976.

My Swan Song as President of LES International would not be complete without specifically recognizing the tremendous support and aid that I received from the other officers of LES International, including the Presidents of our 11 Member Societies; Homer Blair of LES U.S.A., Jim Barrett of LES U.K., Jacques Gaudin of LES France, Hardy Pedersen of LES Scandinavia, Sergio Lanaro of LES Italia, Morey Matsumoto of LES Japan, Florent Gevers of LES Benelux, Eric Sunman of LES Australia, Bjorn Vadillo of LES Mexico, Marc Besso of LES Switzerland, and Byong Ho Le of LES Korea.

More particularly, I owe an especial debt of gratitude to the immediate officers of LES International: John Gay who, as past-president, gave me strong support and made a great contribution to the successful organization of the Basel International Licensing Conference; Olav Naper who, as treasurer, did an energetic, thorough, and extremely intelligent job of straightening out our complex International accounts, which involve most of the world's leading currencies; and Michael Burnside who, as secretary, gave unstintingly of his time and energy to keep all of our far-flung Member Societies supplied with the important information and notices needed to maintain LES International as a cohesive organization, who traveled thousands and thousands of air miles to be at my side at our Board meetings and other meetings held in such widely separated places as Bermuda, Paris, Tokyo, Budapest, Basel, and Scottsdale, and who faithfully recorded and distributed his excellent minutes of our meetings. His retirement as secretary in 1976 will be a great loss to LES International.

Also, I wish to express my thanks to Tom Arnold who, as Secretary of LES U.S.A., gave generous help to LES International by editing, assembling, and distributing the LES International roster, and by ensuring that Les Nouvelles was delivered to our members worldwide — to mention only two specific instances of the many ways in which he contributed to the smooth functioning of LES International.

This year as president of LES International has been the most thrilling and exciting of my life. I could not begin to name the hundreds of people who gave me their utmost help and cooperation. It has been an extremely busy and fascinating period, and although I look forward to not having the responsibility of President next year, I also will do my best to help with the continued prosperity and growth of LES International in whatever way I can.

Again, thanks for making it such a memorable and rewarding experience.

Historical View

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they were independent of it. In half the cases the "inventor" was a private individual and in half he was a member of a Company R&D team. The inventions in question were mostly unique (e.g. Nylon, D.D.T., Xerography) rather than competitive (e.g. cat cracking of petroleum or fluorescent lighting).

The licensing policy was such that licenses were usually issued early on in the commercial evolution of the project, either because production facilities were inadequate or because this proved to be the best way for international diffusion. In a few instances there were already general license arrangements between the industrial concern and third parties in other countries within the terms of which the inventive rights fell, e.g. T.V, Terylene. Finally, in one or two instances a corporation was formed with the special term of reference of extending the licensing program, e.g. electrostatic precipitation and Xerography.

Where the invention was competitive, litigation sometimes ensued, e.g. magnetic recording and shell moulding. There was little or no licensing when the corporation owning the inventive rights believed that it possessed sufficient resources to cope with all the demand.

I must now attempt an assessment and summing up of this material with which I hope I have not wearied you. I must first point out that I have not been able to cover adequately all the major product areas — consumer goods, metallurgy (the Bessemer blast furnace development, for instance, revolutionized steel making and earned its inventor a fortune, partially through royalties), agricultural products notably herbicides, insecticides and veterinary compounds, and mechanical engineering. The Wankel engine story, for example, is a fascinating one. Also power and energy; today atomic power units can form the subject of licensing. This is a subject to which a whole day, indeed a whole conference could easily be devoted. But despite these limitations, I submit a few conclusions stand out loud and clear.

First, we may note the mechanism of the licensing role. This can arise as a form of technology transfer as soon as there are actual or potential reception centers and market demands for a new project. It may be negatived if the owners of the relevant rights so decide. This in turn produces a dynamic — active to compete with alternatives, or passive to await the expiry of the patents.

Second, in one out of three major situations, licensing in fact occurs fairly early on. Either by reason of pre-existing arrangements or through *force majeure:* the need for money or market pressures for broader accessibility to the new product or process. In another one out of three situation the owner license later on, to diffuse the technology internationally, but well before the patents have expired.

Third, over the past 100 years licensing has progressively become very big international business in innovation transfer and diffusion within and across national boundaries as the most convenient and sensible procedure for this purpose.

Fourth, it can be demonstrated to have played a major role in some industries and a significant role in others, but its potential and actuality has spread right across the manufacturing and commercial spectrum of the developed countries.

Finally, it can truthfully be said to have played an important, special and in some ways, a unique role in the positive economic development of our industries and society today.

Franchising

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ular Tandy departments offering a limited assortment of Tandy articles to the clients. Tandy has set up one of the world's biggest distribution networks.

Amusing Franchise

A rather amusing franchise system is being operated in the U.S.A. by a lady named Mrs. Jean Nidetch. It is the "Weight Watchers" franchise which is a method to reduce a person's weight. The franchisees obtain from Mrs. Nidetch, the founder of the system, the know-how to give particular lessons to clients as to how to attain a slim figure through high-protein food diet. The participants in such lectures congregate every week, step on a scales, and note how much weight they gained or lost. Each period of lectures lasts 16 weeks. In eight years, there were more than 3 million participants. The psychological impact of merely by working together to lower a person's weight is astounding. Many people eat very much because they feel lonely. A Weight Watcher Review with the circulation of more than 500,000 copies reinforces the well-organized system which has been exported to other countries.

Speaking of Weight Watchers I would like to revert once more to the much more important problem of the fast-food restaurants. It is significant to note that only Wimpy and a few of the internationally well-known fast-food systems have been successful in West Germany. The famous Wienerwald restaurants are entirely company owned. Only a few weeks ago, the company announced, however, that it is considering granting Wienerwald franchises in smaller towns, following the trend established by Ihr Platz, Tandy, and Ciro. It should also be noted that McDonald's — which along with Kentucky Fried Chicken is the most successful fast-food chain in the U.S.A. — operates a considerable number of restaurants in West Germany without, so far, turning to franchising.

At this point, a few words about the problem of international franchising may appear useful. The exportation of franchises, mainly from the United States and France, is in full swing and other countries have made some progress, too. Careful franchisors, whether foreign or not, will in all cases have to test their systems in their own enterprises or branch offices before looking for franchisees in a certain country. In several instances, franchisors have successfully operated their business at home but failed or suffered considerable foreign setbacks because they did not prepare their franchising operations carefully enough and neglected to test the new market long enough or consult with appropriate marketing and legal experts. Permanent research and innovation is also an inherent obligation of the franchisor, especially if he operates in foreign countries. A distribution system needs constant improvement and the franchisor, as the leader of the system, must always be ahead of the franchisees in knowledge, know-how, and flexibility.

Thanks to the multiple possibilities franchise systems offer, there is little doubt that national and international franchising will develop rather rapidly in Europe in the next few years. It will facilitate international trading and economic interdependence to a considerable extent and often contribute to mutually advantageous business relationships more than direct investments

Licensing and Smaller Enterprises

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- The smaller company cannot afford to grant licenses into developing countries since, however small he may be, he is considered as the rich partner who must give this know-how away for no money.

- In general the regulations and restrictions concerning licensors have a more stringent effect on the smaller enterprise.

It is therefore a request of the smaller companies:

- To the antitrust authorities to make exemptions reasonable and useful for smaller enterprises and

- To developing countries to make licensing more attractive to smaller companies. Those nations then would have the opportunity to obtain a lot of practical know-how from them.

Technology & The Developing World

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negotiations provide opportunities to hear the developing countries' views with new understanding, and to tell our point of view, with new conviction, to others who are readier, I think, to hear than before.

If all involved do their work well in the weeks and months ahead, the technological fruits of our capitalistic, pluralistic, creative system will be more a part of the developing countries. Likewise, the markets, products and resources of the developing countries will be more equitably available to the developed countries. This will add to the economic and social progress of both.

It will go slowly, and be painful. But the rewards will be worth the effort.

Insights Into People's Republic of China

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Because my company's group did not exhibit machines or equipments, we were not faced with the problem of other Belgian firms which wanted to sell their material on the spot so as to avoid an expensive reforwarding to Belgium.

According to information collected after the Fair, 30 per cent in value of all exhibited equipments were purchased by various corporations.

Appointments

Thanks to the representatives of the Belgian Office for Foreign Trade, appointments with the National Corporations were arranged by the CCPIT. Unfortunately, most of