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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Development and Transfer of Technology Series,

No. 1.

NATIONAL APPROACHES TO THE ACQUISITION OF TECHNOLOGY

Development and Transfer of Technology Series No. 1 · NATIONAL APPROACHES TO THE ACQUISITION OF TECHNOLOGY

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Foreword

The Lima Declaration and Plan of Action adopted by the Second General Conference of the United Nations Industrial Development Organization (UNIDO) envisages that the developing countries should reach by the year 2000 at least a 25 per cent share in the total world industrial production. This challenging task requires the massive application of technology for industrial development. Such technology will be both imported and indigenous. In the past the developing countries have depended heavily on imports of technology, and this dependence is likely to continue for at least some time to come.

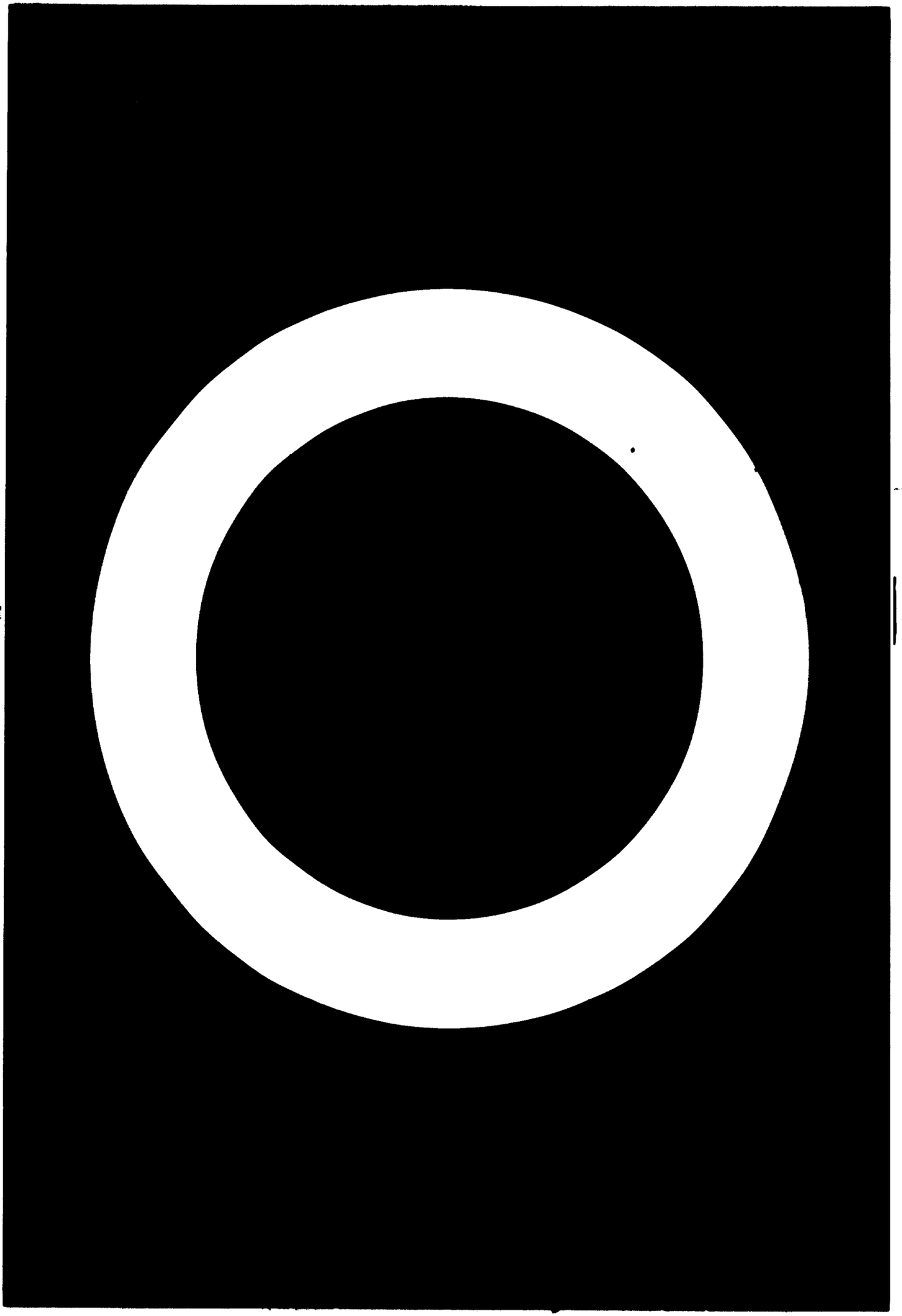
At present the developing countries are in a weak bargaining position with regard to the transfer of technology. Their enterprises lack the capability of selecting technology and negotiating equitable–not to mention favourable–terms of acquisition, and almost no machinery exists for channelling it and regulating its flow to national advantage. The rapid rate of industrial growth called for by the Lima Declaration means therefore that increasingly intense efforts will have to be made to minimize costs and the outflow of foreign exchange, to strengthen the capability of enterprises to select and negotiate the transfer of technology and to increase the capacity of national regulatory mechanisms to handle larger volumes of imports of technology.

Side by side with its assistance to developing countries in promoting indigenous technological development, UNIDO has devoted considerable attention to the problems developing countries face in acquiring technology, both at the enterprise and national levels. In particular, the approach that Governments of developing countries have adopted to this question is of primary importance from several points of view. This approach has been the subject of discussion and exchange of experience in several meetings organized by UNIDO, and the considerable amount of material thus collected forms the basis of this publication.

This study has been devised to cover matters of practical interest to both Governments and enterprises. It presents several case histories of government regulation and discusses the salient aspects of contractual negotiations and the variations in licensing practices in specific industries. Marcus B. Finnegan, past president of the Licensing Executives Society, serving as consultant to UNIDO, compiled the material, but also made an original contribution.

I hope this study will be of practical assistance to Governments and enterprises in developing countries. Though it cannot, in the nature of things, provide ready-made answers, it should encourage articulation of the many questions that must be answered before effective transfer of technology can take place. It is the first of several studies that UNIDO will issue in the "Development and Transfer of Technology Series".

DR. ABD-EL RAHMAN KHANE
Executive Director



Preface

With the rapid world-wide advances in technology, countries are becoming more and more dependent on each other for raw materials, markets and technological improvements. Many enterprises are no longer able to engage profitably in research and development if the fruits of their research and development are marketed only in one country. To remain competitive, most enterprises must support their research and development through world-wide marketing and must also be able to reap the benefits of international advances in technology.

Similarly, the need for a new international economic order, which was repeatedly emphasized at the Sixth Special Session of the United Nations General Assembly, makes it imperative that all owners of technology think in the future of how their technology can be effectively and efficiently placed in the hands of the developing countries. The owner of technology cannot successfully function in the market of his own country without an intimate knowledge of its business practices and laws. If owners of technology and those who wish to acquire it are to operate effectively in the increasingly important international markets, they must have knowledge of the business practices and laws of the major world trading areas, which include both developed and developing countries.

This study is intended to discuss many of the principles, business practices, and laws that govern licensing, and, more generally, transfer of technology in the world at large. Thus, it includes an examination of broad principles and of specific problems in specific parts of the world. Although the study does not provide answers, it should encourage articulation of the many questions that must be answered before effective technology transfer can take place.

It is hoped that the study will help make the difficult and complex field of technology transfer more comprehensible. The world is coming to appreciate the critical importance of finding more effective ways of transferring technology if some of the exasperating problems confronting it today are to be solved.

Much of the material in this publication is based on papers presented to the Regional Seminar on Know-how about Licensing Arrangements held at Manila from 30 May to 6 June 1974.

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EXPLANATORY NOTES

References to dollars ($) are to United States dollars.
The term "billion" signifies a thousand million.
References to "tons" are to metric tons.
In tables a dash (–) indicates that the amount is nil.
Figures in parentheses are keyed to the reference list.

The following abbreviations are used in this publication:

Organizations

EEC	European Economic Community
MITI	Ministry of International Trade and Industry (Japan)
OECD	Organisation for Economic Co-operation and Development
UNCTAD	United Nations Conference on Trade and Development

Other

f.o.b.	free on board
NPV	net present value
ROI	return on investment

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Annexes

Introduction

Industry advances to a notable degree through the transfer of technology from one company to another and from one country to another. The progress of all companies is based to some extent on the accomplishment of other companies. Several well-recognized reasons for this transfer of technology exist.

For a start, the cost of research and development is so high that it is becoming generally accepted that a company with high research and development expenditures may not be able to recover these costs from its own operations alone. Hence licensing the resultant developments to others and thereby obtaining a return from outside is becoming increasingly important.

Furthermore, because no company, however extensive its operations, even if it is one of the greatest international companies, can cover all the markets of the world, licensees can, in effect, enlarge the market. Unnecessary duplication of research is a drain on both commercial and national resources, and if it can be arranged that certain industrial companies devote themselves to the development of those specific areas of technology in which they are especially efficient, while other companies devote themselves to their own areas, the sum total of new technology may be increased.

For these reasons the use of licensing in the developed countries is growing. In developing countries, licensing is related most often to the establishment of production and to industrialization in general.

In making decisions on foreign investment, licensing is an alternative to investment. Even when foreign investment takes place, separate licence agreements often govern the related transfer of technology. These facts, together with the implications of foreign-exchange outflow common to all such cases, explain the historically close relation between policies relating to licensing and foreign investment.

Licensing has multidisciplinary dimensions. A technology licence agreement has legal, economic and technical aspects. It often involves the use of patents and trade marks. In this study, "technology or know-how" denotes the sum of knowledge, experience and skills necessary for manufacturing a product, or operating a process, and for establishing an enterprise for this purpose.

As an instrument for transferring technology, licensing is applied singly or in combination with other instruments such as foreign investment, import of machinery or import of technicians. Licensing arrangements do not, therefore, cover the entire flow of technology to developing countries. The emergence of licensing as a distinct mechanism depends on the factors that contribute to the separation of technology as a transaction in establishing production. These factors include the experience of a country with the same technology, its technological infrastructure, its indigenous capability for fabricating machinery as distinct from dependence on turn-key equipment and its policies.

But what is licensing? Licensing is an ambiguous term, but it usually contains the basic element of granting a right. Export and import licences, for example,

permit businessmen to take goods officially in and out of a country. In certain countries, India, for example, industrial licences confer the right to make a particular investment as granted by the authorities.

Generally, in Western Europe, licensing practices are based on the view that licensing is essentially a private commercial activity between licensor and licensee, and it is from this standpoint that the subject is discussed here.

A licence may be defined roughly as an agreement by which the licensor extends to the licensee a limited right to make, use or sell the licensed object; usually for a consideration or a royalty. In the simplest legal terms then, a licence is the right to make use of, among other things, a trade mark, a patent or know-how.

Somehow, this definition lacks a vital element. From the licensor's point of view, licensing is one of several important marketing strategies. Where heavy transport costs or other factors make the physical movement of goods difficult, or where import regulations or sheer market size make exports impracticable, it may be advisable to move products to the market in question by means of licensing. In this sense, licensing has several advantages. It does not call for heavy investments or major management resources, and it has proved to be an extremely important area of economic and business co-operation. It has a multitude of aspects, and it may be illuminating to go into some of the more important ones briefly.

Many casual observers often assume that licensing is restricted to large firms. This is not so. Size, moreover, is relative. According to a definition in *LES Nouvelles*, the international journal of the Licensing Executives Society (LES), large firms are those having an annual turnover valued at $1 billion; the others are small. In the present context, businesses may be classified according to the value of their annual turnover as follows (million dollars):

Small	Below 10
Medium-sized	10-100
Large	Above 100

Even in these terms it can be said that many small firms are often highly successful licensors.

An important distinction should be made between the licensing of inventions and the licensing of innovations. Invention licensing is often done by inventors themselves—the smallest kind of firm possible. It is also, of course, done by research institutes, whereas the trend in industry now seems to be to concentrate on licensing innovations (apart from sheer spin-offs). By innovation is meant an invention that has been developed into a practical, industrial model with complete know-how regarding equipment, processing, distribution and the like.

Another main distinction is between the licensing of industrial rights and licensing of know-how. A licence agreement usually includes a bit of both, but it appears that know-how licensing is assuming greater importance in licensing, although it seldom stands quite alone. One reason is probably the high rate at which change is taking place in the modern world.

Experts, especially patent lawyers, seem to focus their interest on the legal distinction between patents and other industrial rights as opposed to know-how. Another side, however, could be stressed, namely, that industrial property rights, as such, carry a static connotation, whereas know-how points to something that is always changing. Patent licences tend, therefore, to be fairly rigid, and often by law extend only for the lifetime of the patent. Know-how licensing is more dynamic, and, therefore, often lasts for a much longer period. This is because a licensee will be

interested in renewing an agreement only when he is obtaining something tangible, namely, that the licensor is continuing to develop the object of the licence. In this sense, it can be said that one aspect of licensing is that the licensee is hiring the research and development function of the licensor in the particular area covered by the agreement.

This leads to another notable distinction. Many people believe, incorrectly, that licensing is something typical of high technology. A clear distinction can be made, however, between high-technology and low-technology licensing, which may be a direct consequence of the investment concemed. High-technology licensing is often patent licensing. It nearly always contains a fairly high down payment as compensation for successful research and very often, as in the licensing of big gas tankers from Norway, it happens in a very limited market. Not many shipyards are in a position to accept a licence agreement of this kind.

Low-technology licensing, on the other hand, often contains an important element of marketing. In the licensing of systems for laboratory and shop equipment, the amount of initial research is small. It is of great interest, however, to the "licensing family" (see below) that members be able to develop their designs and technology faster than their competitors and that, especially as an intemational group, they succeed in placing themselves in a better position to judge market trends and marketing approaches.

It is also useful to distinguish between product licensing and the licensing of secret processes, which is particularly typical of the chemical industry.

Another type of licensing contains the important element of distribution. This occurs with franchising, where the object of the licence consists of trade-mark rights and methods of conducting a business. Still another example is the licensing of a trade mark to a distributor in a foreign market.

These examples illustrate the broad scope of licensing. They also convey an idea of how licensing is developing today. Here, two main trends can be detected.

The first trend is the development of the so-called licensing family, where the licensor creates a network of licensees in different markets and they all act as a family in developing specific technology and know-how. This kind of licensing is typical of some of the licences mentioned above, e.g. licences for chemical processes or for laboratory and shop equipment. An important characteristic of licensing families is that special committees are set up to promote the technical and marketing aspects.

The second trend is licensing in bigger packages. Licensing as a part of joint ventures is also a most important development, as can be seen in the new co-operation agreements between firms in Eastern and Western Europe. These agreements are built upon technical, economic and industrial co-operation formulae reached some years ago.

To sum up, the basic idea of licensing is the granting of a legal right. To the licensor, licensing appears as a marketing alternative, the essence of which is to move production to the market in question, but in the hands of a licensee. To the licensee, licensing appears as a suitable means of increasing his share of the market through diversification or improvement of his range of production, based on the use of the licensor's research and development. Licensing is extremely adaptable and appears in many forms, but the main feature is long-term co-operation between licensor and licensee.

The terms of a licence agreement are arrived at between negotiators representing the licensor and the licensee. In practice, the terms tend to become settled when the

licensor and the licensee are each satisfied that the terms are beneficial to him. In practice, once the struggle over terms is over, the parties acknowledge that they have an acceptable agreement and usually operate thereafter in harmony. A contract that does not represent a "true agreement" is seldom either wise or successful, and the best agreements are those that are worked out between equal parties, each vying for the best deal and ultimately reaching a mutual understanding that is advantageous to both.

As a result of these negotiating efforts, certain lines of approach have now become well recognized in the developed countries, and the limitations on both licensor and licensee are reasonably well established. This realization simplifies licensing negotiations in that each side knows from the beginning both what is reasonable and what is unreasonable and what will probably be acceptable to the other party. This knowledge is an important part of the education of a licensing negotiator, for without it he is likely to waste his efforts in unproductive contention and fail to obtain advantages the other side may be quite willing to concede but can hardly be expected to offer.

In the developing countries there is frequently much criticism of the kind of terms prospective licensees are expected to accept from licensors in the developed countries. In some instances their criticisms may well be warranted, but in others they may be misplaced. Thus, it is not uncommon for enterprises in the developing countries to object to clauses in licence agreements that licensees in the developed countries accept as a matter of course and even believe to be to their advantage. A simple instance (although, of course, it is difficult to generalize) is the frequent objection of potential licensees in the developing countries that they are expected to purchase special raw materials from the licensor. This requirement is sometimes demanded by a licensee in a developed country as a means of ensuring that he shall have access to a key raw material that is guaranteed to be satisfactory in the licensed process, perhaps because the licensor also uses it in his own plant.

In addition to whatever licensors and licensees may find acceptable between themselves, there are national interests to be considered. Consequently, most Governments have, from time to time, themselves placed limitations on what they are prepared to allow their companies to accept. The most simple instances arise from the expenditure of foreign currency and the balance-of-payments problem; a Government may not be prepared to allow its nationals to accept financial liabilities to foreign interests without some form of control. This problem formed an important issue in Western Europe immediately after the Second World War. It is much less of a problem now with the removal of controls on national currencies. On the other hand, new sanctions are now arising because the European Economic Community (EEC), on the basis of antitrust considerations coming partly from doctrines developed in the United States of America, is placing restrictions on the kinds of agreement that companies can make in consonance with the Treaty of Rome establishing the Community.

Licensing can meet the needs of proprietors of technology and the needs of enterprising citizens and commercial interests in developing countries. The normal rules must be carefully tailored to special conditions in each area if the chances of success are to be realistic. Through skill, patience and a genuine effort to understand the requirements of the other party, licensing can be an effective medium and catalyst for development.

I. Transfer of technology through licensing

Since the end of the Second World War, technological knowledge has played a more important role in industry everywhere in the world than ever before. Moreover, the need to develop new technology at an ever-accelerating pace has led to a rapidly growing international exchange of technical knowledge. The exchange of new technical information may help to avoid duplication; alleviate the tremendous costs that can no longer be borne by the industry of one country; and assist developing countries to participate in every facet of the modern industrial world.

To raise the standard of living of their own populations, developing countries would like to utilize the science, technology, engineering and know-how available in the industrial countries. They would like to acquire technologies developed and already used successfully elsewhere for this purpose. It is in this context that the transfer of technology from developed to developing countries through licence agreements assumes significance.

The exchange, or transfer, of technical knowledge is possible in various ways. The mere export of goods implies in itself a transfer of technical skills. Engineers and technicians of the firms in the receiving country acquire new information merely by operating new machines. A much more intense exchange or transfer of technical knowledge is brought about when a firm establishes a plant in another country, if nationals of the host country obtain access to the technical know-how that is involved in the manufacturing process.

The mode of technology transfer can be classified into two major categories: *(a)* where the inflow of technology takes place without the inflow of foreign capital; and *(b)* where the technical know-how is transferred along with foreign capital. In the latter form, foreign enterprises are established either as foreign subsidiaries or as joint ventures comprising both local and foreign capital. In these cases, it is sometimes difficult to distinguish the technological from the entrepreneurial contributions.

When know-how is transferred independently of external capital and foreign entrepreneurship as it is in the first category of agreements, it may be transferred in different ways through several types of enterprise-to-enterprise licence agreements. Sometimes the transfer is effected through documents the enterprise or agency donating its technology provides, such as blueprints, designs for the product, manufacturing instructions, layout patterns, process flow charts, engineering flow charts, load diagrams, equipment specifications and details of data processing. Alternatively, technical personnel may be sent to take temporary charge of specific operations. Sometimes the licence agreements authorize the use of a specific patented procedure, but carry with them no instructions, documentation, or technical assistance, which information then has to be obtained separately from some other enterprise or firm of consultants.

Agreements relating to the transfer of specific know-how can be established either with foreign firms in the same branch of industry or with enterprises or

organizations engaged solely in the elaboration and refinement of know-how and not in manufacturing activities. In practice, both procedures are common.

The enterprises of developing countries generally prefer to negotiate agreements with foreign enterprises in the same branch of industry, particularly in connexion with the design and manufacturing specifications for products or the use of trade marks and patents. Process engineering and plant operation know-how are also frequently obtained by these means.

Firms of consultants are more often the source of process know-how for continuous-process industries, as well as of plant design and construction techniques. In many of the continuous-process industries (especially petrochemicals), plant operation know-how is also provided as part of a package deal that includes selection of process and plant design and construction.

Know-how may be obtained through a licence agreement representing outright purchase and not implying continuity in the supply of information, or it may be purchased through a licence agreement providing for the continuing supply of data on future innovations or improvements.

In the first case–that of licence agreements covering the once-and-for-all transfer of know-how–a lump sum is paid, generally based on installed capacity rather than output. Payment may be made on deferred terms or by instalments. Once the process or the design (whichever is the object of the agreement) has been supplies to the industry in satisfactory condition and in accordance with the standards of performance and quality specified in the agreement, the responsibility of the firm granting the licence virtually comes to an end except for the firm's moral obligation to help the licensee if operational difficulties occur. This type of agreement is almost always of a non-exclusive character; in other words, it does not prevent the licensor from granting similar rights to another enterprise. If the licensee firm should subsequently expand its capacity, additional payments have to be made.

The problem confronting licensee enterprises in developing countries in connexion with licence agreements of this type is to find a means of overcoming a perpetual technological dependence on the licensors in the highly industrialized countries. One solution might be to make use of processes obtained through licence agreements contingent upon the implementation (by the licensee enterprise) of research programmes on specific questions with a view to transplanting gradually the capacity to develop and elaborate new techniques. In many cases, however, steps in this direction will be successful only if several licensee enterprises, and not necessarily these confined to one country, co-operate.

The second type of agreement presupposes that the relationship between licensor and licensee will be prolonged for a lengthy or indefinite period through the automatic supply of reports and data on new technological improvements introduced by the licensor enterprise. Under such agreements, the licensee is usually the sole holder of the manufacturing rights in the specific geographical area in which the licensee will market its products. The agreement often includes the right to use brand names or trade marks and provides for a great deal of assistance in marketing as a means of safeguarding the international reputation of the licensor's trade names or processes.

Agreements of this type are usually paid for on the basis of the licensee's invoicing for the products manufactured under the licence and calculated as a percentage of f.o.b. ex-factory sales prices. In addition to these regular percentage payments, an additional payment may also be made when the basic know-how is

released. An initial moratorium is frequently granted, and another common practice is to establish minimum annual payments in the event that the percentage of sales should fall short of those levels.

This type of agreement obviously allows for the most comprehensive transfer of know-how, not only because of the nature of the information transmitted, but also because of the greater need to adapt the manufacturing processes and products to the conditions prevailing in the licensee country. Accordingly, the licensee is compelled to undertake adjustments that will entail research and development and thus gradually generate the independent evolution of technology in the recipient country.

The export of goods to other countries is often difficult because of trade and tariff barriers or other outright prohibitions, e.g. impediments to the transfer of payments, capital or labour needs, management problems, legal problems and tax difficulties.

Licence agreements appear to constitute a middle approach to the entry into foreign markets, occupying a position between export sales and overseas manufacturing (1, p. 1), (2, p. 9). Recently, the number of licence agreements concluded between firms in industrialized countries and firms in developing countries has risen considerably. Formerly, international licensing was a domain of large firms, but recently medium-sized and small firms have entered the field.

There are certain advantages to international patent or know-how licence agreements, as compared with exporting or manufacturing abroad. First, licensing is characterized by relatively small investments in comparison with funds required to establish a distribution system for export sales or to acquire plant and equipment needed for foreign manufacture (1). Secondly, licensing often is regarded as a marketing tool that can be employed very effectively to secure entrance or greater penetration into foreign markets. This consideration is important, since government restrictions are still a determining factor in international trade, despite many efforts in recent years to lower or to remove tariffs. Thirdly, in granting a licence, a firm not only avoids many difficulties and hazards connected with financial or business activity in a foreign country, but also may have the advantage that its products are being manufactured and marketed by personnel familiar with production and sale in their own country (1).

One characteristic of the transfer of technology through licence agreements is that the transmission of technical know-how is limited to a small section of the economy. The methods of transfer can be "closed-circuit" (from one enterprise to another), open, or intermediate, according to the degree of dissemination of the transferred technical know-how in the industrial environment of the country that received it. Know-how has frequently been transferred in a "closed-circuit". When know-how is transmitted from a foreign parent company to a local branch, the benefits are confined to the enterprise that receives it. This type of transfer hampers the process of disseminating the know-how and raising the general technological level. The closed-circuit method of transmission contributes to the maintenance of a structure of industry reflecting sharp technical disequilibria, a phenomenon known as "technological dualism".

Thus, the question arises as to what extent it is appropriate to permit the transfer of foreign know-how to individual enterprises in a developing country through licence agreements. Often, know-how could be imported collectively through national technological institutes, which would ensure that the techniques brought in from abroad would be disseminated throughout the industrial sector. Such an

approach might benefit developing countries that are short of the foreign capital necessary to obtain imported technical know-how. However, several considerations must be weighed before an international licence agreement is concluded to avoid later mishaps that could lead to considerable difficulties or even to the total failure of the licence agreement and accompanying financial losses.

II. The technology for licensing

Selection of technology and adaptation by private firms

Generally speaking, a private firm, in making a decision on what technology to license, selects the most advanced technology that will best promote its market competitiveness. However, the problem in selection lies not in the level of the technology, but in the economic feasibility of the process or project. Sometimes the most sophisticated technology has proved to be unfeasible under certain conditions. At times a process that was very profitable for one company has proved to be quite the opposite for another.

One company, for example, introduced equipment that was integrated with highly sophisticated automation devices for interlocking the production process of a certain plant. The equipment worked beautifully. However, the cost of the equipment and of training the technicians was so high that it seriously affected the plant's profitability.

In another case, a company introduced a modern mass-production system. Initially, it could not find sufficient customers for its products. It therefore sustained considerable losses for a prolonged period until market demand increased to a point where the plant's output could be absorbed. In still another case, a petroleum development company purchased expensive drilling equipment for oil exploration. The company, however, lacked sufficient geological data and was staffed by too few geologists. Consequently, the company was unable to put the equipment to use.

Thus, before a company introduces any new technology through purchase or licence, it must carefully evaluate many factors. Among these are resources in terms of technical experience; manpower; availability of raw materials, parts, components, machines and facilities; organizational structure; market acceptance; competition; product life; availability of funds; and, at times, climatic conditions.

In examining the various criteria for selection, it is best to presuppose two categories of technology: the first is improved technology for manufacturing a known product; the second is technology for manufacturing an entirely new product or a product that is not known to a company.

In the first case, the selection is easier because the company has some experience in manufacturing and marketing the product and it is thus easier to integrate the new technology into its own systems.

Points to be considered in selecting the technology are described below.

Commercially proved process

Purchase of a process that is only in the early stages of development entails substantial risks. Many companies have failed because they purchased processes that were not fully developed.

New ideas are born in laboratories or the minds of men. Such ideas, however, must go through various stages before they can be made commercially feasible. Among these are bench-scale testing, pilot-plant testing and plant engineering. Throughout all the stages, the paramount factor to be checked is commercial feasibility.

It is generally considered that in the chain of development, the last 20 per cent of the research and development is the most difficult part for new processes. For a company with fairly sophisticated technical abilities, it is usually not too difficult to carry out the first 80 per cent of the research and development. Frequently, however, such companies are not able to complete the last 20 per cent.

Therefore, the technology selected should be commercially proved. Even when a licence agreement incorporates a guarantee clause and payment of penalty, the amount of the penalty usually is less than the total licence fee. If the results are unsatisfactory, the licensee stands to be the bigger loser. He sustains losses for the equipment, for the plant and for the time lost, which may be fatal to the success of the project.

Capability to adapt and develop

Another point to be determined is whether the company has the needed technical capability in the given field. For example, even the largest chemical firm would hesitate to adopt new technology involving a fermentation process if it had no previous experience in fermentation.

A producer of chemicals having an interest in producing pharmaceuticals would, before undertaking such a project, ensure that adequate preparations had been made, such as acquiring additional technical staff (pharmacists and physicians) and broadening the marketing organization to handle the additional products.

In this era of relatively fast technological development, it is very important to carry out continuing research to improve the process in order to lower production cost. Continued research and development is the key to survival in today's markets. In this sense, it is most helpful to the licensee if the licence agreement provides that the licensor will supply technology on any improvements. Licensors are generally agreeable to such provisions provided that the agreement also stipulates that the licensee will help to defray development costs in some way such as by paying royalties.

When the licensor wishes to purchase the products produced, it is almost a requirement that he continue to provide information on new developments related to the technology. However, in some circumstances the licensor will be reluctant to provide such continuing information. Examples of such circumstances are when the licensor has no other direct business relations with the licensee or when the general political and economic situation in the licensee's country is uncertain.

Profitability of the new technology

The profitability of new technology is evaluated by routine accounting procedures, which, of course, vary from country to country. They depend on the nature of the technology, the legal systems of the country, and the general corporate accounting procedures. A typical accounting form is shown in annex I.

The most important criteria in the economic evaluation is return on investment (ROI). ROI depends on the life of the product in view of the rapid development of new and improved technology. In industries where technical innovations are relatively fast, a product or process becomes obsolete with the advent of a better product or process. For example, in Japan's chemical industry the optimum ROI used to be 25-30 per cent. However, in recent years, owing to slower development of new technology, ROI as low as 10-15 per cent is considered acceptable.

Availability of intermediates and components

At times, difficulties are encountered in procuring raw materials, intermediates and components. For example, a catalyst indispensable for the operation of a process may not always be available in the licensee's country. If the licensee has to depend on imports, he will run risks in terms of delivery and prices. Or, an electrical component needed for the manufacture of a certain type of machinery may not be locally available. Here again, the licensee must pay special attention to ensuring a stable supply of such components. A major problem newly constructed manufacturing plants have frequently faced has been to maintain an adequate supply of parts.

On the other hand, if the licensor stipulates that the licensee must purchase intermediates and components from the licensor, such a requirement may violate antitrust laws. Such tie-in clauses in licence agreements have involved certain licensors in the United States in antitrust litigation.

Pollution control

Today, pollution-control regulations and laws are becoming more and more stringent. The stiffening of such laws has had serious effects on certain production processes. In Japan, for example, owing to new regulations, not one of the present caustic soda plants, some of which are only a few years old, will be able to continue operating unless the manufacturing process is changed to the so-called diaphragm process. To convert the plants to the new process, the chemical industry will have to invest some $1 billion.

Patent infringement

Normally, international licence agreements that require the licensee to invest in new plant facilities include a guarantee by the licensor that the licence agreement does not infringe on any patent rights. Licensees generally require that the licensor give such a guarantee, and that, in case of infringement, he will pay a penalty or make other arrangements for settlement.

Financial requirements

Companies acquiring outside technology must have the funds to be solvent until operations start to yield profits. For example, in Japan's chemical industry, it is rare

for new production facilities to show a profit in less than three years after starting operations. Therefore, it is very difficult for smaller companies to undertake large investments for new technology.

Climatic conditions

Conditions of climate frequently affect the profitability of an enterprise. Higher operating costs may be due to adverse conditions such as heat or cold. For example, the installation of a pipeline for crude oil in the arctic region costs more than a similar project in a temperate zone. Also, the installation of such a pipeline requires special knowledge of the geology of the region.

Potential market for new products

When a technology to be introduced relates to products that are new to the market or to the licensee, the screening criteria should include another important factor–the market potential of the product. Compared with the evaluation of the technology in question, the determination of market potential is a much less accurate analysis, since it involves many unknown factors. Among the sources of market information are the following: the company's own business department or market research department, trading firms, potential customers, industrial associations, market research consultants and the licensor.

Factors to be considered in determining market potential include the anticipated rate of growth of the national economy, the anticipated growth of the industry or class of persons that are potential consumers of the product, and the total market share the licensee is expected to secure. In this respect, it is often found advantageous to engage the services of outside market research consultants and compare the results of their studies with those of in-company research. Also, the potential licensee may import a small quantity of the product to conduct trial marketing as a means of evaluating the market before making a final commitment to contract for the particular technology.

Problems developing countries face in evaluating technology

Reasons for difficulty in evaluation

For developing countries, the most difficult of the problems connected with the transfer of technology is the first one, namely, the selection of what technology is needed. That a technology suitable in one environment is not necessarily the best for another has been demonstrated time and again in many countries. A country develops technology mainly to suit its own internal conditions and needs and not necessarily for exporting it to other countries. Export of goods and services may be one of the aims of the country. Technology export is of fairly recent origin, and it is not necessarily the most desirable import for a developing country. This may be especially true when the technology being exported is the latest in the field.

Organizations that have developed significant new technologies are very reluctant to license them except under very profitable conditions. Even if these conditions are met, these advanced technologies may not be the most appropriate for a particular developing country.

The developing countries are at a great disadvantage in selecting what technology to acquire through licensing. First of all, the technologies of the developed countries are not specifically geared to the conditions prevailing in the developing countries. If they are, it is only coincidental. Also, the developing countries do not have the necessary infrastructure for studying and evaluating the various technologies available; and sometimes they do not even have the information regarding what technologies are available for a particular job. An organization trying to sell its technology to a developing country will only rarely give such complete and unbiased advice that a proper selection of technology can be made on that basis alone. Very often the result of obtaining advice from such an organization is that its technology and the services of its experts are bought.

Many developing countries lack the necessary expertise even to select their advisers properly, and it is not simple to choose an independent and impartial consultant to advise on the selection of technologies. The handicaps are many. The consultant himself may be unfamiliar with the background, the infrastructure and the social conditions in the developing country. Also, his advice is conditioned by the experience he has had and the expertise he has gained in the industries with which he is familiar.

Even when the necessary infrastructure exists in a developing country for evaluating technologies, many other handicaps have to be overcome if the best choice is to be made. The Government may not have laid down proper criteria for selecting technologies.

In many countries, policies for achieving higher living standards have not been clearly laid down or spelled out in sufficient detail to ensure the selection of appropriate technologies from other countries. Furthermore, the concept of appropriate technology is not always understood and even if it is, implementation is inadequate. Therefore, inappropriate technologies are often selected.

Technology tied with foreign aid

Developing countries are given little leeway in the selection of technology for a particular purpose when the technology is tied with foreign aid. The choice is restricted to the technologies available in the developed country offering the aid. Thus, the concept of appropriate technology, the conditions under which such a technology is transferred from developed to developing countries, and the leverage that will be exercised by the developing and the developed countries on the whole transaction are all influenced by the aid that is offered.

Separation of technology from aid would be desirable. Then developing countries would be more likely to choose appropriate technology, since they would be in a better position to assess all the technologies available irrespective of their source.

The Governments of the developed and the developing countries and the United Nations agencies concerned should co-operate to ensure that technology and aid shall be separated. Aid should be offered to enable developing countries to buy the best

and most appropriate technology suitable for a particular job. For example, technology developed in some developing countries may be more appropriate for other developing countries than technology from the developed countries. However, the developing countries having the technology may lack the financial resources to give aid with the technology. In such a situation, the developed countries, although not having appropriate technologies, are in a position to sell their technologies to developing countries because they are able to tie the technology to aid.

Government acquisition of technology

Frequently, individual entrepreneurs are in a poor position to negotiate the acquisition of technology from a developed country. For one thing, an individual company may not be able to offer sufficient business to the seller of technology for him to be interested. Secondly, the single firm may not have the necessary technical capability to evaluate properly the technology offered. Thirdly, if many units of the same kind are to be established, individual entrepreneurs may import technology for the same item from different sources and from several countries, which would result in the importing of a multiplicity of technologies without adding significantly to the technical capability within the country. Even the terms of such technologies transferred may not be uniform. Different parties are involved, and the negotiations are carried out by different persons in different circumstances.

Thus, it may become necessary for the Government itself to buy technology and make it available to those who are interested. This policy would especially apply to small and medium-scale industries. The Government could establish one or more agencies in the country that would import technologies and make them available along with all other services, including financial help, necessary for developing these industries. For very large industries like steel or fertilizers, business organizations themselves may be able to do all this. For small industries, especially in the electronics, mechanical and some chemical industries, centralized buying of technology is sometimes more appropriate in developing countries.

The centralized buying of technology has one other great advantage. The central organization, in collaboration with the users of technology in the country, can from the beginning associate itself with research and development institutions to obtain the necessary technological help for the individual entrepreneurs and to do additional research and development and thus become increasingly self-reliant over a period of time. If the technology is imported on an individual basis, such an arrangement would be very difficult to bring about. If all these advantages are taken into consideration, a case can be made for centralized import of technology in some developing countries.

Alternative sources of technology

In recent years, wages and salaries have risen sharply and regulations and laws pertaining to new products have become increasingly strict. Consequently, the costs of research and development have also soared. Even the world's largest companies are constantly on the lookout for new and improved technologies developed by others, since it is generally less expensive and quicker to purchase technology developed and proved by others than to develop it oneself.

Among the motives for purchasing technology are to diversify into new fields, to supplement one's own research, to save on time and funds for research and development, to obtain immunity under the patent block of others and to sublicense to others. Purchasing technology may speed the growth of a country's economy.

Japan's petrochemical industry provides a typical example. Although the industry started from zero in 1958, it now ranks among the top three in the world. Its output of ethylene is about 5 million tons per year. Today, some 92 per cent of the petrochemical products sold in Japan are produced with the use of imported technology. In the process of growing, the industry was very quick to adapt and improve the imported technology. It has also been quick to perfect new technology. Thus, in a relatively short time the industry has been able gradually to alter its position from that of licensee to that of licensor.

A somewhat similar pattern is to be found in Japan's electronics industry. In the early postwar period of industrial rehabilitation, the industry purchased much of the technology used in its plants. Today, it exports a major part of its output of transistor radios and television sets.

There are several sources of information concerning new technology. One of the foremost is the patent gazettes published by the patent offices in most of the developed countries. Among the other sources are engineering and industrial research organizations, private firms, government research institutions, educational institutions and consulting firms in various countries.

Technical and trade publications are another important source of information. For the chemical industry the leading publications are *Chemical Week, Chemical and Engineering News, Chemical Marketing News* and the *Journal of Commerce.* A list of some of the publications subscribed to by one of Japan's largest chemical companies is given in annex II.

Another source of information is personal contacts. Company personnel travelling on business and representatives of companies posted to other countries often obtain important information concerning new technology. If a company is seriously interested in licensing technology, it may send its technical personnel to visit the particular firm that owns the technology to seek additional information. In the advanced stages of acquiring new technology this procedure is perhaps the most effective. By the same token, visitors from other companies may also be an important source of information.

Trading firms are another important source of information. These firms have world-wide business networks and in the course of their daily operations frequently come across new information and data.

Engineering firms also have considerable knowledge concerning available technology. Generally, they will undertake, for a fee, to search for the most suitable technology according to the needs of the seeking company. Engineering firms conducting international operations are often excellent sources of information.

Sometimes companies develop a new technology that they find impractical to utilize themselves. In such cases, the company could bring this information to the attention of potential users through various means. One means is through the Licensing Executives Society, an international organization whose members include managers, attorneys and others involved in licensing activities. The Society is an excellent vehicle for technological exchange.

Consulting firms that specialize in the exchange of information concerning new processes and products are yet another source of information. A leading firm in the United States in this field uses computers for mass exchange of information. In the United Kingdom of Great Britain and Northern Ireland there is a semi-public organization that is engaged in a similar activity.

Last, but not least, are international organizations that actively promote dissemination of technical information. Among other sources are governmental and public institutions, diplomatic channels, government-sponsored trade organizations and chambers of commerce.

III. Legal considerations as affected by Governments

Background

As technology transfer grows in scope and magnitude the instrument of licensing is assuming new dimensions and is posing a wide range of complex problems and issues. The nature of such problems is such that governmental authorities, both executive and judicial, have become increasingly involved in the field of licensing. The role of the Government is gradually changing in a number of countries.

The law pertaining to international licence agreements is more complicated than most of the other secotrs of law because it provides for an exchange of technical information across national borders. Consequently, the parties to an international licence agreement have to apply and to familiarize themselves with many foreign legal systems (3). The difficulties arise, in part, because licence agreements do not constitute a separate species within the law of contracts in any country. These agreements may contain so many diverse provisions with regard to restrictions that it is necessary to treat licence agreements as contracts *sui generis*. Of course, many problems have been settled by legal decisions in this field, but many open questions remain because the codified laws contain few express provisions. This is true of all the national laws in the Western world, and that fact makes international licence agreements even more complicated (4, p. 31). For instance, legal provisions may differ from one country to another. In some countries a licensee who has obtained an exclusive licence has the right to sue third parties who violate the patent; in other countries this right does not exist.

Under the law of the Federal Republic of Germany, the licensor may fix the price at which the licensee may sell the manufactured goods on the market (Section 20, subsection 2, No. 2 of the Act Against Restraints of Competition), while under United States law such a provision is, in view of the Line Material and the Huck Manufacturing Co. decisions (5), practically prohibited. The EEC Commission, again, has thus far not declared its view with regard to such provisions,[1] but it is doubtful whether the Commission would allow a price-fixing restriction.

In addition to licensing regulations, laws concerning tax, customs, foreign trade and other matters also affect these agreements. Thus, the turnover and income taxes to be paid by both parties in their respective countries may reach a level that would make a profitable business impossible. However, many countries have concluded double taxation agreements that provide for reductions of the taxes that have to be paid by the parties to a licence agreement, either through deductions for the taxes

[1] The Official Notice of 24 December 1962 does not mention price-fixing provisions in the list of restrictions that are not regarded as violating Article 85 of the Treaty of Rome. On the other hand, that list of restrictive provisions is not exhaustive.

that have been paid in the other country or through a division of the taxes paid between the two countries in question.[2]

Legal provisions concerning foreign-exchange controls also vary widely. Under the Law Pertaining to Foreign Trade *(Aussenwirtschaftsgesetz)* of the Federal Republic of Germany of 1 September 1961, international licence agreements are, in principle, no longer subject to permission. The Federal Bank (Bundesbank) must be notified of royalties from abroad in excess of DM 500, and certain restrictions on licence agreements with Eastern European countries that concern war material exist (4, p. 160). In many other countries foreign-exchange regulations have not been similarly liberalized. The transfer of royalties is subject to permission, which sometimes is granted only after an examination of their adequacy.[3] Other countries, including countries with centrally planned economies, require advance permission for the licence agreement itself because of their centralized systems of currency control.[4]

Further, customs provisions may apply where a licensor obliges his foreign licensee to supply him with goods manufactured under the licence agreement abroad, because he may want to sell them in his home country.

A licensee in an industrialized country acquires technology under very different conditions from those in which a licensee in a developing country acquires it. In the case of the former, the technology licence normally comprises user rights to a specific production process or technique, patented or unpatented, accompanied by related specialized know-how. Both the licensor and licensee have a similar technological background and knowledge. The rights transferred together with the related know-how are quite specific and well defined. As often as not, the licence basically consists of the rights to use, which are protected by patents or trade or business secrets and cannot be utilized otherwise. Both parties are fully aware of the intricacies of licensing, the rights and obligations of each party and their respective levels of technological competence.

What is of considerable interest in the above context is that the role of the Government in the commercial transfer of technology appears to be changing significantly in the United States and in many European countries, while government regulation in Japan continues to be an object lesson for most developing countries.

Antitrust regulation in Western Europe

It is well recognized in the world that antitrust legislation can limit the freedom of a licensor and licensee to accept terms which, without such legislation, they could agree to accept on an *inter pares* basis.

The roots of monopoly law lie in Europe. Laws against the abuse of monopoly power date back to mediaeval times. Statutory antitrust law has a long standing in the United States, but it has developed in the European countries only after the Second World War, when it was seen that restrictions on competition could have

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[2] See (4, pp. 122-159). A table of the countries that have concluded double taxation agreements can be found on pp. 138-139 of that book.

[3] Those countries include Argentina, Australia, Chile, France, Greece, Mexico, South Africa, Spain, Sweden, Switzerland and the United Kingdom; see (4, p. 160).

[4] Austria, Czechoslovakia, the German Democratic Republic, Hungary, Japan, Norway, Poland, the Union of Soviet Socialist Republics and Yugoslavia; see (4, p. 160) and (2, p. 19ff.).

harmful effects both nationally and internationally. Consequently, antitrust legislation was passed in most European countries: in France in 1945; in the Netherlands in 1956; in the Federal Republic of Germany in 1957; in Belgium in 1960; in the United Kingdom in 1948, 1956, 1965, 1968 and 1973; in Luxembourg in the 1970s; and in Austria, Ireland, the whole of Scandinavia, Spain and Yugoslavia.

Antitrust regulation is of great importance in free trading areas such as EEC and the European Free Trade Association (EFTA), for contractual restraints of competition may hamper the achievement of economic unity, one of the main goals of a common market.

In Western Europe the most important development by far in antitrust regulation has been the adoption by EEC of provisions to protect competition. These extend far beyond licensing, of course, and, up to the present, have been largely directed to buying and selling arrangements, agency relationships etc. Owing to the complexities of this particular area of commerce, which has absorbed the attention of the EEC Commission, the consideration of licence agreements had been largely deferred. Now, however, the Commission is examining the subject. Both the Court of Justice in Luxembourg and the Commission have in fact taken decisions on such agreements.

In short, the EEC Commission is now in the process of delineating more precisely what provisions can be included in licence agreements and what provisions are illegal. As a result, licensing practices in EEC will change considerably.

It is often pointed out that under Section 1 of the Sherman Antitrust Act, adopted in 1890 in the United States, any arrangement "in restraint of trade or commerce" is illegal. Since 1890, the vast superstructure of United States antitrust law has been built up on this modest concept. Similarly, according to Article 85 of the Treaty of Rome, practices likely to affect trade between member States and which have the object or effect of preventing, restraining or distorting competition are not permissible. The EEC Commission and the European Court of Justice are now in the process of interpreting this article.

It would, for instance, appear that the Commission is following specific United States judgements and making it clear that the same offences in the United States would be illegal in the European Community. An example is the relatively recent judgement in the United States that it is illegal for a licensee under a patent to agree not to attack its validity (6). There is now in principle a declaration by the Commission that this may be illegal in the Community.

The general rules of the Commission are that if a party is in doubt whether an agreement is contrary to the Treaty of Rome, the agreement can be submitted to the Commission for what amounts to an adjudication. This is referred to as "notifying" or "registering" the agreement. Then, in due course, the Commission will give a judgement; and, if it approves the agreement, it gives a "negative clearance", which means that the Commission finds the agreement acceptable, but its decision does not commit the European Court. In practice, the agreement is unlikely to reach the Court (it will not unless some special suit is brought), so that "negative clearance" is at present regarded as approval.

To avoid being deluged by the notification of agreements, and also to give priority to the consideration of types of agreements of much greater significance than licence agreements, the Commission issued an announcement on 24 December 1962, commonly referred to as the "Christmas Declaration", that certain kinds of

patent licences were not objectionable and need not be notified. This announcement was expressly stated to be only the Commission's view, which was not binding and might be changed, but it established a *status quo* that lasted for some years. Since 1962, however, the European Court has handed down several decisions that define further what is or is not permissible. Some of these decisions as well as certain decisions of the Commission may seem to be contrary to the Christmas Declaration. That is to say, the Commission is now refining the Christmas Declaration.

These decisions have caused European companies to re-examine their licence agreements; but there is still much doubt about what exactly the decisions mean (they all relate to specific cases and their generality is in doubt), so the situation is still fluid. As a consequence, the Commission has announced its intention of issuing a "block exemption" setting out the type of provisions that can be included in licence agreements without offense and without the need to notify. This list is now awaited, and various approaches have been made to the Commission to encourage it to extend the block exemption as widely as possible to assist negotiators to know how far they are entitled to proceed. It seems clear that clauses obliging the licensee to respect a patent will not be included. It is also certain that exclusive licences as such will not be included in the block exemption, though some types may be.

The block exemption, expected to be issued early in 1973, still has not been issued (as of July 1976). Until it is, not many licence agreements will be entered into. The delay is probably a measure of the difficulties the Commission is having in defining the matter. It seems clear that the block exemption will be based on the few existing decisions of the European Court and the Commission.

The Treaty of Rome, which went into effect on 1 January 1958, brought about far-reaching changes in the law governing licence agreements. While the legal systems of EEC member States had already been facing the problem of limiting the protection of industrial and commercial property rights and the protection of free competition in such a way as to safeguard the interests of both, another dimension has been added to this problem by the EEC law, namely, the harmonization of national legal and economic systems with the Treaty of Rome.

It is the industrial property rights that are broadly based on the so-called principle of territoriality on which the Treaty of Rome is having effect. In this regard the Treaty is not only affecting enterprises in the member countries but is also indirectly affecting the licensing practices of firms outside the Community, when such firms grant licences under industrial property rights to enterprises in the Community.

The Treaty does not contain any detailed rules on industrial and commercial property rights. The preparatory work for the enactment of a European patent and trade-mark law has advanced considerably, but it has not been completed. Moreover, it should be pointed out that the intent of a European patent law is not to replace the national patent laws, but to provide for the co-existence of the European and the national patent laws. It provides that the owners of protected rights may freely choose the law to be applied, a provision that suggests one way in which the conflict between the differing objectives of the patent legislation and the legislation against restraints of competition might be solved. Owing to the already mentioned principle of territoriality, which has fundamentally been preserved, the exhaustion of the patent right upon the first sale of a patented article does not affect parallel patents granted in other countries. Consequently, the holder of parallel patents is entitled to

proceed against any buyer of his product who exports this product to other countries where parallel patents exist.

The Treaty of Rome recognizes, as a matter of principle, the industrial property rights granted under the national legal systems by providing, in Article 222, that the Treaty does not affect the national provisions on the protection of property, including industrial property rights, and by providing, in Article 234, that the Treaty does not affect the continuation of agreements having been entered into between EEC member countries and other countries before the Treaty came into force. Article 36 is likewise based on the maintenance of industrial and commercial property, notwithstanding the general prohibition of import and export restrictions contained in Articles 30-34. Article 36 permits such restrictions if their purpose is to protect industrial and commercial property. But pursuant to Article 36, sentence 2, the restrictions resulting from industrial property rights may not be used as a means of arbitrary discrimination or as a concealed restriction on the trade between member countries.

Thus, industrial property rights are, on the one hand, generally recognized. On the other hand, pursuant to Article 5(2) the member countries are bound to abstain from any measures that are apt to jeopardize the realization of the Treaty's objectives. Pursuant to Article 3(f), one of these objectives is "the establishment of a system ensuring that competition shall not be distorted in the Common Market". Articles 85 and 86 specifically prohibit all practices restraining competition.

Approximately 3,500 licence agreements have been registered at the Commission's offices. The breakdown by subject is as follows (percentage):

Patents alone	27
Know-how alone	5
Trade marks alone	4
Patents and know-how	12
Patents and trade marks	2
Know-how and trade marks	35
Patents, trade marks and know-how	15
	100

This gives the following totals (percentage):

Know-how	67
Patents	56
Trade marks	56
Patents but not trade marks	39
Trade marks but not patents	39

The meaning of these figures is very difficult to assess, and in any case this particular collection of agreements may be no measure of licence agreements as a whole. Nevertheless, the importance of trade marks is clear (the identity of the totals for patents and trade marks is a peculiar coincidence), which may be evidence of the significant association between technology transfer and commercial considerations, not only in the self-evident respect but also in a direct trading sense. It is repeated, however, that this is a specially selected group of agreements and not too much should be concluded from it.

The Commission's office has so far rendered decisions in a few cases.

In the Announcement on Patent Licence Agreements of 24 December 1962, the Commission listed several contract stipulations which, in its opinion, should be excluded from the prohibition in Article 85(1).

A further clarification has been brought about by Regulation No. 67/67 on the application of Article 85(3) of the Treaty to specified categories of exclusive dealing agreements. Under this Regulation, the Commission, under certain conditions, generally exempts exclusive dealing agreements to which only two enterprises are parties. This exemption is inapplicable, however, if parallel imports are impeded, particularly where the contracting parties exercise industrial property rights in a way to prevent dealers or consumers from obtaining products covered by the contract, properly marked or marketed, in other parts of the Community, or from selling them in the territory covered by the agreement.

Notwithstanding this clarification, up to now four licence agreements have been brought before the European Court of Justice for a decision as to their compatibility with the Treaty. In the *Grundig Consten* case (7), appeal has been lodged against a decision of the Commission. The three other cases–*Parke, Davis* (8), *Sirena* v. *Eda* (9), and *Deutsche Grammophon* v. *Metro* (10)–were actions for injunction before national courts, which requested the European Court of Justice to make preliminary decisions on matters of Community law.

A new case is pending before the Court. The decision in that case, *Centrafarm* v. *Sterling Drug Inc.* (cases 15/74 and 16/74), will be of greatest importance for the development of patent and trade mark law within the Community (11).

The *Grundig Consten* case concerned the distribution system of one of the producers of electrical appliances in the Federal Republic of Germany, Grundig, whose sole importer for France, Consten, enjoyed absolute territorial protection. In a supplementary agreement, Consten was authorized to have the trade mark GINT (Grundig International) registered in France in its own name. All appliances made by Grundig bear this trade mark. Consten had agreed to retransfer the registered trade mark with all pertinent rights and duties to Grundig, or to abandon it as soon as it ceased to be the sole agent for Grundig.

The Commission held that the exclusive distributorship and the supplementary agreement on the registration and use of the trade mark GINT constituted a violation of Article 85(1) that could not be exempted under Article 85(3). The European Court of Justice upheld the decision of the Commission.

The decisive point for the Court was that Consten did not claim an industrial property right originally owned by it but one that it had acquired by way of agreement; the Court considered the use of such right for the purpose of obstructing parallel imports to be abusive. The Court has solved the conflict between the safeguarding of industrial property rights, on the one hand, and of the enforcement of the Community system of competition, on the other, by distinguishing between the existence of the industrial property right, which remains unaffected, and the exercise of such right, which may come under the rules of competition contained in the Treaty.

These principles have been confirmed by the European Court of Justice in its decision in the *Parke, Davis* case (8). The Court emphasized that the existence of a patent right was solely a matter governed by the national law of the respective

country, and that only the exercise of these rights might become subject to the Community law. The Court added that since:

> the rules to the protection of industrial property have not yet been rendered uniform within the framework of the Community, the national scope of industrial property protection and the differences between the laws in this matter are likely to create obstacles both to the free movement of patented products and to competition within the Common Market.[5]

In the *Sirena* case (9), the Court went further. As a matter of fact, some controversy exists as to the bearing of this decision, controversy that may be attributable to the special features of the case.

In this decision the Court emphasized, in referring to Article 36 of the Treaty of Rome and Regulation No. 67/67, that industrial property rights should not be abused in a way that tended to bring about an absolute territorial protection.

The Court further reasoned:

> The trade mark law as a legal institution cannot in itself meet the prerequisites of an agreement or a concerted practice in the meaning of Article 85(1). But the exercise of the rights thereunder may be subject to the prohibition contained in the relevant provisions of the Treaty as soon as it has been found that they are the object, means or consequence of a cartel agreement. If the right to use a certain trade mark is exercised in one or several member countries by means of transfers to enterprises, it must be examined, therefore, in any individual case whether such an exercise does or does not meet the prerequisites of a prohibition under Art. 85.
>
> This may particularly apply, where trade mark owners or any persons to whom they have transferred the right to use the trade mark enter into agreements which offer the possibility of preventing imports from other member countries. If the simultaneous transfer of national trade marks, which protect the same article, to several users effects the restoration of unsurmountable barriers between the member countries, this may be regarded as a practice which impairs the trade between member countries and interferes with the competition in the Common Market. (9)

In analogy to the preceding decisions, the European Court of Justice distinguished again between the existence and the exercise of a right, whereby the exercise may come into the scope of application of Article 85(1) as soon as it is the object, means or consequence of a cartel agreement. It remains unclear, however, whether, and on the basis of which facts, the Court assumed the existence of a cartel agreement. On the one hand, it has not been made quite clear whether the transfer of trade marks will be subject to the application of Article 85 only if they are a constituent part of a wider contract system, as in the *Grundig* case, or whether parallel agreements for the transfer of trade marks, which are concluded between several firms, are in themselves sufficient (12). In the *Sirena* case, it is questionable whether Sirena had actually claimed a contractually authorized use of the trade mark, or whether the respective trade marks had not meanwhile become the original property of Sirena after the contractually transferred trade mark had expired. It was from the latter point of view that the decision was criticized (13).

A later decision by the European Court of Justice rendered on 8 June 1971 (10) dealt with the right of distribution enjoyed by record manufacturers in the Federal Republic of Germany on the basis of their quasi-copyright pursuant to Section 85 of the Copyright Act of the Federal Republic of Germany.

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[5] See (8). The Federal Supreme Court of the Federal Republic of Germany followed this case in its decision in the *Voran* case, judgement of 29 February 1968, 49 BGHZ 331.

The Court did not discuss further the question whether Article 85(1) had been violated. It stated only that the exercise of an exclusive right of distribution might come under the prohibition promulgated in Article 85(1) whenever it proved to be the object, means, or consequence of a cartel agreement causing a division of the Common Market.

As regards Article 86, the Court repeated its point of view, formerly held in the *Parke, Davis* and *Sirena* cases, that the use of an exclusive right alone did not presume the existence of a market-dominating position. Nor did the difference between the fixed price and the price for the reimported product allow the inference of an abuse, although it might be an indication of such an abuse if the difference was great and could not otherwise be explained by reasons of fact. The Court stated also that it constituted a violation of the Treaty[6] if the owner of a copyright or of a related exclusive right tried to prevent the sale of goods on the domestic market that had, prior to that sale, been distributed by him or with his consent in another member country.

This decision has caused considerable concern. In fact, it was the first time the European Court of Justice decided that the exercise of an industrial property right could not only be limited by Articles 85 or 86, but that such restriction was to be derived from the general purposes of the Treaty of Rome. This development of the law was, however, to be expected after the Court had underlined the general purposes of the Community laws in its decision in the *Sirena* case, where it had also been rather doubtful whether the trade mark right was exercised on the basis of a cartel agreement.

Finally, the decisions of the Court as to the perceptibility of a restriction are also important for the assessment of licence agreements. The wording of Article 85(1) does not distinguish degrees of restriction of competition. However, in its decisions on exclusive dealing agreements, the Court emphasized that Article 85(1) was applicable only to perceptible restrictions.[7]

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[6] At this point the Court made reference to Art. 36 instead of Art. 86. Art. 36 has earlier been mentioned in the *Sirena* case.

[7] *Voelk* v. *Vervaecke* (case 5/69), *Official Gazette of the European Communities*, No. C 105 (14 August 1969); and *Cadillon* v. *Hoess* (case 1/71), *ibid.*, No. C 76 (27 July 1971), p. 9:

"... In order to fulfill the conditions of Art. 85 of the Treaty, an agreement first has to be likely to affect trade among the member countries adversely. This criterion is met if, on the basis of a whole set of objective legal or factual circumstances, it is foreseeable with sufficient probability that the agreement, either directly or indirectly, influences trade among the member countries actually or potentially in a manner detrimental to the achievement of the objective of a uniform interstate market.

"Furthermore, the prohibition laid down in Art. 85(1) is only applicable where the agreement has the purpose or the effect of preventing, restricting or distorting competition within the Common Market. In assessing whether these conditions are fulfilled, the factual framework within which the agreement had been concluded has to be considered. It is possible that an exclusive dealing agreement, even if absolute territorial protection is provided for, may have no adverse effects on the achievement of the objective of a uniform interstate market due to the *weak position* held by the parties on the market for the products concerned in the protected territory. This applies even more where such agreement prohibits neither parallel imports by third parties into the protected area nor the re-export of the products concerned by the licensee.

"It is, however, up to the national courts to examine whether these conditions are met in each single case.

"Should the agreement come under the prohibition laid down in Article 85(1), it would also have to be determined whether Regulation No. 67/67 of the Commission relating to group exemption may affect unnotified agreements of this kind."

This jurisdiction may also be extended to licence agreements and should apply analogously even where the exercise of an industrial property right is not restricted under Article 85 but by the general principles of the Treaty of Rome.

The attempt to draw conclusions from the decisions of the European Court of Justice is of doubtful value. The essential rules the Court is to follow are laid down in Articles 5, 36, 85 and 86, as well as the principle of preserving undistorted competition, none of which distinguishes between the various industrial property rights. In the decisive parts of its decisions, the Court does not refer to the trade mark, the patent, etc., but generally to industrial property rights. For this reason it may be assumed that the conclusions of the Court are applicable not only to the property right involved in the particular case in hand, but also to all industrial property rights.

It is noteworthy that all decisions distinguish between the existence of rights that are guaranteed and the exercise of rights that may be restricted. This formula seems convenient and convincing, but it conceals the problem. Distinguishing the concept of existence from that of exercise does not mean that the two terms are mutually exclusive. One concept can hardly be defined without referring to the other. A right whose existence is guaranteed but that cannot be exercised is not only largely useless in practice but also different in content.

After this review of the decisions by the European Court of Justice in this field, a few decisions rendered by the Commission shedding additional light on this difficult and controversial theme should be mentioned.

In *In re Burroughs-Delplanque* (14) and *In re Burroughs A.G. and Geha-Werke GmbH* (15), the Commission stated that an exclusive licence to manufacture might constitute a restraint of competition coming under the prohibition laid down in Article 85(1) of the Treaty of Rome. In the above-mentioned cases, however, the potential restraint of competition was not considered to be appreciable. Either licensee, the Commission stated, held only a small share of his home market, and the licence agreements concluded by Burroughs with EEC firms left both licensor and licensees free to sell the products throughout the Community. The other obligations accepted by the licensor and the licensees did not seem to imply restraints of competition.

In *In re Davidson Rubber Co.* (16) the Commission's decision concerned several patent and know-how licence agreements for the exclusive manufacture of seamless armrests and bolsters for motor cars. The Commission held that the agreements came under Article 85(1) of the Treaty of Rome because the licensor, by granting exclusive licences, was restricted from granting further licences and third parties would thereby be prevented from applying the process concerned within the Community. The Commission granted exemption, however, after the clauses requiring licensees in EEC countries not to export products manufactured under the Davidson process into other EEC countries had been deleted.

The Commission's decision in *In re Raymond and Co.* (17) concerned a licence granted by the subsidiary in the Federal Republic of Germany of the French company Raymond to the Japanese company Nagoya for the production in Japan of plastic fixtures used in the manufacture of cars under a process developed by Raymond. Nagoya is not allowed to export the products concerned, which are not standardized but are specifically developed for each model of cars, to EEC countries unless they are built into Japanese cars. In this case, the Commission considered that

competition within EEC was not affected, since it appeared unlikely that the fixtures supplied by Nagoya would be sold to EEC countries while the same products could be easily obtained direct from Raymond.

Government controls and regulation

Government controls are increasingly coming to restrict the conditions that can be permitted in licences. These conditions can sometimes differ if the two parties are nationals of the same country on the one hand, or nationals of different countries on the other.

Moreover, government restrictions differ in different countries, and to give any comprehensive account of them would need a considerable report for each country. However, it is probably true to say that the restrictions tend to fall into two categories: currency-control regulations and antitrust regulations, though in some countries this is not the correct term. In some countries, for balance-of-payment reasons, exchange-control regulations prevent the transfer of money to other countries without government approval, so that when a licence agreement with a foreign licensor involves sending money out of the country, government approval for the transfers may be necessary. Such controls were more critical immediately after the Second World War than now; and, as time has gone on, most developed countries have adopted an increasingly liberal approach. Indeed, in most of the major countries of Western Europe, currency controls now seem to have been abandoned altogether as regards royalty payments under licence agreements.

The situation tends to be considerably different when a licensee from a developing country is involved. There is usually a wide divergence between licensor and licensee in technological background and level of skills. The know-how element is often much broader in scope and often includes a wide range of technical services, such as detailed plant engineering; assistance in securing machinery; training of management and operational personnel; and much greater technological support, particularly in the early production stages. There are, of course, wide variations, ranging from turn-key projects to straight patent or trade mark licences with little or no know-how support; but, in many cases, there is a strong element of direct technical assistance over and above the technology and know-how directly involved. At the same time, licensees from developing countries lack knowledge of technological alternatives and the licensing mechanism and are thus in a weak bargaining position. As a result, they often pay a high price for the technology they acquire. They accept some harsh contractual provisions operating to the advantage of the licensor, such as restrictions on exports and even on production; restraints in acquisition of other processes or techniques; tie-in clauses for supply of machinery, raw materials and components for sale; grant-back provisions, and unduly high royalty and other payments. Many such provisions not only militate against the licensees, but also adversely affect the national economy over a period of time.

Apart from the problems posed by specific licence agreements, the unrestricted inflow of technology tends to perpetuate dependence not only on imported techniques in general, but also on a wide range of allied technical services. Licensees from developing countries tend to be much more dependent on their licensors even with respect to functions and services that can be indigenously developed with comparatively little effort. They seek to secure foreign techniques, including use of

brand names, in almost every field, to the detriment of domestic technological development, both in the initial and in subsequent phases of product development. While there is an essential need for a flow of technology to developing countries, there is a greatly increased awareness in many of these countries of the problems arising from unrestricted imports of foreign technology and techniques, from the type and nature of the technology acquired and from the terms and conditions of such acquisition.

Many developing countries, therefore, are beginning to regulate, to varying degrees, the inflow of technology. Such regulation is still new in concept, and it has taken different forms–national legislation, as in Argentina and Mexico; regional measures, such as those adopted by the Andean Group countries;[8] and considerable control through the executive machinery alone, as in India. In view of the wide differences in economic conditions and in the level and stage of industrial growth, there continues to be wide divergence in approach. There are still many developing countries where little or no regulation of acquisition of technology exists. Yet, the trend towards a degree of control is clearly discernible in most countries that have reached the intermediate stages of industrial development, though the pattern and details of such regulation may vary.

France

An interesting situation exists in France as a consequence of Decree No. 67-82 of 27 January 1967 (modified in 1970). Until 1967, the payment of royalties to companies abroad was subject to currency controls of the type referred to earlier. In December 1966, however, these currency controls were liberalized, and the new Decree was introduced in January 1967 to provide, as an alternative, a technical judgement by the Government.

Subsequently this Decree was replaced in 1970 by a simpler decree, but there is an evident continuity of intent between the two.

The 1967 Decree provided in brief for the following:

(a) Any contract between a French party and a foreign party relating to the assignment of licensing to the French party of "industrial property rights . . . technical assistance . . . know-how and engineering" had to be filed with the Ministry of Industry at least two months before it was to come into effect;

(b) The Ministry would examine the contract to determine whether technology available in France had been taken into consideration;

(c) Within 40 days the Ministry was to give its views on the contract;

(d) Yearly statements of the expenditures or receipts under the contract had to be submitted to the Ministry.

Regulations issued on 6 March 1967 set out the precise procedure and stipulated that particulars of modifications made to the contract as a result of the views of the Ministry had to be filed with the authorities.

The Decree was of interest in that the Ministry of Industry did not approve or disapprove a licence, but just gave an expression of views and discussed the matter

[8] Bolivia, Colombia, Ecuador, Peru and Venezuela.

with the French party. As a matter of fact, the French party would have been entitled to go ahead with the licence regardless of the opinion of the Ministry, but the opinion was assumed to be an approval or disapproval. Moreover, the opinion of the Ministry of Industry was to be conveyed to the Ministry of Economy and Finance, and fiscal problems could have been encountered in paying the royalty if the authorities considered the payment inappropriate.

However, difficulties were apparently encountered in putting this Decree into effect, and it was replaced by Decree No. 70-441 of 26 May 1970 (and Regulations of the same date), which provided in brief that:

(a) Any contract between a French party and a foreign party relating to the assignment of licensing in either direction of "industrial property rights . . . technical assistance . . . know-how and engineering" must be reported to the Ministry of Industrial and Scientific Development within one month of the signature of the contract;

(b) Yearly statements of the expenditures or receipts under the contract must be submitted to the Ministry.

It will be seen that this new Decree did not specify that any positive approval was to be given, but here again it would appear that the matter is referred to the Ministry of Economy and Finance, so that fiscal problems may be encountered.

These Decrees seem to provide for something less than government approval, and the 1970 Decree may be thought to amount to little more than a notification for record purposes. There is, nevertheless, an implication that national interest is involved. Very little information appears to be available on the effect of these Decrees, but they do not seem to have interfered materially with licences that have the logic and justification to be expected of responsible industry. It is interesting to note, however, that certain of the developing countries have paid attention to Decree No. 67-82 in working out their own systems of controlling licences from abroad.

In France, as in other EEC countries, the regulation of licensing has assumed new significance in the context of Articles 85 and 86 of the Treaty of Rome, which prohibit *(a)* the prevention or restriction of commerce and competition within the EEC countries, and *(b)* improper exploitation by any enterprise of a "dominant position" within EEC or a substantial part of it. Even before 1958, technology agreements in France were screened by the Commission technique des ententes in terms of the applicability of various laws. Brochon has summarized these regulatory aspects as prohibiting *(a)* restrictions on free competition; *(b)* restrictions on decrease of prices or promotion of artificial price increases; *(c)* refusal to sell under normal commercial conditions; and *(d)* compulsory purchase by licensees of other products or services (18). While these prohibitions would not always be applicable to patent holders, the pattern is similar in principle to some of the antitrust provisions in the United States. It is also significant that a European system of patents has been agreed upon. On 5 October 1973, a European Patent Convention was signed that permits a patent granted in one signatory State to be valid in all the others. The following States have adhered to this Convention: Austria, Belgium, Denmark, France, the Federal Republic of Germany, Greece, Ireland, Italy, Liechtenstein, Luxembourg, Monaco, Netherlands, Norway, Sweden, Switzerland and the United Kingdom of Great Britain and Northern Ireland. Ratification should be completed by 1977. Thus, broadened patenting facilities in Europe are part of the movement towards greater freedom of trade within EEC.

On the whole, France still continues to be a net importer of technology, with technology sales of about $155 million compared with acquisition of technology worth $286 million, mainly from the United States. With the advent of EEC, the interpretation of Articles 85 and 86 overrides national business considerations, and here, also, a substantial body of case law is being built up, largely through decisions of the Commission. The Articles principally militate against any arrangements that seek to impose restraints in territorial operations within EEC or the use of restrictive or unfair practices by dominant companies. Thus, attempts to restrict sales by particular licensees to one or another area of EEC were deemed to be a violation of the Treaty of Rome (16). In *Grundig Consten* (7), the Commission considered the exclusive sales agreement given by Grundig to Consten for its products in the territory of France a violation of Article 85.

A violation of Article 86 entails three prerequisites, namely, "that the undertaking or undertakings must be in a dominant position and that such dominant position must be improperly exploited and that trade between member states must be prejudiced" (18). If a dominant position cannot be established, there is no violation. Similarly, if there is no restriction in trade or movement, the prohibitory article is not applicable. So far, few cases have come up before the Commission or, subsequently, before the national courts, but the trend is clearly being established that licence agreements should not result in restraints on trade within the EEC countries or in the use of unfair or restrictive practices.

Japan

One of the major forces accounting for the rapid growth of Japan's economy has been the vigorous introduction of foreign technology. The cycle of economic growth has had a definite pattern, the major components of which include the following: *(a)* introduction of new technology and new investment; *(b)* increase in demand; *(c)* expansion of production facilities; *(d)* reduction in manufacturing cost, and hence greater international competitive power; *(e)* increase in exports; *(f)* increase in foreign-exchange earnings; and *(g)* introduction of more new technology and more investments.

The Japanese Government has encouraged the introduction of new technology and processes from abroad. The Foreign Investment Law, for example, was originally enacted to encourage the introduction of both foreign technology and capital, although later it appeared to be a restrictive law. Industry has also welcomed the introduction of foreign technology.

Private firms and the Government have adopted markedly different standards for evaluating foreign technology, however. The primary objective of private firms is the pursuit of profits. Therefore, they evaluate foreign technology on the basis of economic feasibility. In contrast, the Government evaluates it on the basis of benefit to the national economy. For example, when a Japanese company applies to the Ministry of International Trade and Industry (MITI) for approval of a licence agreement, MITI determines whether such technology would benefit the economy. MITI bases its review on such criteria as whether introduction of the technology would generate more competition in the given field and thus result in lower prices for consumers. Basically, the Government's criterion is whether such action would conform to national goals. National goals may change, of course, from one era to another.

At present, the Government is discouraging industrial processes that require large amounts of energy, while it is encouraging industries that consume less energy and produce value-added or more sophisticated goods. It is also discouraging activities that cause pollution unless adequate measures for pollution control and abatement are adopted.

It is worthy of special mention here that there are no published government guidelines for screening applications for licences. The basic guideline is: would the licence bring benefits to the economy and to the population?

The Government has invoked special tax measures to encourage new industries and promote the introduction of new technology needed by Japan. At the same time, the Government has instituted tariffs and other barriers to foster the growth of infant industries in Japan.

Regulation of technology inflow has been very pronounced, in that all technology agreements, including extensions and amendments, require, in principle, the approval of the Government. While such approval is accorded automatically by the Bank of Japan where payments of up to $50,000 are involved, other cases are referred to MITI, which is required to consult other concerned agencies and give its approval or disapproval within 30 days. Up to July 1973, all proposals relating to seven defined sectors required a case-by-case analysis, but now such examination is required only for proposals relating to computer technology.

The procedure for screening applications by the Japanese Government is that copies of applications are filed with the Ministries of Finance, Welfare, Agriculture and Forestry, and others as may be required. MITI circulates copies of the applications to the ministries concerned for their examination. The Ministry of Finance studies the applications from the standpoint of Japan's balance of payments and the position of the reserves of foreign exchange. The Ministry of Welfare studies them from the viewpoint of national health. The Ministry of Agriculture and Forestry evaluates any impact the technology may have on farmers etc. After the applications have been reviewed by the various ministries concerned, they are forwarded to the Foreign Investment Deliberation Council for final action (approval or disapproval).

One of the important points the Government considers in evaluating applications to licence new technology in recent years is the emission of pollutants. In this area, both the Central Government and local governments have enacted relatively strict laws and regulations. The Japanese consider their pollution-control laws the strictest in the world. Among the paramount factors behind the enactment of such legislation is the exceptionally high density of Japan's population and industrial sites.

The so-called Plant Location Law, which became effective in April 1974, is a good example. This Law stipulates that of the total area of an industrial site only a specified percentage can be given over to production facilities. For example, in the refinery industry the figure is only 10 per cent; in the petrochemical industry it is 15 per cent. The most generous figure is the 40 per cent for the light-machinery and precision-machinery industries.

This Law will have a heavy impact on the selection of technology to be licensed. For example, plants to be constructed will, of necessity, come to be much more expensive in view of the exceptionally high cost of land in Japan.

During the decades following the Second World War, Japan imported Western technology very heavily. From 1950 to 1970, about 14,000 licence agreements were entered into, of which nearly 60 per cent were with United States companies and

only about 5 per cent were for trade marks. In recent years, Japan has been exporting technology in various fields, but net technology imports are still much higher and amounted to $433 million in 1970 compared with technology exports of approximately $60 million. The extraordinary success of Japan's policy can be attributed to the very strong technological and industrial base the country already possessed and to the Government's selective imports of technology, which have stimulated Japanese industry. The very close co-ordination between the Japanese Government and industry has also ensured that the Government's policy of regulation functions in the best interest of Japanese industry.

An important aspect of licensing in Japan is that licence agreements must also be reported to the Fair Trade Commission, which has been set up under the anti-monopoly legislation. Such agreements require a negative clearance; that is, they should not contain provisions that constitute unreasonable restraints or unfair business practices as defined in the legislation. The Commission has prescribed certain guidelines prohibiting restriction on exports, restrictions on acquisition of competitive techniques, tie-in restrictions and the like. Grant-backs must be non-exclusive and reciprocal.

In recent times the Commission has increased its intervention in private industrial activities. A most recent example is its interrogation of oil companies, chemical companies and trading firms. In the past, licence agreements had been filed with the Commission, and the Commission rarely questioned or requested modification of the terms of an agreement It appears, however, that the Commission will be more strict in its evaluation of licensing terms hereafter. This stricter attitude is expected to affect the evaluation of technology to be licensed.

Thus, protection to Japanese licensees is not only accorded through the requirement of government approval but also through the statutory provisions of the Commission, as clarified in its guidelines.

Mexico

The experience of Mexico illustrates how national economic objectives influence law dealing with technology transfer. Several key principles may be noted in this connexion.

A first principle has to do with the regulatory role of the Government in this area. Since the formulation of foreign policy is one of the important functions of government and since economic and political relations with foreign countries cannot be dealt with separately, the Government clearly needs to establish norms regulating technological transactions with foreign suppliers.

A second principle refers to safeguarding national, economic and technological autonomy. The basic criteria for determining the acceptance or refusal of technology contracts must take into account the national objectives and legislative norms and procedures existing in the country.

A third principle is that the international economic policy of a country should support national economic objectives.

Law on the transfer of technology

The Mexican Law on the Registration of the Transfer of Technology and the Use and Exploitation of Patents and Trade Marks, enacted in December 1972, established

a National Registry of Technology Transfer with the power to accept or reject, after evaluation, contractual transactions relating to technology transfer taking place in Mexico.

In the implementation of the Law, an effort has been made to introduce a consistent criterion for evaluating contracts and to apply it with a high degree of flexibility. Although flexibility is important, the Mexican authorities have tried to be selective and careful in assessing the worth of a particular technology in terms of its input and its value to Mexico. Emphasis is placed on evaluating the effect that a technology contract can have on: *(a)* the balance of payments; *(b)* the creation of jobs; and *(c)* the improvement of national technological capabilities.

One of the specific objectives of the Law is to assist the recipient companies in selecting and negotiating foreign proposals. As mentioned above, the Mexican Law cannot be seen as a piece of legislation that stands alone, since it forms part of a broader policy of industrial development and national growth.

The Law was drafted taking into account legislation and government administrative procedures in the Andean Group countries (Decision 24), Argentina and Japan. However, the scope and objectives of the Mexican Law differ from those of other national laws in specific areas. For example, in contrast to some of the legal enactments in South America, particularly in the Andean Group, Argentina and Brazil, the Mexican Law does not identify foreign-exchange control as the central issue. Mexico has no foreign-exchange regulations and has maintained a consistent policy in this area for over 30 years. In contrast to Argentine law, the Mexican legislation covers the registration of agreements between individuals or companies of Mexican nationality and agencies or subsidiaries of foreign companies established in Mexico.

Another distinctive feature is that foreign-based licensors have the right to request the registration of contracts to which they are parties, although they are not, as national enterprises are, obliged by law to do so. To clarify the Mexican Law, the relevant Articles will be discussed in some detail.

Article 2 provides for the compulsory registration of all existing acts, agreements or contracts, concerned with:

Right to use or exploit trade marks
Right to use or exploit patents
Supply of technical expertise such as plans, diagrams, operating manuals or training of personnel
Supply of basic or detailed engineering
Technical assistance of any kind
Services for the administration or operation of business enterprises

Article 9 exempts certain contracts from the requirement of registration. These are acts, agreements or contracts relating to:

Foreign technicians for the installation of factories
Designs, catalogues, or general assistance acquired with machinery and equipment
Assistance required for repairs or emergencies
Technical training provided by schools or by companies for their workers
The operations of border assembly plants that are governed by legal provisions applicable to them

One of the most important articles, however, is Article 7, which contains 14 clauses that deal with, among others, the type of restrictive practices that must be eliminated from contracts before they can be registered. Eight of these clauses can be handled on a discretionary basis by the Mexican authorities. Each clause will be discussed below in terms of the general criteria for its application.

Article 7, clause I

Clause I prohibits the registration of contracts if the object of the contract is the transfer of technology that is "freely available in the country", provided that the same technology is involved.

This clause is interpreted to mean that a contract cannot be accepted when:

(a) The object of the contract covers exclusively the exploitation of a patent that is no longer valid in the country;

(b) It involves technical know-how in the public domain;

(c) It covers the continuing supply of technical services that the recipient company could perform without additional cost;

(d) It covers foreign technical know-how that a local research institute is able to provide.

These and other considerations apply when the technology "freely available in the country" is substantially similar to the one under consideration.

Article 7, clause II

Clause II prohibits the registration of contracts that set a price out of proportion to the value of the technology acquired or impose an excessive burden on Mexico's economy.

It is not possible to establish general rules concerning an adequate level of payments. What is important is to conduct a careful techno-economic evaluation of each case to determine whether the payments involved do, in fact, relate to the services and knowledge to be provided. The base and formula for calculating royalty payments should be clearly specified either in the contract or separately.

The contract should clearly specify that taxes due on royalties are the responsibility of the licensor.

A differentiation is made between payments involving know-how fees and continuing royalties. Contrary to what is followed in other countries, royalty limits on various sectors have not been established in Mexico.

To determine accurately the total flow of payments involved, the following points are considered:

(a) The manner in which the payments are to be effected;

(b) Projected volume of sales of production during the period of the agreement;

(c) The duration of the contract;

(d) The specified dates when payments should be made; special attention should be given to a scheduled programme for implementing an industrial project.

In practice, the various formulae covering technology payments change considerably from case to case. In this context, some reference points for

comparison have been established on a sector-by-sector basis. Among others the following indices are considered useful:

$$(a)\ \frac{\text{Royalties on products covered by the contract}}{\text{Total sales of the recipient company}}$$

$$(b)\ \frac{\text{Royalties on products covered by the contract}}{\text{Total sales of products covered by the contract}}$$

$$(c)\ \frac{\text{Royalties on products covered by the contract}}{\text{Net income from products covered by the contract}}$$

$$(d)\ \frac{\text{Total payments involved (royalties and various fees)}}{\text{Total investment in machinery and equipment}}$$

These reference indices are found to be useful in determining to what extent the payments involved affect the manufacturing cost and the financial situation of the recipient company.

Two examples of methods of evaluating technology payments are given below.

Example 1. Among the basic criteria for evaluating the adequacy of royalties in a licensing agreement is to regard the royalties as the licensor's share of the recipient company's profits.

Basic elements to be considered:

R =	Royalty	(%)
S =	Net sales value	($)
Y =	Licensee's profit on sales	(%)
P =	Licensee's profit	($)
X =	Licensor's profit	($)
Z =	Licensor's share of licensee's profit	(%)

Formulae:

$$1.\ Y = \frac{P}{S} \times 100 \qquad P = \frac{Y \times S}{100}$$

$$2.\ X = \frac{R \times S}{100} \qquad R = \frac{X}{S} \times 100$$

$$3.\ Z = \frac{R}{Y} \times 100 \qquad R = \frac{Y \times Z}{100}$$

Basic data on a foreign proposal are given as follows:

(a) The licence under consideration will enable the licensee to reach yearly sales of $750,000;

(b) The licensor estimates that in the manufacture of this product the licensee can generate a 15% profit on sales;

(c) The licensor requests a royalty fee of 5% on the net sales value.

Calculation:

S = \$750,000
Y = 15%
R = 5%

The first step is to determine the amount of the recipient company's profits.

$$P = \frac{Y \times S}{100} = \frac{15 \times 750{,}000}{100} = \$112{,}500$$

The second step is to determine the amount of the licensor's profit.

$$X = \frac{R \times S}{100} = \frac{5 \times 750{,}000}{100} = \$37{,}500$$

The third step is to determine the licensor's share of the licensee's profits.

$$Z = \frac{R}{Y} \times 100 = \frac{5}{15} \times 100 = 33.3\%$$

Evaluation:

If on the basis of a careful techno-economic evaluation that takes into consideration, among other things, the nature of the technology involved, the length of time in which it can be assimilated by the recipient firm, and the position the firm enjoys in the market, the government agency concludes that the licensor's share of the licensee's profit should not exceed 20%, the royalty will be recalculated as follows:

$$R = \frac{Y \times Z}{100} = \frac{15 \times 20}{100} = 3\%$$

The effect of reducing the royalty rate from 5 to 3% will be the following:

The licensor's profit is:

$$X = \frac{R \times S}{100} = \frac{3 \times 750{,}000}{100} = \$22{,}500$$

Accordingly, the licensee's profit on sales is:

$$P = 112{,}500 + 15{,}000 = 127{,}500$$

thus

$$Y = \frac{P}{S} \times 100 = \frac{127{,}500}{750{,}000} \times 100 = 17\%$$

As a result of this modification, the licensor's approximate share of the licensee's profits will be:

$$Z = \frac{R}{Y} \times 100 = \frac{3}{17} \times 100 = 17.6\%$$

The net result of the Government's intervention is as follows:

	Original foreign proposal	*Conditions acceptable to the Government*	*Changes by year (+ or −)*
S	$750,000	$750,000	none
P	$112,500	$127,500	+ $15,000
Y	15.0%	17.0%	+ 2.0%
X	$ 37,500	$ 22,500	$15,000
Z	33.3%	17.6%	− 15.7%
R	5.0%	3.0%	− 2.0%

An important point for the Government and the recipient company to keep in mind is that the total amount of royalty will be affected by the duration of the agreement. Therefore, it is advisable to establish guidelines defining the permissible duration of agreements for various sectors of industry. The most common period in which royalty payments are required is from 5 to 10 years, depending on the degree of sophistication and newness of the technology involved.

Example 2. In some cases royalties may be calculated on the basis of net present value (NPV). This method is used for converting continuing royalties into paid-up royalties and vice versa.

NPV can be determined by using the following compound interest formula:

$$R = R_0 \left(1 + \frac{r}{100}\right)^n$$

where

R = royalty payment made in n-th year
R_0 = NPV of future royalty payment
r = discount rate
n = year from "zero-year" on which payment is received

The following is the sales forecast and liability for royalties in a six-year contract at 3% royalty on sales (thousand dollars):

	1976	*1977*	*1978*	*1979*	*1980*	*1981*
Sales value	100	150	200	250	250	250
Royalty payments (*R*)	3.0	4.5	6.0	7.5	7.5	7.5

The 1976 NPV for each payment at a 10% ($r = 10$) discount factor is:

	1976	*1977*	*1978*	*1979*	*1980*	*1981*
NPV (thousand dollars)	3.0	3.72	4.5	5.1	4.15	4.35

The "paid-up" assessment of royalty, in terms of 1976 value, is thus $25,320 against the undiscounted payment of $36,000.

The NPV assessment method can be used to reverse the process, that is, to obtain the term-royalty equivalent of a fixed-fee.

The applicable formula would be:

$$R = R_0 (1 + \frac{K}{100})^n$$

where

R = undiscounted total royalty payment over duration of contract = St (S = aggregate sales value over contract period of n years, t = average royalty rate (to be determined))

R_0 = paid-up fee, fixed fee etc.

K = discount rate (10 if rate is 10%)

n = term of agreement, years

Thus, if $25,320 is the fixed fee on a six-year contract where aggregate sales value is $1,200,000 and $K = 10\%$ (discount factor), the formula would be re-expressed by:

$$(1{,}200{,}000)\,(t) = 25{,}320\,(1 + \frac{10}{100})^6,$$

in which case

$t = 3.73\%$ = average royalty rate

It is important to note that in the reversing process t does not equal 3% because t here is an average royalty rate and assumes that royalty income will be (or is) the same in every year of the contract, i.e. a plant operated to capacity, common in the process industries.

The NPV value of a licence fee can then be gauged against the licensee's investment, licensee's sales over duration of agreement etc. as is currently being done with undiscounted royalties.

As a rule, provisions in contracts for minimum royalties are not accepted. For reasons beyond the control of the recipient company, such as market demand, the licensee may be put in an unfavourable position if he has to meet a minimum royalty, particularly when new products are involved or when the sector of industry is highly competitive and dynamic. However, if the foreign licensor insists on a minimum royalty, the Mexican authorities would then request the incorporation of a maximum royalty fee.

A review of many contracts showed that only a few contained provisions for minimum royalties.

To determine whether the payments involved constitute an excessive burden on the economy, it is necessary to examine to what extent the total flow of payments (both explicit and implicit) may be detrimental to the country. Explicit payments are those that pertain to royalties and fees specified in the contract. Implicit payments are those that result, among other things, from tie-in clauses that make

possible *(a)* over-pricing of raw materials, parts, equipment etc. obtained from the licensor; and *(b)* underselling of products exported through the licensor.

Although it is difficult to define what should be considered a negative effect on the economy, and technical support from various agencies is needed to do so, the registrar can at least examine some of the most obvious implications for the economy of contractual arrangements with foreign companies. In this context it is important to determine *(a)* the industrial sector to which the recipient company belongs; *(b)* the effect of payments for technology on the company; *(c)* the effect of the payments on the country's balance of payments; and *(d)* the effect of the payments on the cost of the goods and services produced and the general effect on the consumer sector.

Many other aspects have to be studied on a sector-by-sector basis and at the macroeconomic level to define appropriate policies to reduce technology payments that may have a negative effect on the country's economv.

It should be mentioned that clause II is closely related to clauses I, IV, VII and XIII of Article 7.

It is not possible, within the scope of this study, to discuss in full the internal criteria for applying clause II of Article 7; nevertheless, in addition to the general criteria mentioned above, each contract is evaluated from the legal, technical and economic points of view, and specific guidelines have been developed for the application of clause II in the areas described below.

Use of trade marks. A deliberate effort is being made gradually to reduce the use of foreign trade marks in the domestic market particularly when *(a)* they are not yet established in Mexico and *(b)* their effect on the sale of products is of minor significance owing to the type of products or services involved. However, the use of new foreign trade marks may be authorized *(a)* when they are considered important for the export of products manufactured under licence and *(b)* when they bring along recognized technical prestige and are required in a particular market situation. At the same time the creation and development of Mexican-owned trade marks are being promoted in order to identify the products as Mexican, both domestically and internationally.

When the licensor does not participate in the capital of the recipient company, payments for the use of trade marks are maintained in the range of 1 per cent on sales. No payments for the use of a trade mark are authorized when the licensee is a wholly owned subsidiary of the licensor.

The right to use patented inventions. The law on industrial property[9] of Mexico considers three kinds of patents subject to regulation by the registry: patents on inventions, patents on improvements and patents on industrial models or designs. The duration of patents on inventions and improvements is 15 years, on models and industrial designs, 10 years. These provisions, as well as others relating to the validity, exploitation and termination of patents, are carefully appraised by the Registry.

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[9] A new law on inventions and trade marks enlarging the sphere of competence of the National Registry of Technology Transfer came into force in 1976.

In connexion with contracts that cover the use of patents, the following points should be noted:

(a) When a patent has been requested but not yet granted by the industrial property office, any payment for this concept will be conditional on the granting of this patent;

(b) When the contract covers payments for the right to use several patents, it is important to determine the duration of all of them and to differentiate the so-called basic or peripheral patents;

(c) The Registry will insist that any possible infringement on licensor patent rights by a third party shall be the sole responsibility of the licensor;

(d) Contractual provisions limiting the field of use of a patent in an unjustified manner cannot be accepted;

(e) The licensor will be responsible for defraying all expenses related to the registration and maintenance of its patents in Mexico.

It is also important to determine whether the patented know-how is being used in the manufacturing process, and to determine the degree of exploitation of the patents involved in the territory of the contract.

The supply of technical assistance. Payments for technical assistance normally covered through fees for know-how should be examined closely and a differentiation made between lump-sum payments and those for the continuing supply of technical assistance over the period of the agreement.

In connexion with the question of know-how payments, the following points should be noted:

(a) When the object of the contract covers technical know-how that the licensee could assimilate direct–formulations, drawings, specifications etc.–payments on a continuous basis are not acceptable in principle;

(b) Concerning the know-how incorporated in drawings, formulae and/or technical know-how, no limitations other than those pertaining to confidentiality are acceptable;

(c) The Registry will not accept any restriction at the end of the agreement concerning the use of non-patented know-how.

Basic and detailed engineering. The supply of engineering services depends on the technical capability of the licensor. In practice, basic and detailed engineering are obtained from different sources; and it is, therefore, important to define the degree of responsibility of all parties involved.

A very important aspect concerning the supply of engineering services relates to the type and scope of guaranties required by the recipient company. When the licensor is responsible for supplying basic engineering and process technology, the licensee should obtain specific guaranties pertaining to volume of production, yield and quality of product. The amount of payments for engineering services should be compared with alternative offers of substantially the same services.

Finally, it is essential that contracts covering the supply of basic and/or detailed engineering should clearly specify the type and scope of these services and the manner in which the corresponding payments should be effected.

Continuing technical assistance. For practical purposes technical assistance for which payments are made can be classified as follows:

Pre-operational phase
- Pre-investment studies
- Purchase of equipment
- Erection and installation of plants
- Plant start-up
- Training of technical personnel

Operational phase
- Purchase of spares, raw materials, parts etc.
- Quality control
- Operation of the plant, including maintenance and repair, production efficiency
- Technical services to clients
- Technical improvements of processes and products
- Training of technicians in licensor's or licensee's plant

The following considerations are taken into account:

(a) The contract should specify clearly and separately the various services involved and the payments for them;

(b) The time required to furnish the various services efficiently in the pre-operational phase should be determined:

(c) The scope of technical assistance to be obtained in the operational phase should be defined;

(d) The relationship between the kind of assistance the licensor is to supply and the complexity of the manufacturing process in its various phases should be determined;

(e) The degree of technical change in the sector of industry in question should be determined;

(f) The technical capability of the licensee should be ascertained.

Managerial assistance. The kind and scope of managerial services will depend on the functions to be covered. These services are obtained for a limited period and cover, among others, the following:

- Planning and programming
- Research and development
- Inventory control and accounting
- Financing and purchasing
- Promotion and marketing

Managerial or administrative services have to be evaluated in terms of the sector in which they are to be applied and the type and scope of the requirements of the recipient party.

In this context, the following points are considered:

(a) The services involved should be defined;

(b) Training programmes should be provided so that the licensee's staff can gradually assume various functions;

(c) Payments for the services should be viewed in relation to the economic benefits to the recipient company;

(d) The responsibility and functions of the licensor should be clearly delineated;

(e) Managerial assistance in the area of marketing, in principle, is not acceptable when the recipient company has been established for the sole purpose of manufacturing and selling intermediate products.

Article 7, clause III

Clause III prohibits the registration of contracts when they permit the licensor to regulate or interfere with the management of the licensee.

In connexion with this clause, a contract cannot be accepted when:

(a) The object of the contract covers the use of patents, trade marks and various forms of technical know-how and through this contract the licensor acquires a decision-making position in the business;

(b) The licensor acquires the right to decide in areas that go beyond the object of the contract.

A contract can be accepted when:

(a) The sole purpose of the contract is to provide administrative and managerial assistance;

(b) The licensor's technical personnel will participate in managerial activities for a limited period, provided that these services are deemed essential for the efficient functioning of the licensee's enterprise;

(c) Trade marks are involved and managerial assistance is provided to maintain adequate quality standards;

(d) It establishes the right of the licensor to inspect the books of the licensee with regard to continuing royalty payments.

Article 7, clause IV

Clause IV prohibits the registration of contracts that oblige the licensee to grant back to the licensor the patents, trade marks, innovations or improvements he has made under the contract.

In connexion with this clause, a contract cannot be accepted when:

(a) It establishes the obligation to assign the property of trade marks or patents developed by the licensee;

(b) It obligates the licensee to assign to the licensor the licensee's own trade marks when the contract terminates;

(c) The exchange of information on improvements or innovations developed by either party is not conducted on a reciprocal basis with regard to the territory, degree of exclusivity and remuneration.

Article 7, clause V

Clause V prohibits the registration of contracts that limit the licensee's research and development.

In connexion with this clause, a contract cannot be accepted when it:

(a) Limits or prohibits the licensee's right to undertake research and development concerning new products, processes, equipment etc. or to improve the products or process licensed;

(b) Limits, without justification, the incorporation of said improvements into the licensed products;

(c) Limits, without reason, the incorporation of improvements obtained from a third party;

(d) Limits, without justification, the field of use of the patented information;

(e) Prohibits the recipient company from undertaking research and development once the contract has ended;

(f) Obliges the licensee to return drawings, formulae, operating manuals etc. when the contract terminates.

Article 7, clause VI

Clause VI prohibits the registration of contracts that oblige the licensee to purchase equipment, tools, parts or raw materials from a particular supplier.

Under this clause, a contract cannot be accepted when the licensee is forced to acquire only from the licensor or a specific supplier parts, spares, raw materials etc. that are available from international sources on better terms.

Article 7, clause VII

Clause VII prohibits the registration of contracts that prohibit or restrict the export of goods or services by the licensee in a way contrary to Mexico's interest.

In connexion with this clause, a contract cannot be accepted when it:

(a) Prohibits the licensee from exporting;

(b) Obliges the licensee to export to certain geographical areas where the licensor has not granted exclusive licensee rights to third companies;

(c) Establishes a ceiling on the volume of exports;

(d) Obliges the licensee to export only through the licensor, to the detriment of the licensee's successful market penetration in third countries;

(e) Obliges the licensee to pay a higher royalty on exports.

A contract may be accepted when it establishes certain limitations for exports to areas where:

(a) The licensor has previously granted exclusive rights under a patent;

(b) The licensor is not authorized by legislation or regulation in his own country to export directly or indirectly.

Article 7, clause VIII

Clause VIII prohibits the registration of contracts that do not permit the use of complementary technology.

In connexion with this clause, a contract cannot be accepted when it:

(a) Prohibits access to other sources of complementary technology that could enable the licensee to obtain higher yields, better quality of products or reduced manufacturing costs;

(b) Prohibits the manufacture of products that could expand or complement the licensee's production line.

Article 7, clause IX

Clause IX prohibits the registration of contracts that require the licensee to sell the goods he produces to the licensor only.

In connexion with this clause, a contract cannot be accepted when it:

(a) Obliges the licensee to sell exclusively to the technology supplier all the products manufactured under the contract at a price fixed by the licensor;

(b) The obligation to sell all or part of its production under conditions unfavourable to the licensee. To determine when the obligation to sell to the licensor may be acceptable to the Registry, each case has to be examined on its merits.

Article 7, clause X

Clause X prohibits the registration of contracts that obligate the licensee to employ permanently personnel appointed by the licensor.

In connexion with this clause, a contract cannot be accepted when the licensee is obligated during the period of the agreement or for an excessive period to employ personnel appointed by the supplier company. Under certain conditions the licensor's technical personnel can be authorized to work with the recipient company, provided that the licensee is in a position to decide the conditions and the duration of their appointment.

Article 7, clause XI

Clause XI prohibits the registration of contracts that limit the volume of production or impose sale or resale prices on goods the licensor produces for domestic or foreign markets.

In connexion with this clause, a contract cannot be accepted when it:

(a) Establishes a minimum volume of production;

(b) The recipient company is not authorized to exceed a certain volume of production;

(c) Gives to the licensor the right to fix the price of products;

(d) Obliges the licensee to discontinue the use of non-patented know-how upon termination of the agreement.

Article 7, clause XII

Clause XII prohibits the registration of contracts that oblige the licensee to sign an exclusive sales or representation contract with the licensor covering the national territory.

It has been found that, in practice, a restriction of this kind occurs rarely. However, the acceptance of this clause will depend on the type of products involved and on market conditions.

Article 7, clause XIII

Clause XIII prohibits the registration of contracts that establish excessively long terms of enforcement. In no case may the recipient company be obligated beyond 10 years.

In connexion with this clause, the duration of contracts must be specified precisely because there is a close relationship between the duration of a contract and the payments involved. Although all obligations of the recipient company are not to exceed a period of 10 years, there is nothing in the Law that prevents the Registry from accepting a new contract after the original one has expired.

Experience has shown that the question of confidentiality after the termination of the contract becomes a central issue and closely relates to this clause.

Within the context of this clause, it is important to determine the minimum period required for the recipient company to absorb the technology effectively, which, in turn, depends on the complexity of the technology, the technical capability of the recipient company and the sector of industry.

In the application of clause XIII, due consideration is given to the existence of trade marks and/or patents from the licensor.

Article 7, clause XIV

Clause XIV prohibits the registration of contracts that call for disputes to be submitted to the jurisdiction of foreign courts.

No comments on this clause are necessary.

Article 7, exceptions

Except for clauses I, IV, V, VII, XIII and XIV for which no exceptions can be made, the Law establishes that contracts that do not meet one or more of these conditions may be registered if the National Registry of Technology Transfer believes the contract is of special interest to the country.

Experience with the Law

From 29 January 1973 to 31 May 1975, 6,528 contracts were presented to the Registry either for information or for registration. Of the 4,244 contracts submitted for registration, 2,200 were examined from the legal, economic and technical points of view. Of these, 1,600 were approved for registration and 600 were rejected. This figure does not include the many contracts that were modified after discussions with officials of the Registry. In 307 cases where registration was denied, the affected parties requested the Registry to reconsider its decision. In 80 per cent of the cases decided negatively, the rejection was based on clause II of Article 7.

In the remaining cases, the negative decision was not challenged for two reasons:

(a) In many cases the parties expressed their willingness to adjust their contracts to the Law;

(b) In a few cases the recipient company decided not to continue with the agreement.

Most frequent violations of Article 7

Table 1 shows the frequency with which the various clauses of Article 7 were violated in 600 contracts for which registration was denied. It does not include the many contracts that were modified after discussions with officials of the Registry.

TABLE 1. BREAKDOWN OF VIOLATIONS OF ARTICLE 7 OF LAW ON TECHNOLOGY IN 2.200 CONTRACTS EXAMINED, 29 JANUARY TO 31 MAY 1975

Clause		*Number of contracts*	*Share of total (percentage)*
I.	Involving technologies freely available in the country	5	0.23
II.	Payments not in relation to the value of technology acquired or constituting an excessive burden on the country's economy	494	22.5
III.	Interference with the management of licensee	68	3.1
IV.	Obliging licensee to grant back to licensor patents, trade marks, improvements etc.	129	5.8
V.	Limiting licensee's research and development	103	4.7
VI.	Obligation to acquire from licensor equipment, parts, raw materals etc.	67	3.1
VII.	Restricting exports, contrary to Mexico's interest:		
	(a) Total prohibition	105	4.8
	(b) Restrictions on geographical areas or countries	31	1.4
VIII.	Prohibiting the use of complementary technologies	20	0.9
IX.	Obligation to sell licensed products to the supplier company only	6	0.3
X.	Calling for permanent employment of personnel appointed by licensor	4	0.2
XI.	Limiting production volume or imposing sales price on licensed products	210	9.6[a]
XII.	Obligating licensee to sign exclusive-sales contracts with licensor	7	0.3
XIII.	Establishing excessively long terms of duration of contracts	261	11.9
	(a) Obligatory period exceeding 10 years	105	4.8
	(b) Excessive period under 10 years	33	1.5
	(c) Obligations to licensee exceeding 10 years	123	5.6
XIV.	Calling for contract disputes to be submitted to the jurisdiction of foreign tribunals	124	5.7

[a]Most violations of clause XI resulted from a provision prohibiting the licensee from using the technical information after the agreement terminated.

Eighty per cent of the contracts rejected violated clause II of Article 7, but many of these contracts violated other clauses as well.

To determine whether a contract violated clause II, the payments specified in the contract were compared with payments for similar products or processes in a given sector. Additionally, royalty payments for similar products in other countries and the licensing history of the companies involved were taken into account. In evaluating the technology concerned, technical studies developed specifically by the National Council on Science and Technology and other institutions such as specialized research institutes were referred to. The techno-economic evaluation of the contracts was conducted in close rapport with the recipient companies.

The other clauses most frequently violated are, by degree of importance, the following:

Clause	*Share of 600 negative decisions (percentage)*
XIII	43.5
XI	35.0
VII	22.7
IV	21.5
XIV	20.8
V	17.2

Renegotiation and modification of contracts

An important number of contracts that were originally rejected by the Registry have been revised. So far, as a result of intensive negotiations with the parties concerned, 243 of the contracts examined were modified so that they would conform to the Law. In 24 cases, the decision of the Registry was reversed as a result of an appeal to the courts.

The renegotiation of contracts has taken place on an informal basis, and the Registry has been able to participate in the revision of the contracts at three stages:

(a) Before the contract has been officially submitted (sometimes before the signing);

(b) After submission, but before a final decision has been reached;

(c) After a contract has been denied registration.

In the renegotiation stage, the Registry has acted with a high degree of receptiveness and flexibility. It has made a deliberate effort to understand the complexities involved in contract negotiations and to appreciate what was or was not equitable in a technology agreement.

The Registry maintains a very active team of researchers to provide the information necessary for evaluating contracts objectively. In this effort it has gathered an impressive amount of information.

The Registry recognizes that the Law should be applied equitably and consistently. At the same time, the worth of a particular transaction must be assessed in terms of its contribution and its value to Mexico.

India

In India, for several years both import of technology and foreign capital investment have been subject to considerable regulation. The process of approval of a foreign collaboration agreement is part of the process of industrial approvals. For industry covered by The Industries (Development and Regulations) Act of 1951, the entrepreneur is first given a letter of intent which stipulates whether or not foreign collaboration will be considered for the project. Thereafter, he goes ahead with other negotiations including those for foreign collaboration, if permitted. An industrial licence is issued only after such negotiations receive the approval of the Government.

Although foreign-exchange regulations do not refer specifically to technology licence agreements, the power under these regulations to refuse remittances of foreign exchange makes the regulation of technology licensing possible. The policy is to permit sophisticated foreign technology having high priority to be imported that the country could not otherwise acquire. Permission to import will be denied in those fields where indigenous technology is sufficiently developed.

To assist entrepreneurs, explicit guidelines were formally published in 1968. The guidelines provide lists of industries in which *(a)* no foreign collaboration will be permitted; *(b)* only technical collaboration-licensing will be permitted; and *(c)* financial, as well as technical, collaboration will be permitted (19, pp. 44-51). A close link has existed between foreign capital investment and inflow of technology in certain sectors, and this aspect is taken into account in determining payments for technology. The general approach has been to limit foreign participation in new projects to 40 per cent of equity capital (49 per cent in special cases). Majority foreign holdings are not normally permitted except where existing companies with majority foreign holdings accept a phased reduction in such holdings when the equity base is expanded to finance new projects or expansions. Royalty ceilings of 3 per cent and 5 per cent are also indicated for specific products. The maximum duration of licence agreements is not normally to exceed five years.

The guidelines also specify that:

(a) Foreign trade marks should not be used for sales in India;

(b) Clauses that provide for minimum royalty payments will not be permitted;

(c) Royalty payments will be computed on the basis of value of production ex-works, minus value of imported components, and will be subject to tax;

(d) Clauses in the licence agreement that prohibit exports will not be permitted except for exports to countries where the foreign party has similar manufacturing licence agreements or is legally not in a position to permit exports;

(*e*) Provision should be made for sublicensing know-how to other Indian enterprises on terms that are mutually acceptable to all parties concerned, including the foreign collaborator and the Government.

Exemptions are available for proposals envisaging substantial exports. Lists of gaps in technology have also been published subsequent to 1968.

In addition, the letter of intent itself invariably contains the following general guidelines:

> (i) Government [does] not normally favour restrictions on export franchise in the proposals for foreign collaboration, except to such countries where the overseas collaborating parties have licensing agreements for local manufacture. On the other hand, the Government would consider favourably proposals of foreign collaboration in

which a suitable 'favoured licensee' clause is incorporated in the draft agreement to obtain a process licence, know-how, royalty and research and design assistance.

(ii) Approved/registered Indian engineering design and consultancy organizations must be the prime consultants and Government will consider permitting the purchase of only such design and consultancy services from abroad as are not available within the country.

(iii) Proposals for the purchase of overseas technology (process licence fees, know-how, royalty, R and D etc.) must be accompanied by proposals regarding the programme of further development and improvement of technology in this field (as distinct from analytical or quality control) in the country.

(iv) It is desirable that approved/registered Indian engineering design and consultancy organizations should be associated right from the start in any evaluation, selection and negotiation conducted for the purchase of overseas technology.

(v) It is desirable that inquiries to overseas parties should be made on the basis of separate quotations for technology (licence fees, know-how, royalty, R and D assistance etc.) and design and consultancy services not available in the country. (19, p. 76).

The Foreign Investment Board is headed by the Secretary of the Department of Economic Affairs and includes the top officials of the ministries of industrial development, company affairs and production, Director General of Technical Development, the Department of Science and Technology, the Council of Science and Industrial Research, and the Planning Commission. Powers of delegation exist to a subcommittee and, where payments are below Rs 0.5 million (about $66,000) per annum, to the production ministries themselves. Cases are sponsored by the production ministries concerned after consultation with the authorities mentioned above and with the Development Commissioner for Small-Scale Industries.

In 1973, a new foreign-exchange regulation was enacted, which provides that non-residents or non-citizens and companies with foreign holdings of above 40 per cent require the approval of the Reserve Bank of India before they can act as or accept appointment as agent or technical or management adviser in India or use trade marks.

Thus, the additional approval of the Reserve Bank will now be required for registered users in trade-mark licence agreements or employment of foreign advisers or for certain activities of foreign subsidiaries and companies having substantial foreign holdings.

The approach of the Indian Government is to ensure considerable selectivity in the inflow of technology. Foreign technology is not normally permitted in non-essential and non-priority sectors except when there is a substantial degree of export orientation.

Despite the more detailed scrutiny now involved, 810 technology agreements were approved during the period 1968-1972, of which 143 proposals involved foreign capital participation of over $25 million. During this period 488 applications were rejected.

Most of the technology agreements related to the manufacture of industrial machinery and equipment, including electrical equipment, machine tools, transport equipment; chemicals and petrochemicals; and products of metallurgical industries. While the guidelines have been followed fairly strictly, a pragmatic approach has been adopted on a case-to-case basis, so that Indian licensees can obtain essential technology.

Implementation of the guidelines has not posed any serious difficulties and in fact has greatly strengthened the bargaining power of licensees. Undesirable and restrictive provisions have also been avoided. Limiting the duration of agreements to five years (with exceptions in a few special cases involving highly sophisticated technology) has had a salutory effect in forcing licensee enterprises to make maximum efforts to absorb imported technology effectively as rapidly as possible. Royalty payments can usually be adjusted within the limits prescribed, though, in some cases, these have been accompanied by fairly high initial lump-sum fees. The avoidance of restrictive export provisions has posed some problems, which have usually been satisfactorily resolved. Sublicensing provisions initially provoked some controversy, but most foreign licensors now accept that the Government's insistence is primarily to ensure that similar technology shall not be imported through numerous foreign technology agreements, all at considerable cost. Repetitive purchases of technology now receive greater attention, but it is still too early to evaluate the potential benefits of such a clause vis-à-vis the commercial obstacles in enforcing it.

The criteria for approving technology agreements are well defined. Basically, no collaboration will be permitted if the industry is not eligible for foreign collaboration. In many cases, the letter of intent itself makes this position clear, thus making an application for foreign collaboration unnecessary. With regard to industries that are *prima facie* eligible, the views of the technical authorities and of the Council of Scientific and Industrial Research on the availability of the know-how within the country must be considered. Payment of a royalty is not allowed for a period of more than five years. Since projects take time to reach the production stage after the signing of the contract, the period of the agreement could be up to eight years from the date of the signing of the agreement, provided that the period of the payment of royalties does not exceed five years. For royalties, the ceilings described in the guidelines are taken into account. Past cases of import of similar technology are also considered. Where an investment is involved, the royalty may be fixed at a slightly lower level, since dividend remittances will also be entailed. Lump-sum payments are allowed where specific services are to be performed at the beginning of the contract.

After the terms of the approval are communicated to the entrepreneur, he executes the agreement and submits copies to the relevant production ministry, which scrutinizes the agreement and asks the entrepreneur to revise clauses that do not conform to the Government's policy. It is only after the agreement is taken "on record" that the Department of Economic Affairs authorizes the Reserve Bank of India to permit the remittances.

No "validity period" (period after which the approval will expire if the agreement has not been implemented) is specified. The period imposed for the implementation of the industrial licence ensures the implementation of the agreement. Since 1970, the Indian entrepreneur has had to submit an annual return indicating the royalties remitted, the steps taken for research and development and other relevant particulars. The follow-up is not, however, strictly monitored or scrutinized.

Extensions of technology agreements are not encouraged, with the result that they are generally not sought. About 15 per cent of the agreements approved in recent years have been extended. The test for granting extensions is whether the applicant has had sufficient time to absorb the technology. Extensions are allowed

only for those products in respect of which the applicant has not had sufficient time to absorb the technology. Generally, lower royalty rates are prescribed for extensions; sometimes, royalties are allowed only for exports.

The existence of patents and the payment of fees, therefore, do not appear to be checked when licence agreements are scrutinized. The Government has recently issued instructions to the effect that in scrutinizing licence agreements, the validity of the patent should also be taken into account, and it should be specifically provided in the agreement that the royalty paid in pursuance of the agreement will constitute compensation paid to the holder of the patent for its use.

The royalties in India are taxed at a rate of 50 per cent. The rates do not seem to have been fixed with any specific reference to the desirability of importing technology, nor do they in fact affect imports.

The Indian Investment Centre, an autonomous institution financed by the Government, provides information and assistance to entrepreneurs in securing technology from abroad.

A few detailed studies on collaboration between foreign and Indian companies are available. It is not possible to do more than mention them here (20) (21).

Table 2 gives a breakdown, by industry, of the approvals of foreign technology agreements from 1946 to June 1973. The machinery and machine tools, electrical and transportation industries account for 48 per cent of the approvals during the period up to 1968 and 58 per cent of the approvals from 1968 to June 1973. Together with chemicals, they account for 70 per cent of the approvals in recent years. This shows the extent to which licensing is used to diversify the manufacturing capabilities in the machinery and engineering sector.

TABLE 2. BREAKDOWN OF FOREIGN TECHNOLOGY AGREEMENTS APPROVED IN INDIA, 1946-JUNE 1973
(Number)

Industry	*1946-1967*	*1968-1973 (June)*
Food, beverages and tobacco	24	14
Textiles	116	10
Pulp and paper	52	14
Rubber products	34	13
Chemicals	267	110
Pharmaceuticals	148	7
Metallurgical industries and metal goods	339	49
Machinery and machine tools	804	295
Electrical	374	164
Transportation	168	83
Consultancy	18	16
Others	448	264
Total	2 792	939

Source: 1946-1967: *Foreign Technology and Investment* (New Delhi 1971). National Council of Applied Economic Research; 1968-1973: data supplied by the Ministry of Industrial Development, New Delhi.

With regard to royalties and duration, approvals have conformed almost always to the announced norms. A study (21) for the period up to 1967 showed, among other things, that *(a)* more than 58 per cent of the approvals related to firms having

had more than one collaboration agreement; *(b)* in 85 per cent of the cases, there was no accompanying foreign investment; *(c)* in 23 per cent of the cases the duration was unspecified, and in 40 per cent it was over five years; *(d)* in 36 per cent of the cases no royalty was specified, and only in 4 per cent was it over 5 per cent; *(e)* in more than 50 per cent of the cases royalties were combined with lump-sum payments; and *(f)* the United Kingdom of Great Britain and Northern Ireland, the United States of America and the Federal Republic of Germany were the leading suppliers of technology, accounting for 31 per cent, 20 per cent and 12 per cent, respectively, of the approvals. These statistics are accurate today, except for those concerning duration and royalties.

Indonesia

In Indonesia, the foreign and domestic investment laws provide an opportunity for screening technology licence agreements. No special regulation governs the import of technology. Currently, there is freedom of foreign-exchange transactions, including royalty and similar payments. However, the foreign and domestic investment laws make it possible for the Board of Investments to impose conditions on the import of technology. In practice, this is not done under the Domestic Investment Law of 1967. Under the Foreign Investment Law of 1968, licence agreements are subject to a measure of scrutiny. Some regulation is possible through taxation. Royalties may be taxed at lower rates than income. The Ministry of Finance decides to what extent royalties may be considered a legitimate item of expense to be deducted from income.

The Board of Investments in Indonesia was reorganized in 1973 so as to centralize the examination of applications for investment, as distinct from the earlier procedure when the entire scrutiny took place in the respective departments. The Board, however, scrutinizes the legal aspects of agreements. The technical aspects are still looked into by the respective departments to which the applications are sent for comments. The Ministry of Finance scrutinizes the terms relating to royalties from the point of view of taxation. Although it takes into account views of other departments, its own view generally prevails.

Until June 1973, each Directorate General of Industry decided whether to approve licence agreements on the basis of its own experience and the extent to which the royalty payments would constitute an element of the cost of the project. There were no uniform criteria. Since then, however, the Ministry of Finance has followed certain guidelines with regard to the rates and to the need for a separate payment itself. Also, where the foreign-equity participation is more than 51 per cent, it is held that payment of royalties will not be necessary, since the foreign partner has sufficient incentive to import technology. Subject to these considerations, agreements are scrutinized to see that profits are not disguised as royalties. The problem arises because the marginal rate of taxation for income is 45 per cent, whereas the rate on royalties is 20 per cent. The Ministry is attempting, therefore, to limit the extent to which royalties can be treated as an item adaptable for tax purposes. From June 1973, the Ministry of Finance has adopted as a norm a royalty rate of 2 per cent for five years, a rate chosen on the basis of experience. Admittedly, restrictions on royalties are not effective for other than tax purposes, since foreign-exchange transactions can take place freely. The fields in which technology may or may not be permitted have not been specifically delimited. Decisions are

taken on an *ad hoc*, case-by-case basis. Clauses of agreements are scrutinized by the Board of Investment, but only to a limited extent, to ensure the inclusion of arbitration and *force majeure* clauses, for example.

The patent aspects of licences are not considered, since Indonesia does not have a patent law at present.

No data are available on the number of licence agreements that have been approved in Indonesia. It may, however, be stated that most of the agreements relating to foreign investment in Indonesia appear to provide for royalty payments as well. Besides, the extent of purely domestic investments involved in collaboration is relatively limited because the local units are so small. Table 3 gives the breakdown, by industry, of foreign investment agreements approved as a broad indication of the fields of industry in which licence agreements may exist.

TABLE 3. BREAKDOWN OF AGREEMENTS RELATED TO FOREIGN INVESTMENT IN INDONESIA APPROVED FROM JANUARY 1967 TO JUNE 1973

Sector	*Number of agreements*	*Capitalization (million dollars)*
Manufacturing		
Feedstuffs	8	5.4
Chemicals	17	91.9
Containers	14	24.3
Electrical goods/household appliances	20	25.4
Food processing/beverages/seasoning	29	58.7
Metalworking	35	54.6
Pharmaceuticals/cosmetics	34	38.4
Remilling/crumb-rubber processing	7	4.0
Textiles	44	314.5
Tobacco processing	10	12.7
Miscellaneous	106	138.2
Total manufacturing	324	768.2
Agriculture/land development	44	65.3
Air transport	9	3.2
Fisheries	9	19.7
Forestry	77	489.4
Hotels/tourism/real estate/housing	29	175.0
Mining (excluding oil)	15	460.1
Recreation	9	16.0
Construction	23	24.4
Miscellaneous	47	72.0
Grand total	586	2 093.3

Source: Board of Investment of Indonesia.

From June 1973 to October 1973, 23 licence agreements were referred to the Ministry of Finance. The Ministry permitted royalty payments in only three cases and rejected the others. Among the cases in which payments were rejected were those relating to the manufacture of sugar, cement, tin-plate, cables, hand tools, small tools and cutting tools and polyvinyl chloride sheets. The cases in which royalties were allowed were for manufacture of arc-welding electrodes, tobacco,

juices and concentrates. In some cases payments could have been permitted, e.g. manufacture of cutting tools, small tools and cables, and in some the permission was not necessary, e.g. juices and concentrates. It can be seen that greater scrutiny and more uniform industry-oriented guidelines are necessary.

Thailand

In Thailand, the Promotion of Industrial Investment Law of 1962 provides an opportunity for screening technology licence agreements and a method of regulating and promoting important fields of industrial activity. There is no specific provision for screening such agreements, for they are considered private transactions between two parties. Local parties, however, are expected to file a copy of the agreement and register it with the Bank of Thailand to qualify for making remittances. Once this has been done, commercial banks make the actual remittances and report to the Bank. Scrutiny, if any, is confined to ensuring that the payments made shall conform to the terms of the contracts. There is no scrutiny of patents in technology licence agreements, since Thailand does not have a patent law.

The tax rate on royalties in Thailand is 25 per cent. The rate does not seem to have been fixed with any specific objective in view and does not in practice encourage or discourage the import of technology.

Table 4 shows the royalties and other payments made by selected industries in Thailand in 1972. Out of the 155 agreements for which payments were made, at least 60 per cent appear to have been entered into by joint ventures, particularly in textiles, and by wholly owned subsidiaries and branches of foreign companies, particularly in toiletries, tire manufacture and automobile assembly. The royalties are generally paid for 5 years but sometimes for 10.

TABLE 4. PAYMENTS FOR LICENCE AGREEMENTS IN 1972 IN THAILAND

Industry	*Agreements involving*				*Approximate value of payments (thousand dollars)*
	Royalties (number)	*Technical assistance fees (number)*	*Trade-mark payments (number)*	*Total*	
Textiles	16	12	1	29	1 375
Toiletries	18	2	-	20	1 268
Pharmaceuticals and chemicals	13	-	-	13	275
Paints	5	1	1	7	129
Milk products	4	1	-	5	557
Batteries and electrical products	7	4	-	11	387
Tires	1	1	-	2	419
Automobile assembly	5	1	-	6	358
Glass	1	2	-	3	265
Copying machines	3	-	-	3	270
Others	44	10	2	56	1 853
Total	117	34	4	155	7 156

Source: Bank of Thailand.

Textiles and toiletries each account for 20 per cent of the payments made. With regard to toiletries, 1 firm out of the 20 (table 4) remitted $0.7 million. Royalty

rates have varied widely: 10 per cent in one case, 7 per cent in another, 5 per cent in two cases and below 5 per cent in others. In pharmaceuticals and chemicals, 12 out of 13 firms are in pharmaceuticals. Royalty rates have again varied: 10 per cent in one case, 8 per cent in another, 6 per cent and 5 per cent each in two cases, 3 per cent in two cases and so forth. Seven out of the 11 firms manufacturing paints in Thailand made remittances. Five out of 8 firms manufacturing milk products made remittances. Two out of 4 firms manufacturing automobile tires made remittances, the rates being 3 per cent and 3.6 per cent. Six out of 10 firms engaged in automobile assembly made remittances, the rates varying again–5 per cent, 3 per cent, 1.2 per cent and 1 per cent. One firm making copying machines paid at a rate of 10 per cent and 2 firms at 5 per cent. The fairly wide variations in royalty rates have been mentioned above in some detail to underline the desirability of laying down some guidelines.

The Philippines

The Philippine Investment Incentives Act of 1967 provides for regulation and screening of technology licensing in major fields of industry. There are two tiers of control. For projects covered by the Investment Incentives Act, the entrepreneur first submits an agreement to the Board of Investments, which may advise him to modify it before the Board will approve the project. The agreement then has to go to the Central Bank, which may modify it further. The Act, however, does not spell out any policy for technology licensing.

The Central Bank has more comprehensive powers than the Board of Investments to control licence agreements whether they are covered by the Investment Incentives Act or not. Circular No. 281 of the Central Bank, dated 26 November 1969 and issued under the Central Bank Act, provides for prior authorization by the Central Bank of all contracts involving remittance of foreign exchange. Pursuant to Section 5 of this Circular, licence agreements covering royalties or payment of rentals or fees for the use of patents, trade marks and copyrights and for the transfer of technology to local licensees by foreign licensors must be submitted to the Central Bank for approval before royalties may be remitted to the foreign licensors.

Section 6 of the Central Bank's Circular No. 289 of 21 February 1970 states that the sale of foreign exchange for current invisible payments by authorized agent banks shall be allowed provided that remittances for royalties, among other things, shall be subject to regulations to be promulgated by the Monetary Board.

Pursuant to Circular No. 289, the Monetary Board promulgated certain implementing rules and regulations. In particular, a memorandum to authorized agent banks (MAAB) of 21 February 1970, amended on 5 January 1971, states that remittances of royalties/rentals on patents, trade marks and copyrights, net of the withholding tax, of up to 50 per cent of the royalties for rentals incurred during the year for which the remittance is being paid may be allowed, provided that no royalty remittance shall exceed 5 per cent of the wholesale price of the commodity being manufactured locally under a royalty contract. The tax rate on royalties in the Philippines is 35 per cent.

On 7 December 1973, the Monetary Board promulgated Central Bank Circular No. 393 (see annex III), entitled "Regulations Governing Royalties/Rentals". This Circular permits 100 per cent remittance, net of taxes, of royalty/rentals/fees owed to foreign licensors provided that certain conditions are met.

As far as licences are concerned, there are no explicit guidelines. Section 14 of the Investment Incentives Act provides, as one of the basic rights guaranteed, the right to remit abroad, at the existing rates, payments arising from technological-assistance contracts, subject to the provisions of the Central Bank Act. Investors in registered enterprises are also given the protection of patents and other proprietary rights. The foreign-exchange division of the Central Bank processes the applications, but the Government makes the final decision. There are no formal systems or procedures for examination or deliberation, though the Bank may refer cases on a purely *ad hoc* basis to the Board of Investments for comments. The Board of Investments also examines agreements.

The Board of Investments and the Central Bank have adopted parallel and largely similar criteria. However, the Bank has the final say. The Board scrutinizes the restrictive clauses and the duration of the agreement. The Board would prefer entrepreneurs to pay royalties for know-how rather than a lump sum. Comparable royalties in similar cases are considered. In some cases, the capitalization of royalties has been permitted so that the foreign collaborator will have a continuing interest in the project. The Board considers a duration of 10 years a reasonable period in which technology can be absorbed. The Board tries to take a realistic approach with regard to the project as a whole and does not concern itself with the clauses of the agreement when the project is financed by foreign partners and the other elements of the project have already been settled. Some clauses are left alone if they are considered to reflect essentially business decisions between two parties.

The Central Bank evaluates contracts with reference to possible economic benefits. The criteria seem to be that the contracts should contribute to the technical knowledge of the country and to other factors such as employment, import substitution or export and revenue for the Government. The applications are rejected if the collaboration is proposed for an industry on the list of overcrowded industries. Of late, there is also a tendency to reject applications for agreements whose sole purpose is to secure a trade name. This is particularly true for cigarettes, where the economic advantage to the country is very limited. The practice of charging management fees is not allowed. Lump sums are not encouraged and must often be set off against future royalties. Contracts entered into before 1969 are not interfered with unless they come up for extension.

After approval, there is no specific follow-up, but for projects registered with the Board of Investments, returns are submitted periodically in which details as to the steps taken to absorb the technology are indicated. Remittances of royalties are supposed to be reported to the Central Bank, but this is generally not done.

There are no specific provisions relating to patents vis-à-vis technology licence agreements.

A study of the agreements concluded up to 1970 (22) showed that over 80 per cent of the 527 companies questioned had entered into no technical-collaboration agreement. Many of the foreign subsidiaries were not parties to such agreements. The study examined 254 agreements and found that 129 pertained to foreign subsidiaries or branches, 53 to minority foreign capital participation, and only 72 to pure technology licensing. Of these 254 agreements, 170 were with firms in the United States and 20 with firms in Japan. Fifty-eight agreements related to pharmaceuticals and 50 to food and beverages, together accounting for more than 40 per cent of the agreements examined. Cosmetics and cigarettes accounted for 33 agreements, 13 per cent of the total. Only 45 agreements, about 18 per cent, related to the machinery

and engineering industry. Of the 254 agreements, 87 related solely to trade marks. Taking the agreements as a whole, 196 out of the 254 provided for trade marks and trade names, 113 for patents and 162 for know-how. The durations were as follows: 174 agreements were for an indefinite period; 21, for 1-4 years; 55, for 5-10 years; and 4, for over 10 years. Of the agreements for an indefinite period, 55 per cent were with foreign subsidiaries and branches. With regard to royalties, the study revealed a somewhat peculiar pattern. Of the 254 agreements, no details were available for 90, and, of the rest, 49 provided for only nominal or no royalties. In 26 the royalty rate went up to 5 per cent, and in 66 it was between 5 and 10 per cent. The study concluded that in agreements providing for nominal or no royalties, there might be some hidden pricing.

During the period October 1971 to September 1973, 74 agreements were approved, of which 35 related to trade marks, trade names etc. and 39 to services and know-how. These figures show the continuing use of trade marks and their predominance in licence agreements. Import of technology from the United States is involved in 34 per cent of the agreements and from Japan in 12 per cent. Table 5 gives the products covered and compares the position up to 1970, to the extent possible. The number of engineering agreements has somewhat increased; but, even so, some agreements are still concerned with non-essential items. The incidence of restrictive clauses, the extensive use of trade marks, and the import of technology for non-essential items would appear to underline the need for a closer scrutiny of licence agreements in the Philippines.

TABLE 5. LICENCE AGREEMENTS IN THE PHILIPPINES CLASSIFIED BY INDUSTRY

Industry	*Up to 1970*	*October 1971 to September 1973*
Plantation, mining and petroleum	1	5
Foods	31	4
Beverages	19	
Textiles and wearing apparel	5	
Electrical supplies, appliances and accessories	20	
Chemicals and paints	24	11
Pharmaceuticals	58	2
Metals, metal products and construction equipment and materials	27	
Petroleum products	9	
Cosmetics, toiletries, soaps and detergents	19	2
Motors, engines, machinery	7	15[a]
Cigarettes and tobacco products	14	2
Office supplies and equipment	13	
Cars, car parts and rubber products	7	
Electronics	-	3
Shoes	-	1
Films and motion pictures	-	13
Phonograph records	-	5
Ceramics	-	1
Pulp and paper	-	2
Total[b]	254	66

Source: Up to 1970: ***Restrictions on Exports in Collaboration Agreements in the Republic of the Philippines*** (United Nations publication, Sales No. 72.II.D.8). October 1971-September 1973: Central Bank, Philippines.

[a] Classified as engineering.

[b] Details on eight agreements not available.

Republic of Korea

In the Republic of Korea, the import of technology is governed by the Foreign Capital Inducement Law of 1966 as amended in 1973. The Law now covers all technology licence agreements irrespective of duration, whereas earlier it covered only agreements with payment periods exceeding a year. The Law provides that: *(a)* a company must obtain the authorization of the Minister of the Economic Planning Board before entering into a technology licence agreement or before renewing or changing it; *(b)* conditions may be attached to the authorization; and *(c)* the agreement should be implemented within six months of authorization or such extended period as may be allowed.

The guidelines for promoting and regulating foreign technology and investment are briefly described below.

Priorities are given in fields of technology that:

(a) Contribute to the exploitation of export markets;

(b) Contribute to the development of process engineering and production of mechanical parts;

(c) Require lengthy development that is not economically feasible locally;

(d) Ensure positive profit from the viewpoint of manufacturing and raw material costs;

(e) Contribute to the improvement of the country's balance-of-payments position;

(f) Increase employment of local labour;

(g) Utilize local raw materials to a maximum degree;

(h) Contribute to the development of a well-balanced economy.

In principle, payments for the technology should be less than 3 per cent of total sales calculated on the basis of the value added by the local manufacturing unit, and the duration of the payments should be no longer than three years.

Import of technology for the sole purpose of using a trade mark or taking advantage of the sales market and import of raw materials or intermediates is prohibited.[10]

The following restrictive provisions or tie-in clauses imposed by the licensor in licence agreements are not permitted:

(a) Restrictions on sales territory or sales rights except where the licensor has earlier given exclusive sales rights;

(b) Restrictions on obtaining competitive know-how from other parties or on rights to sell competitive products;

(c) Tie-in clauses regarding the guarantee of a minimum annual payment.

[10] Korea Exchange Bank, *A Guide to Foreign Capital Inducement in Korea* (Seoul, 1971), p. 78. This publication may be referred to for a detailed account of the procedure for import of technology. A more recent announcement says that only up-to-date technology and new technology will be approved for inducement. *Korean Business Review*, No. 36 (1973).

The following provisions should be included in agreements:

(a) A guarantee of the quality of the products manufactured through the use of the acquired technology;

(b) A licence permitting the licensee to use new technology patented by the licensor during the period of the agreement;

(c) Protection of the acquired technology against possible third-party claims for infringements.

The Foreign Capital Inducement Deliberation Committee established under the Foreign Capital Inducement Law is a body at the ministerial level with the Minister of the Economic Planning Board as chairman, and, as members, the Ministers of Finance, Agriculture, Commerce and Industry, Construction, Science and Technology; the Governors of the Bank of Korea, the Development Bank and Korea Exchange Bank; and other persons widely educated and experienced in economics and law nominated by the President. The chairman has powers to decide cases where the royalty rate does not exceed 3 per cent and the period of the agreement does not exceed 3 years. Cases are sponsored, that is, brought before the Committee, by the Bureau of Economic Co-operation of the Economic Planning Board in consultation with other authorities concerned. Agreements of a duration of less than one year are considered directly by the foreign-exchange division of the Minsitry of Finance, and remittances are authorized more or less automatically.

Points to be considered in examining agreements are: *(a)* the need to induce the technology; *(b)* details of the technology to be induced; *(c)* costs involved; *(d)* duration; *(e)* economic and technological spread effect; and *(f)* relevancy to and effect on business enterprises in the same field.

The applicant must submit a report to the Bureau of Economic Co-operation not later than one month from the date on which the technology is acquired. Follow-up is specifically the responsibility of the Board's foreign capital management section, which also administers such other changes, including extensions, as the applicant may seek after the general approval is given.

There are no specific provisions relating to patents vis-à-vis technology licence agreements.

In principle, foreign investment is supposed to amount to at least $200,000 per project. The only exception is the electronics industry, for which the limit is more than $100,000. Foreign investment is especially encouraged in the machinery and electronics industries and other industries requiring larger establishments and facilities than domestic entrepreneurs can afford or manage. Foreign investment is not allowed in industries that may disrupt the domestic supply of raw materials or intermediate goods or that may compete in international markets with existing export industries.

Foreign investors are not permitted to put in more than one half of the total capital required, though an exception is made for some specified lines of industry. For example, foreign investors are authorized to invest more than 80 per cent of the total investment in mink raising. In the electronics industry, foreign investors are authorized to own the whole project if more than $3 million is needed to start the business, or if the value of exports is expected to total more than $10 million in three years from the start of operations.

Foreign investment is to be made with capital, dividends, capital goods and technical know-how. The principal and duly earned profit and dividends are guaranteed for remittance or reinvestment. All property of enterprises in which foreign capital has been invested is protected by law against undue expropriation. Foreign investors are always accorded treatment equal to that of their local counterparts as provided for in the laws concerned.

Foreign-financed enterprises benefit greatly from tax reductions and privileges. Most of all, they are granted a five-year tax holiday for corporate and property taxes and a 50 per cent tax reduction for three years thereafter. Foreign investors are completely exempt from taxes on their dividends for the first five years and enjoy a 50 per cent tax reduction for the next three years. In addition, foreign nationals hired by the enterprises are not required to pay income tax. No customs duties and commodity taxes are levied on capital goods brought into the country for projects in which foreign investment has been approved.

As a supporting framework on which to base its activities, the Ministry of Science and Technology has initiated several important laws, the purpose of which is to accelerate the indigenous development of industrial technology by acquiring and modifying foreign technology. The most important of these laws is the Science and Technology Promotion Law passed in 1967 and revised in 1972.

The Engineering Consultant Promotion Law of 1973 illustrates the general approach adopted. Its goal is to assist the growth of domestic engineering consulting firms and to strengthen indigenous technical capabilities. According to this Law, all engineering consultants must be registered at the Ministry of Science and Technology. In principle, all the local engineering consulting projects are to be carried out by the local consultants. If it is necessary to rely on a foreign engineering consultant, permission has to be obtained from the Ministry of Science and Technology. Even when foreign consultants undertake the project, a local consultant can participate in it.

A National Council for Science and Technology has also been established.

Table 6 shows data on technology licence agreements of over one-year duration. It is noteworthy that three categories, namely, chemical products, electronics and electrical equipment and machinery, account for nearly 66 per cent of the total number of agreements and nearly 75 per cent of the agreements in the manufacturing sector. Of the 337 agreements approved, 264 were approved between 1968 and 1972. The foreign investment approvals in these years have been growing at a faster pace—over 400 for the same period. Only 42 out of the 337 agreements approved relate to joint ventures. The others are simple licence agreements. This shows the importance of technology licensing, which is being carried on side by side with foreign investment. Of the agreements approved up to 1972, 69.7 per cent pertained to technology from Japan and 22.3 per cent to technology from the United States.[11]

[11] Japan and the United States are the leading investors and suppliers of technology in most South-East Asian countries as well. A study has shown that one of the aims of 16 per cent of the primary manufacturing projects carried out abroad by Japanese investors was to obtain royalties and technical and management fees. Japanese royalties ranged from 2 to 5 per cent as against United States royalties of from 5 to 10 per cent (T. W. Allen, *Direct Investment of Japanese Enterprises in South-East Asia: A Study of Motivations, Characteristics and Attitudes* (Bangkok, Economic Co-operation Centre for the Asian and Pacific Region, 1973), p. 15).

TABLE 6. TECHNOLOGY LICENCE AGREEMENTS OF OVER ONE-YEAR DURATION IN REPUBLIC OF KOREA UP TO JUNE, 1973

(Number)

Industry	*Agreements approved*	*Agreements cancelled*	*Agreements expired*	*Foreign investments approved*[a]
Primary industry	*7*	–	*3*	*26*
Agricultural livestock	7	–	3	11
Fisheries		–	–	10
Mining	–	–	–	5
Secondary industry	*306*	*17*	*72*	*390*
Food	6	–	3	12
Pulp and paper	3	–	2	–
Textiles	9	1	2	45
Chemical fibres	10	1	2	–
Ceramics and cement	5	–	3	20
Petroleum	9	1	–	4
Chemical products	65	2	15	55
Pharmaceuticals	23	–	4	8
Iron and non-ferrous metals	16	2	4	24
Electronics and electrical equipment	69	3	16	79
Machinery	87	7	20	54
Glass	1	–	–	–
Others	3	–	1	89
Tertiary industry	*25*	–	*11*	*25*
Electricity	2	–	2	2
Communications	20	–	6	9
Construction	3	–	3	5
Others	–	–	–	9
Total	338	17	86	441[b]

Source: Economic Planning Board, Republic of Korea.

[a] Up to June 1972.

[b] The figure stood at 615 as of March 1973. In the first half of 1973, licence agreements increased by 10, whereas even in the first quarter of 1973, foreign-investment approvals increased by 77.

South America

Significant developments have occurred in Argentina and in the Andean Group countries.

In Argentina, two laws concerned with technology transfer were passed in 1971. The first (No. 19135) prohibited the imposition of certain restrictive conditions in the automotive industry, while the second (No. 19231) prescribed the regulation of agreements for foreign technology and patents and the establishment of a National Registry for all such contracts. It provided that agreements would not be registered if they contained restrictive clauses that would force the purchase of equipment, raw materials, or components from particular sources; restricted exports except with the licensor's permission; or prescribed unreasonable grant-back provisions, trade mark licensing without a technological contribution, jurisdiction of foreign courts or unreasonably high royalties and payments. Agreements would also not be registered if indigenous technology was available. An important feature of this Law was that it

also required all existing agreements to be registered within a specific period, which necessitated renegotiation of many of these agreements to make them conform to the provisions of the Law. A new law was enacted in 1974 as a substitute for the two earlier laws.

At the regional level, the provisions of the Cartagena Agreement (1970) to which the Andean Group countries are signatories, is of great significance. Article 24 prescribes the norms the five member Governments will apply in evaluating contracts for technology and patents in their countries. These provide for rejection of agreements that contain tie-in obligations with regard to purchase of materials, intermediate products etc. or prescribe restrictive conditions on volume of production, use of alternative technology, export rights, grant-backs and the like. Similarly, restrictive provisions regarding the use of trade marks will also not be permitted (Article 25); such provisions include export restrictions, tie-in clauses for purchase of intermediate products and royalties for unused trade marks. With respect to both technology and trade mark agreements, provisions relating to the permanent employment of the licensor's personnel or appointees are specifically prohibited. While several licence agreements have been entered into within the above framework, it is still too early to determine whether technology in essential sectors has ceased to flow to the Andean Group countries as a result of the Cartagena Agreement.

In Brazil, regulation is exercised mainly through the Industrial Properties Code enacted in December 1971. A well-manned National Institute of Industrial Property has been set up, which plays an important role in implementing the country's basic plan for the development of science and technology. By and large, however, the approach to technology inflow has been very liberal, as have been the conditions permitted in some licence agreements. There is relatively little control over inflow of raw materials and components once certain basic criteria have been met. Just as foreign investments have increased enormously in this country during the last decade, the inflow of technology has also been considerable. It is difficult to visualize future trends in Brazil, but it would appear that regulation of technology inflow will gradually increase. Already government authorities are exercising their power to bring about modifications of technology-supply agreements. Other control aspects such as avoidance of tie-in provisions, export rights and phased domestic manufacture are assuming increasing significance.

Africa

There has been relatively little government regulation of technology agreements as such in most countries in Africa. It is inevitable, however, that licensing of technology for African projects will increase substantially in the near future, and it would be desirable for most of these countries to establish and develop some mechanism for determining the cost and value of alternative techniques and processes and for identifying the principal gaps in technology in each economy.

Restrictions imposed on licensees

Types of restrictions

In executing licence agreements, the licensee may be subject to certain restrictions, some of which are described below.

Sublicence rights

The licensee does not have the right to sublicence the technology unless this right is specifically mentioned in the licence agreement. This form of restriction may prove to be a disadvantage if the licensee should wish to make the technology accessible to subsidiaries.

Territorial limitations

Licence agreements generally specify the territory in which the licensee is authorized to use the technology and the territory in which the licensee is authorized to market the product.

The licensee's use of the technology may also be restricted to specific sectors of the field of application. In the United States, such restrictions may trigger antitrust action by the Fair Trade Commission. Restrictions on export territories may often conflict with limitations set down by the licensee's Government.

Restrictions concerning technical assistance

For reasons of convenience and cost, licensors generally desire to limit the scope of the technical assistance they are to provide. One way to limit it is to specify the number of technical personnel to be dispatched, the number of licensee trainees to be accepted and the quantity of blueprints and log books. However, since the licensor generally assumes the responsibility for successful start-up and initial commercial operations, no major problems arise.

Grant-backs

The licensor may require the licensee to grant back any improvements on the technology the licensee may develop. In some cases, the two parties may agree to exclude major improvements or patentable improvements from the scope of any grant-back.

When the agreement includes exchange of improvements between licensor and licensee, such exchange should be on an equal basis. However, the licensor commonly requires that improvements made by the licensee be granted back with sublicensing rights even when the licensee has no such rights. The licensee may agree to such unequal terms on condition that the licensor shall not sublicence to manufacturers who compete with the licensee or to parties who do not agree to a grant-back of improvements to the licensor together with sublicensing rights.

Prohibiting licensing from others in the same field

Licensors may require that the licensee not obtain any licences from other licensors in the same field. The primary reason for this is to prevent divulgence of information to a third party. If a licensee obtains a licence from a third party, it may provide access to the licensee's facilities by the third party. Thus, the possibility of divulging technology originally provided to the licensee by the licensor exists.

Validity of patents held by licensor

The licensee may be required to assume the obligation not to contest the validity of patents licensed by the licensor. However, in the United States, such a

requirement has been ruled a violation of the antitrust laws following the decision of the United States Supreme Court in *Lear* v. *Adkins.*

Minimum royalties

When an exclusive licence is granted, the licensee is generally obligated to pay the licensor a minimum stipulated royalty even though the licensee's sales do not attain a certain level. In this way, the licensor attempts to stimulate the licensee to produce.

Restrictions concerning retail pricing

Licensors may try to incorporate in the licence agreement provisions that in effect give the licensor control over the retail prices of the products produced under the agreement. In many countries, however, this form of control has been ruled a violation of fair-trade regulations because the licensor, through such action, can virtually subdivide the market and hinder the free flow of the products.

Manufacture and sale of competing products

Licensors usually require that licensees will not manufacture or sell products competing with those of the licensor. This restriction is based on the licensor's desire that the licensee exert his best efforts to promote the sales of the products produced under the licence.

Tie-in

When a licensor obligates his licensee to buy intermediates or components unrelated to the coverage of licensed patents "against the will" of the licensee, he will be prosecuted for violating fair-trade rules. This is an established rule in the United States and fairly common practice in other countries, too.

Aspects of trade restrictions examined by UNCTAD and OECD

Although developing countries benefit from the transfer of technology and know-how through licensing arrangements, some countries have found that the transferred knowledge was outmoded, inadequate or already used in the country. A group of experts of the United Nations Conference on Trade and Development (UNCTAD) examined the various restrictive practices whose effects were likely to be detrimental to developing countries (22). The group divided these practices into two categories: category A for the restrictions that were likely, on the basis of knowledge and past experience, to have significantly adverse effects in developing and in developed countries; category B for those restrictions whose adverse effects were less clear. The group examined restrictive business practices relating to patent, know-how and trade mark licensing arrangements.

The group placed the following restrictive practices relating to patent licensing arrangements in category A:

(a) Requiring the licensee not to contest the validity of the patents involved in the licence and of any other patents of the licensor;

(b) Restricting the use of the subject matter of a patent and of any unpatented know-how licence that directly relates to the working of the patent once the patent has expired;

(c) Restricting exports, whether or not protected by patents in other markets;

(d) Charging royalties on patents after they have expired.

The following restrictive practices relating to know-how were also placed in category A:

(a) Restricting exports to certain markets or granting permission to export only to certain markets;

(b) Requiring the licensee to obtain the approval of the licensor before exporting;

(c) Restricting the level of production.

The group also inserted in category A restrictions or prohibitions on the use of know-how after the termination of expiration of the agreement in question and requirements that the licensee pay royalties during the entire period in which the product involved is being manufactured or the process involved is being applied.

In connexion with restrictive business practices in relation to trade marks, the group held that consumer-protection aspects were also involved. Practices that it felt should not be retained or imposed in the trade-mark field included the following:

(a) Prohibiting the licensee from exporting goods covered by a trade-mark licensing arrangement;

(b) Tying the supply of imports of a product bearing a particular trade mark to the trade mark owner and, thereby, prohibiting imports from a third party or a licensee;

(c) Using protection afforded under the trade-mark system to restrict a licensee's activities;

(d) Obligating the licensee to use a particular trade mark with the know-how supplied.

The group discussed several other restrictive practices that were common to patents, know-how and trade-mark licensing arrangements. Among those, the following practices were placed in category A:

(a) Tying the purchase of goods, such as raw materials and equipment, to the licensor or a person designated by him;

(b) Requiring the licensee to accept additional, unwished-for patents or know-how as a condition for obtaining a licence and requiring the payment of royalties for such patents or know-how;

(c) Demanding higher royalty charges on goods produced for export vis-à-vis goods for the domestic market;

(d) Fixing the price or prices of a product or products manufactured by the licensee;

(e) Placing restrictions on obtaining patents and know-how or trade marks from other licensors with regard to the sale of manufacture of competing products;

(f) Obligating the licensee to use the distribution channels of the licensor.

For those who may assist their Government in improving licensing regulation and—if the case may be—licensing legislation, the UNCTAD report on "Restrictive business practices in relation to the trade and development of developing countries" (23) and the report of the Committee of Experts on Restrictive Business Practices within the frame of the Organisation for Economic Co-operation and Development (OECD), *Restrictive Business Practices Relating to Patents and Licenses* (24), are of utmost interest. It was on the basis of these reports that, on 22 January 1974, the Council of OECD adopted a recommendation concerning action against restrictive business practices relating to the use of patents and licences. This recommendation runs as follows:

> The Council,
>
> Having regard to Article 5(b) of the Convention on the Organisation for Economic Co-operation and Development of 14th December, 1960;
>
> Having regard to the Resolution of the Council of 5th December, 1961, concerning Action in the Field of Restrictive Business Practices and the Establishment of a Committee of Experts [OECD/C (61) 47 (Final)];
>
> Having regard to the Recommendation of the Council of 14th and 15th December, 1971, concerning Action against Inflation in the Field of Competition Policy and, in particular, Section I, paragraph 1, sub-paragraph (i) (c) thereof [C (71) 205 (Final)];
>
> Having regard to the Recommendation of the Council of 3rd July, 1973, concerning a Consultation and Conciliation Procedure on Restrictive Business Practices Affecting International Trade [C (73) 99 (Final)];
>
> Having regard to the Report by the Committee of Experts on Restrictive Business Practices of 11th September, 1972, on Restrictive Business Practices relating to Patents and Licences and, in particular, paragraph 49 therefore [RBP (71) 3 (2nd Revision)];
>
> Recognizing that it is desirable to scrutinize and remedy the harmful effects of abusive restrictive business practices relating to the use of patents and licences since economic development is dependent on the dissemination of scientific and technological innovation through patents and that by granting licences subject to unjustifiable restrictions firms can use the rights attaching to the patents to exercise excessive economic power;
>
> I. RECOMMENDS to the Governments of Member countries:
>
> 1. That they should be particularly alert to harmful effects on national and international trade which may result from abusive practices in which patentees and their licensee may engage, and, in particular, from the following:
>
> (a) when negotiating or operating patent pools or cross-licensing agreements, unjustifiably imposing territorial, quantity or price restrictions or attempting to dominate an industry, market or new industrial process;
>
> (b) by means of territorial restrictions in patent licences affecting international trade, unjustifiably prohibiting exports of patented products or unjustifiably restricting trade in or exports of the patented products to specified areas;
>
> (c) by means of clauses concerning tied sales, obliging the licensee to obtain goods from the licensor or his designated sources, when the tied sales are not justified, for instance, by technical reasons concerning the quality of the goods manufactured under the licence;
>
> (d) by means of grant-back clauses, unjustifiably requiring the licensee to assign or grant back to the licensor exclusively all improvements discovered in working the patents when the effect of this practice is to reinforce the dominant position of the licensor or to stifle the licensee's incentive to invent;
>
> (e) by means of clauses unjustifiably limiting competition, preventing one or more parties to the patent licensing contract from competing with other parties to the contract, or with third persons, in other industrial fields not covered by the licensed patent;

(f) arbitrarily grouping and licensing all patents in a particular field and refusing to grant licences for only some of the patents or using other forms of package licensing when these practices are coercive in character and when the selection of the patents is not negotiated for the convenience of the parties;

(g) contrary to national law, fixing the prices of patented products by means of patent licences.

2. That they should give consideration to the desirability and feasibility of compulsory licensing of patents and, where possible, related know-how, as a remedy to restore competition where such patents have been misused contrary to their restrictive business practices law, when such a remedy is not already provided for in their legislation.

3. That they should give consideration to the desirability and feasibility of making available to the competent authorities procedures for the registration of international licensing agreements, when such procedures are not already provided for in their legislation.

II. INSTRUCTS the Committee of Experts on Restrictive Business Practices to keep under review the application of the present Recommendation and to report to the Council when appropriate.[12]

[12] Recommendation of the Council Concerning Action Against Restrictive Business Practices Relating to the Use of Patents and Licences, adopted by the Council of OECD at its 348th meeting on 22 January 1974, Paris [C (73) 238 (Final)], p. 1.

IV. Terms of licence agreements

Once the technology has been selected, the question of negotiating its transfer arises. Technology transfer may take place between two or three interested parties. There must be a seller of technology and a buyer (or buyers) of technology. The seller has the know-how and the buyer wants to obtain that know-how.

The seller, of course, knows his bargaining strength by considering his position in relation to that of his competitors, the advantage of his know-how as against that of his competitors, the disadvantages the buyer is likely to have when buying technology from others, and the advantages the buyer would derive by buying the technology from him. The buyer of technology has to decide what his real needs are with regard to technologies and what alternatives are available to him for achieving the same objectives from various sources. If there are many alternatives, the terms are likely to be more reasonable. If only one or two parties in the world possess the technology, the know-how will be more expensive, if it is available to all. Those having the technology will naturally wish to make the most out of the situation and will, therefore, part with it only under the conditions most favourable to them.

A company, interested in seeing its new technology utilized in another country, can generally bring this about by establishing a subsidiary in that country and transferring the technology to that subsidiary. This, in law, is a licensing operation, for the subsidiary is a separate legal entity from the parent; and it may well be that the subsidiary will have to pay the parent for the technology transferred. A subsidiary, in other words, is a licensee of the parent. The principles involved in parent/subsidiary licensing are markedly different from those of licensing between separate parties. For a start, if the subsidiary is wholly owned there must be, by definition, no difference of interest between the parent and the subsidiary as licensor and licensee; though when the two are in different countries, there certainly may be national interest in the passage of revenue from one to the other. This interest, however, is a matter for the Government concerned, and here the Government will apply whatever control it exercises over licence agreements.

Furthermore, even with licensors and licensees who are completely separate parties, special arrangements for the transfer of technology from one to the other may be made outside the normal pattern of licensing. For instance, the parties may exchange technology with no monetary payments at all, but the assessment of such arrangements must depend, in each instance, on the relative value of the technology to each side, a value not readily susceptible of determination. The technology may be purchased for a single lump-sum payment with no continuing royalty or other arrangement at all. Here again, it is a question of assessing the simple monetary value of the technology as is done for any purchase; and such a transaction is, in some ways, more akin to buying and selling than to licensing.

It is not uncommon in the industrialized countries for a company to develop its own technology and then find that it falls within the patent rights of another company, and, therefore, cannot be utilized without a patent licence. Such patent licences are paper transactions, since all that is required is authority to operate under

the patent in question. Royalties are certainly involved in such instances, but there is no transfer of technology from licensor to licensee, and different considerations are involved. Certainly the transfer of technology may involve patent licences, as it may well be that the licensor holds patent rights in the licensee's country. In such a case, the transfer of the technology will, of necessity, entail the granting of a patent licence, but this is likely to be a subsidiary feature inherent in the agreement to transfer and acquire the technology.

The one main instance where a patent licence is likely to outweigh the technology is in the pharmaceutical field, where the actual technology may be relatively simple to a chemist, and the key issue is the patent licence that grants authority to proceed. Fo this reason, the patent aspects of the matter predominate, and the reasons for this special circumstance are explained in the section on the pharmaceutical industry later in this study.

Granting mere patent licences to firms in developing countries is probably rare, as the need of the developing countries is to acquire technology. Studies carried out in India and in Latin America have shown that outright purchase of technology, if it is available, would be preferred. Equity and management participation by the donor country can be arranged in special circumstances. However, one cannot really say that what is good under one set of circumstances will be good under another. What generally can be said is that one has to see that there is no exploitation of a developing country while transferring the technology to it from a developed country.

A normal licensing arrangement involves the transfer of technology through an arm's-length transaction from a licensor to a licensee, a royalty payment, and, sometimes, an initial down payment. Other items also need to be included in licensing agreements, such as formal legal provisions; these are to be found in the various lists of such items that have been published.

Some of the most significant of these provisions concern:

- Technical know-how fee
- Royalties
- Period of licence
- Payment to experts lent by the licensor firm for work in the developing country
- Sale of capital equipment
- Buying of raw materials and spare parts
- Buying of intermediary products
- Restrictions on export of products to third countries
- Insistence upon equity participation
- Insistence upon participation in management
- Restrictions on sublicensing
- Secrecy with regard to the know-how transferred
- Control over the raw materials that go into the product, the specifications of the raw materials and the specifications of the product that is ultimately produced
- Charges payable to headquarters for consultancy, managerial assistance etc.

Apart from the legal aspects of international licence agreements, there are commercial aspects involved, the most important of which are discussed below, since it is useful for the licensee to understand the viewpoint of the licensor.

The choice of the proper partner is certainly the most important point. It is necessary, first of all, to ascertain that the licensee has the capabilities for manufacturing under the licensed patent or know-how, and that these capabilities will continue during the entire period for which the licence agreement has been concluded. If this point is not considered carefully, the products the licensee manufactures may not be of the necessary quality and thus destroy a reputation the licensor may previously have had in that country. Or, the product quality may deteriorate during the period of the agreement because the licensee may lose interest in the agreement or because he is not willing or able to replace machinery necessary for manufacturing the goods. Even the best legal provisions in the licence agreement are no substitute for an initial careful investigation designed to prevent a suit in a foreign country, the costs of which may be prohibitive, and to determine whether the licensee may become bankrupt.

The choice of the proper patent or know-how to be licensed to an enterprise in another country is most important. Not all know-how or patented knowledge can be licensed to all countries. A licensee under an agreement involving very advanced technological knowledge must be in a position to apply such advanced techniques. Therefore, it seems necessary to determine, first of all, whether the protected technical knowledge will be understood and well applied in the receiving country.

Secondly, a firm needs to know which knowledge might, or even should, be licensed at a given time. Thus, a firm is well-advised to revise its protected technical knowledge regularly. This is the precondition for an active licensing policy, which, of course, has advantages for both the licensor–in the form of royalties–and the licensee–in the form of access to new technical knowledge–and which has the further advantage of advancing knowledge in general and of contributing to the common good (25).

Other factors must also be considered, such as the political and industrial conditions and the social structure in the foreign country in question, conditions that may be said to constitute the "licence climate" (26) in which an agreement would have to function. Any licence agreement involves, compared with other kinds of agreements, high risks, and these risks are higher in international licensing. The best way to avoid, or at least to minimize, these risks is to study carefully all relevant factors before a licensing contract is concluded.

Related to the commercial aspects are the financial aspects of international licensing. While the licensor's initial reason for granting a licence would certainly be financial, i.e. to receive remuneration in the form of royalties, other motives may have priority. For example, the licensor may find it cheaper to have a foreign licensee manufacture the goods where wages and production costs are lower and then to export them into other countries, including the licensor's own country. Or, the licensor may find it incompatible with his production to manufacture certain of his patented products; and rather than disturb his production line or leave valuable new technical knowledge unused, he decides to grant licences. There may be other financial advantages in international licensing, such as assembling funds from the royalties in the country of the licensee to be used for reinvestment, purchase of goods or raw materials, research, training etc.

The licensor may also feel it is necessary to keep up with his competitors who already manufacture abroad or are about to, or to take a precaution for times when domestic production is hampered or impossible.

The licensee may have several financial reasons for entering into a licence agreement. For the licensee the most important point is to "buy" access to new technical knowledge he could not otherwise acquire at all or not at a reasonable price. Additionally, he may want to obtain an advantage over his competitors by buying, rather than developing, new technical products or processes. A high tariff may force the licensee to seek means of manufacture within the country instead of importing the goods.

Payments

An essential element in licensing, as in all business, is the question of price. It follows, from what has been said about the complexity of licensing, that the price question has many sides to it. It is quite a paradox, therefore, to note that this question has been studied very little. The price of the licence is generally determined by rule of thumb.

Some fundamental approaches do, of course, exist. In certain fields there are accepted royalty rates. A main consideration is what the buyer will regard as a fair price. The seller naturally wishes to receive a fair reward for the investment in research and development; the buyer often takes the licence to save himself the risk and the cost involved in research and development. None of these considerations can, however, be used automatically. To arrive at an equitable price that will be accepted and apply throughout the period of the agreement, all the factors involved must be evaluated in detail.

There are two main ways of paying for a licence–the lump sum and the royalty. Very often, these are combined in licences stipulating a down payment, a royalty and a minimum royalty for each of the first years. In addition, there may be separate payments for certain aspects, e.g. training and technical assistance, special rights such as use of trade marks and the transfer of know-how and manuals and drawings. There could even be a fixed service fee and separate payment for research and development. In combined distribution and licence agreements, the payment may be included in the price.

Lump sum

The lump-sum method is usual in high-technology licensing. It has also been the standard method used in Western European licensing to Eastern European countries. Where licensing involves heavy investment and the element of research is considerable, payment is looked upon as a financial entity and capitalized in a lump sum. Also, if it is foreseen that a factory will use the licensed process for a certain number of years at a given capacity, it is not too difficult to calculate what a given royalty could be as long as the inflationary trend is not too erratic. Therefore, where the continued servicing costs are not important and where continued economic co-operation is not a strong motive, it seems practical and acceptable for both parties to make up a capital sum.

This sum would consist of an equitable part of the research and development involved, certain elements of know-how transfer, technical assistance and training and a capitalized royalty. The sum total would then give the lump sum and could be paid either in cash or in instalments. This is a very simplified example, as it may be

difficult to calculate the costs and even more difficult to define the value of the research and development, which may be very different. Take a small invention within a whole package, a new type of ball bearing, for example, or a method of fixing a light-wall construction to the ceiling. It is obvious that the value of the invention could be considerable. The invention could, in fact, be the thing that makes the whole system competitive. If the price of the invention is stated as a percentage of the price of the whole system, and it was equitable, say, 2 per cent, the price will seem small. If, on the other hand, the royalty is calculated as a percentage of the cost of the invention, the price will seem very high indeed.

The second reason for such a down payment is that the transfer of technology is often expensive for the licensor, who may need to prepare new blueprints and process manuals and also make some of his most efficient personnel available to bring about the transfer. The licensor may need to send personnel to the licensee, frequently abroad. He may feel that he is entitled to his out-of-pocket costs in this respect, and a down payment can cover these costs.

In informed industry in Europe, it is well recognized that a down payment is meant to compensate the licensor for the expense and trouble of transmitting the technology, and the amount of this down payment must depend on the effort required. A down payment to cover this cost is usually a payment in addition to the royalties, for it is only a reimbursement to the licensor and not a return. An additional element of down payment designed to give at least a minimum return to the licensor may require a more detailed consideration. If the royalties ensue satisfactorily, it might be said that to make a down payment as well (apart from any element of down payment to cover the licensor's mere costs) is to make a double payment. For this reason, it is not uncommon to regard the down payment (or part of it) as an advance payment of royalties, so that the royalties, when they arise, are counted against the down payment and are paid only when the calculated royalties first exceed the down payment.

The prospective licensor has only one course open to him, that is, to examine in detail all the relevant factors and try to assess both the marketing situation and the costs involved. On that basis he may formulate a framework for negotiations and define how the payment situation could be made interesting to the licensee. It is impossible to make an exhaustive list, but some aspects the licensor will have to look into may be mentioned briefly.

On the marketing side, he will have to assess the future competitiveness of the licensee in light of the length of the agreement and anticipated sales. This should lead to the possibility of anticipating what profits the licensee will make and the advantage that an exclusive agreement can be for him. Relevant factors here will be the strength of the patents and other industrial rights, especially trade marks; the value of savings for the licensee; and progress in developing the know-how. Another main factor could be possible guarantees from the licensor regarding the efficiency of the machinery.

Also, on the cost side, a list of relevant items should be made. The first item would be to define the costs of research and development. Then the preparatory costs of licensing and costs of negotiations should be estimated. An important item, of course, is to define the costs of the administrative and technical staff. More specific costs of preparing drawings, manuals etc., must be added.

An important item, often overlooked, is the cost of assessing special provisions, e.g. the use of new raw materials, designs or special procurements for this specific

agreement. The expenses involved in technical assistance, e.g. training in both the technical and the marketing aspects, start-up costs and other costs involved in the general servicing of the agreement, must be considered. Another typical item to watch is what licensees are paying. This goes beyond only looking at the licensor's other agreements. It may be a question of usage within that field of industry or within the given territory, and it may have a bearing on the competitive situation and on the trust between the parties. On the basis of this assessment, the licensor should be able to get a fair idea of the maximum and the minimum requirements and detailed guidelines for the ultimate negotiations.

The question of payments concerns not only establishing the size of payments but also determining how the payments are to be made, which involves psychological considerations. It was mentioned earlier that in process licensing it may be in the interest of both parties to capitalize at least certain items in a lump sum. Certainly, some kind of down payment is generally necessary for a provisional agreement, especially when secrecy is involved or there is a question of a valuable option. In know-how agreements, making a down payment when the know-how in question is transferred is generally accepted. Its size would be established on the basis that the down payment is part of the royalty for the period until production starts, e.g., a three years' optimum royalty.

Royalties

When the licence is paid for through a royalty, the essential points are the level of the royalty and the period over which it is to be paid. Royalty periods of 10 or 12 years are common in Western Europe, a period of less than 10 years is unusual, though the length will depend on the significance of the technology. A point that is invariably in the minds of both parties is that if the licensee is successful, he is likely to increase production as time goes on; and if the royalty period is too short, the licensor may not benefit from this expansion fairly. On the other hand, the licensee may feel that his success rests as much on his own management skills as on the quality of the technology. Various formulae have been adopted to balance the two views:

(a) A sliding royalty scale may be used that decreases the royalty as the annual production or sales total increases, for example, a royalty of 5 per cent for sales up to a certain amount in each year, 4 per cent for a specified amount beyond that and 3 per cent for the remainder;

(b) The royalty may be reduced when the total paid has reached the figure set out in the agreement;

(c) The royalty may cease when the total paid has reached a defined figure, whereupon the licensee is said to have a fully paid-up licence.

Variations of these arrangements will be apparent, and the precise formula used may depend, in part, on the other provisions in the agreement. For instance, if the agreement provides for a continuing supply of know-how from the licensor to the licensee, it is seldom practicable for the supply to continue if the royalties terminate or become so low that the provision is a burden on the licensor for which he is not adequately compensated.

It is probably true that in most licences in Western Europe the royalties continue unchanged throughout the period of the royalty payment on the ground that the licensor is entitled to share in the success of the licensee in this manner. As a rule the more successful a licensee, the more willing he may be to pay the royalties.

The key question, of course, is at what level the royalties should be, and this is very difficult to answer because almost all licence agreements are confidential between the parties and perhaps their Government. Hence, any views must be based on incomplete information. Furthermore, royalties vary considerably between industries and even within the same industry. Few, if any, systematic surveys of normal royalties have been made in Western Europe. However, in Japan, as a consequence of the close government control of licensing from abroad, certain information on royalties has been published. Table 7 gives an analysis of the licence agreements approved in Japan in 1970 and indicates their royalty rates.

TABLE 7. PAYMENTS FOR LICENCE AGREEMENTS IN JAPAN, 1970, CLASSIFIED BY INDUSTRY
(Number)

Type of payment	*Industry*					*Total*
	Chemical	*Metal*	*Machinery*	*Electrical*	*Other*	
Initial down payment						
Required	176	41	290	92	214	813
Not required	77	30	130	94	149	480
Royalty						
Less than 2%	8	2	6	19	26	61
2-5%	59	8	62	41	116	286
5-8%	39	10	167	50	71	337
Over 8%	6	5	53	3	12	79
Others	49	28	84	57	76	294
None	92	18	48	16	62	236
Minimum payment						
Required	33	14	136	40	143	366
Not required	220	57	284	146	220	927

This table is difficult to interpret. For instance, it is suspected that the agreements on which no royalty is payable are included among those with an initial down payment, which is, in fact, the full payment for the know-how. It would appear, however, that in most cases, the royalty rate is between 2 per cent and 8 per cent, with a greater tendency towards the lower half of this range in the chemical industry and a greater tendency towards the upper half in the mechanical industries. This is probably in accord with what rates are believed to be in Western Europe, though the difficulty of making profits in the mechanical industries may now be resulting in somewhat lower royalties than the Japanese figures suggest.

In India, government guidelines do not provide any norms with regard to lump-sum payments. Royalty payments are preferred, but suitable lump-sum payments may be considered in deserving cases for the import of drawings, documentation etc. In deciding the reasonableness of lump-sum payments, consideration is given to the value of production, so that by themselves or together with royalties, if any, they form an acceptable proportion of the value of production. Lump-sum payments are invariably expressed in Indian rupees.

In practice, lump-sum payments do figure in most collaboration agreements in India. Up to 1967, 1,164 agreements did not specify lump-sum payments as against

1,608 agreements that did. In 887 of the 1,608 agreements, there was no provision for royalties. In the rest, royalties at various rates up to 5 per cent were payable in addition to the lump sum.

In India and in other countries, royalties are usually calculated on the basis of the ex-factory selling price of the product and, occasionally in terms of physical units of production with the landed cost of imported components deducted. The aim of such calculations is to see that the supplier of technology does not obtain the benefit of a royalty with respect to items he has not helped to manufacture indigenously. Clauses for a minimum guaranteed royalty are not generally permitted in India.

In the Republic of Korea, there are no specific or explicit guidelines on the admissibility of lump-sum payments in addition to royalties. An analysis of the 327 agreements concluded up to 1972, however, shows that, in 47, lump-sum payments alone were involved and, in 78, lump-sum and royalty payments were combined. The rest, that is to say, the majority, did not specify lump-sum payments at all.

In the Philippines, the Board of Investments prefers royalties to lump-sum payments. The Central Bank does not generally permit lump-sum payments. Where such payments are permitted, they are to be set off against future royalties.

In Indonesia, royalties are also preferred to lump sums, but in the context of the freedom of foreign-exchange remittances, it is difficult to say whether this preference affects actual practice.

In Thailand, fewer remittances were made in 1972 in the form of lump-sum payments than in the form of royalties. Royalties were generally calculated in terms of the sales value and, in some cases, of value added. Technical assistance fees were either calculated as a percentage or paid as a lump sum. It is not, however, possible to generalize on the experience of Thailand in the absence of adequate data.

Exclusivity

Almost every initial licensee taking a licence in a given country from a licensor asks for an exclusive licence, that is, that the market in that country will be left exclusively to the licensee and that the licensor will not operate there either. If patents are involved, the request usually means an exclusive licence under the patents; if not, the request is not that the licensor will supply his know-how to no one else for a defined number of years.

The licensor, however, is invariably reluctant to grant an exclusive licence. The case for the licensee and that for the licensor are well recognized, and the question is what kind of compromise can be reached. Some fairly well-defined and generally acceptable possibilities are set out below.

If the project is entirely new, for example, to produce a new product, the case for the licensee is evident. He assumes the risk that the market will not develop at all or that the process for making the product will run into difficulties. His view is that if he takes the risks he should reap the reward and not find it diluted by a subsequent licensee who can benefit from the success of the first licensee without accepting the same risk. The case for the licensor is that by giving an exclusive licence he puts all his eggs into one basket, and if the licensee fails to succeed through ineptitude or even through a diminishing urge to invest, the returns to the licensor can disappear through no fault of his own.

If the product is a conventional one with an existing market, so that the licensee will encounter competition in any event, and all that is offered is a new and

improved process for its manufacture, the licensor cannot be expected to grant exclusivity. The protection to the licensee must then be in the form of a guarantee from the licensor that his process is what he claims it to be. In such circumstances, many companies in the developed countries offer their processes to all comers, and exclusivity is ruled out.

In instances less defined, with perhaps a new type of product that may not prove to have a market after all, two approaches that in Western Europe are often found acceptable to both licensor and licensee may be followed.

The first approach is possible when the licensor is prepared to grant an exclusive licence, perhaps because he feels that there is room for only one manufacturer in the market in question. In these circumstances, if the licensee wants exclusivity, he can have it if he agrees to guarantee a return to the licensor. This return is usually expressed in the form of a guaranteed minimum yearly royalty, which becomes academic if the actual royalties are higher, but becomes the payment for exclusivity if they are not. Logically it might be said that any exclusive licence demands a guaranteed minimum yearly royalty or something of the sort for the above-mentioned reasons, and notably because the reward to the licensor then depends solely on his return from the exclusive licensee. Of course, the guaranteed minimum yearly royalty could take the form of a down payment.

A variant of the approach described above is to permit the licensee at any time to avoid the minimum yearly royalty by giving up the exclusivity. This provision is a protection to a licensee who later finds he has over-estimated the potential of the market, but a disadvantage to a licensor, who is thereby prevented from developing his licensing system at the early stage when the future might have looked most promising. It is in this sense a balance of judgement; the licensor may enjoy a guaranteed royalty payment for a certain period even though his process fails to show the promise he had expected.

The second approach is for the licensor to give the licensee exclusivity for a brief period—perhaps two years—to give him the possibility of establishing himself in the market before a second licensee can emerge. He is then left to his own devices to hold the market he has already established, which certainly gives him a considerable advantage. This procedure is sometimes more acceptable to a licensor in a developed country than the minimum royalty system, for it gives the licensor the advantage of promoting his licensee without the disadvantages referred to above.

It is to be noted that there is a tendency in some official circles to suspect that exclusive licences may prevent competition. Thus, the EEC Commission appears to hold the view that some exclusive licences may be contrary to the Treaty of Rome.

In one situation a licence in a given country must nearly always be exclusive, and that is when the product has become identified by means of a trade mark or in some analogous way with a single source of supply. This situation may arise with, perhaps, a special design of refrigerator or washing machine, though in such instances the originator is more likely to start to manufacture himself than to license. In the event of licensing, however, to have more than one licensee would mean more than one source of supply of a product presumed to have a single defined source, which might lead to great confusion.

In a developing country with limited markets, the local manufacturer invariably seeks to ensure exclusivity of the technology. In most developing countries there are no guidelines on the subject, and it is felt that exclusivity is a matter of negotiations between the two parties. In India, however, the insistence on a sublicensing clause

means that the seller of technology is obligated to permit the transfer of know-how to other Indian parties. This obligation implies, as well, that the first importer of technology cannot insist on keeping it exclusive. The extent to which the sublicensing clause will affect exclusivity is, however, within the control of the original seller and buyer of technology, since sublicensing can take place only on terms to be mutually agreed upon by all the parties.

As regards the earlier position in India, a survey of agreements concluded up to 1964 showed that 92 out of 144 agreements relating to foreign subsidiaries, 357 out of 445 agreements relating to ventures with minority capital participation and 292 out of 462 agreements relating to cases of purely technical collaboration contained clauses providing for exclusive rights for the Indian companies. The proportion of agreements with exclusive rights was lower in the purely technical group mainly because of the predominance of non-exclusive agreements in textiles. In the case of subsidiaries, specific clauses relating to exclusivity are not so important, since the parent company can be expected to secure the interest of the subsidiaries. Exclusive agreements were particularly noticeable in the chemical, machinery and machine tools, transport equipment, electrical goods and metal-products industries. They were least noticeable in the textile industry. The survey also brought out that unpatented know-how was an important constituent of the agreements entered into by over 90 per cent of the companies.

In recent years, when several Indian manufacturers have sought collaboration at the same time, the Government has sometimes tried to see that the same foreign collaborator supplies technology to more than one party on reasonable terms. Technology for automobile tires, dry batteries and storage batteries has been imported on this basis.

Guarantees

The most difficult question in the whole of licensing is that of guarantees from the licensor to the licensee, and no complete solution to the problem has ever been devised, so that any course followed must be a compromise.

To see this problem clearly, it is necessary to consider the nature of a licence agreement, assuming good faith between the parties, which is indeed assumed throughout this study. In the agreement, the licensor claims to have in his possession certain technology that will achieve the defined result at a certain cost, by which is meant a certain consumption of raw materials, a certain yield of product and a certain expenditure on plant. On this basis the licensee then commits himself to an investment that may be substantial and almost certainly much greater than any return the licensor is likely to obtain as a result of the licence. If it proves that the plant does not function as stated, or costs so much more that the licensee might even suffer a loss, the licence has, in fact, been taken under a misapprehension. The only full compensation the licensor could give to meet such a situation would be to reimburse the licensee for his investment, to give him his invested money back. No licensor would accept such a commitment, and an insistence on it would bring licensing to an end.

Hence, some solution has to be found to meet the situation arising when the licensor's guarantees are not met. It is here that the difficulty arises, for any practicable penalty the licensor would have to pay might be very costly from his point of view and yet provide little compensation to the licensee.

The best approach for the licensee is to make himself as certain as he can reasonably be that the claims of the licensor are correct and then to accept the situation as a business risk. If the licensor has a plant in operation, some kind of inspection may be possible before the licensee takes the licence (in which case "hold-confidential criteria" come into play, which are referred to later). Or, if the licensor has other licensees working satisfactorily, it may be possible for the potential licensee to be given access to these other plants. It must be recognized that if the licensor does not have a commercial plant himself, or is a company concerned entirely with licensing and relying on laboratory results and perhaps a pilot plant operation, the first licensee assumes an element of risk. In such cases, it is not uncommon for the first licensee to be given preferential licensing terms as a compensation for the risk he takes.

The reputation of the licensor is also significant. Years ago, one successful licensing company used to say that the best guarantee it had to offer was that every plant it had erected had met its guarantee. Much can be said for this approach to the difficulty. It must also be recognized that if a company embarks on a new project based on its own experimentation, there is no guarantee at all.

Nevertheless, the most successful licensor with the greatest integrity can run into difficulties. There may be variants of the circumstances that cannot be foreseen. The climatic or other conditions under which the licensee operates may cause disturbances that are quite unknown to either the licensor or the licensee. A raw material obtained to a specification may contain an impurity never before encountered. Accordingly, contingencies should be provided for.

The licensor can be expected to set down results that he feels he can guarantee, and many licensors are conservative in this connexion, so that the actual plant operates more efficiently than the licensor has guaranteed it will. It is almost certain, in Western Europe at any rate, that many more plants substantially exceed the guarantee figures than fail to meet them. The cautiousness of the licensor is perhaps the greatest safeguard to the licensee, who, when dealing with a reputable licensor, can assume that the guarantee will be met. There is usually a teething period while the plant is being brought to full efficiency, but this is recognized as natural.

But if, in the final analysis, there is a gap between the guarantee and the performance, what is to be done? It is here that a compromise is necessary, and though the problems encountered in practice are less severe than might be thought from this discussion, the compromise should be defined in the licence agreement.

Among the various solutions that have been adopted from time to time are the following:

(a) The licensor has to forgo royalty payments until the guarantee is met and is usually under an obligation to assist the licensee until it is met;

(b) The licensor can be required to carry out experimentation, and, if necessary, to redesign the plant to meet the guarantee. In this event, the question arises who is to pay for the engineering work to be done in modifying the plant. One variant is to provide for the licensor to undertake the investigations without charge, but for the licensee to be liable for any further construction as part of his reasonable investment. Another variant is to provide for the royalties to be paid in spite of the failure of the guarantee, but for the licensor to be obliged to spend up to the total of the paid royalties in modifying the plant. A licensor, probably rather sure that the guarantee will be met at the time he grants the licence, may be prepared to accept some such conditions. On the other hand, it is difficult or impossible to bind the licensor to

commit himself to expenditure actually greater than the return he receives from the licensee, so that the very act of licensing gives rise to a loss.

As will be seen, it is necessary to compromise, and it is reassuring that, as mentioned above, the difficulties can usually be overcome.

As already mentioned, it may be important to a prospective licensee to be able to see a plant in operation before he commits himself to a licence. In this event, the licensor needs to be protected if he discloses at least some of his confidential know-how and the client fails to take a licence after all. The usual formula is that the prospective licensee undertakes not to disclose or utilize any information he acquires. In practice, the licensor probably does not need to disclose all his information, but only enough to give the necessary initial reassurance. Such a partial disclosure is often referred to as a "look-see", a term well understood in developed industry.

Among the informed companies in the developed world, and certainly in Western Europe, some solution is invariably found without great difficulty from among the many possibilities. The arrangements are specified in the licence agreement, and, in most cases, prove to be academic and probably understood fully only by the negotiators. Thus, the expertise of the negotiators is critical in licensing, and especially so in the developing countries.

Export markets

An issue in any licence agreement is that of the markets in which the licensee can sell the product or articles he manufactures under the licence, that is, whether he is entitled to export, and, if so, to which markets. This problem is of special concern to the developing countries, for they need to build up an export market; but it is of equal importance in the developed countries, too.

The guidelines in India provide that export restrictions will not be permitted except for valid reasons. Valid reasons could exist if the licensor or another of his licensees has an exclusive right to the markets of certain other countries. In Indonesia, the Republic of Korea and Thailand, no specific policy has been announced regarding the undesirability of export restrictions, but this aspect would appear to be under increasing scrutiny in the Philippines. In Western Europe, probably most licences place no limitation on exports unless patents are concerned (a matter dealt with below). However, because the problem of export markets is complicated, the three quite different approaches to it are outlined below.

If a licensor is a manufacturer of the product himself, as is usually the case, by granting alicence he creates a competitor. If he is not a manufacturer, and is for the purpose simply a licensor, he creates a competitor for his other licensees. It is, therefore, not surprising that he is likely to look critically at the possible markets of his licensees. It must be appreciated that if there are no limits on the right of each licensee to export, the consequence to any licensee may be that his home market also is open to other licensees. The merits of the situation need to be considered objectively from the point of view of both licensor and licensee. The fear of a licensor that his licensee may compete with him in his own market may be a restraint on his willingness to license at all.

Nevertheless, the whole climate in Western Europe (and indeed elsewhere in the world) is to open up markets, and hence restrictions on exports are coming to be out of keeping with modern conditions. Furthermore, the antitrust laws of some countries are coming to prevent such restrictions. If such laws make limitation on

exports impossible, the problem is solved automatically, and the licensor needs to decide on whether to license and accept the situation or not to license at all. In most of Western Europe, the EEC rules are now the determining factor, though the precise rules in this particular matter are at the moment obscure. The Commission is in the process of defining the position. It is becoming increasingly doubtful whether a licence in one EEC country that purports (except where patents are involved) to prevent exports to other EEC countries will meet with favour from the Commission.

A very special situation—now in a state of flux—arises where patents are involved. In principle, a patent in any country is the grant of an exclusive right in that country for the limited period of the patent, and the patentee is *prima facie* entitled to deal with this exclusive right in his own way during this period. Therefore, it is widely felt among the industries of Western Europe that if a licensor grants a licence on his technology, then regardless of any entitlement the licensee may have to export to countries where the licensor has no patent protection, the licensor is entitled to reserve the markets in the countries where he does in fact have patents. In short, the licensee needs to have a specific licence under the patent in any given country to be able to sell in that country. In such a case, the licence agreement will specify the patent countries in which the licensee has a licence to sell.

A well-recognized principle in Western Europe is that a licensee has to await the expiration of the patents before he has full freedom to export. Where large-scale production has been involved, such a restriction has sometimes been necessary in that the licensee might have found it impossible to make a very large capital investment if he had not been protected from competition from outside his own country. It will be appreciated, in any event, that an exclusive manufacturing licence, perhaps essential in such a case, means little if the market in his own country is open to others as well as nimself. This case may demonstrate the validity of the time-honoured principle that the purpose of patents is to encourage industry.

A situation is arising where once a licensee in one EEC country sells in his own country, his customers may be entitled to export to all other EEC countries, regardless of the existence of the licensor's patents. In some circles it is held that this is the law in the Community already; in other circles, this view is strongly opposed.

As for the future, all the signs point to a continuing erosion of patent rights. Whether this erosion is of advantage to industry or to countries in the long run is a matter for debate. Some are of the opinion that if, ultimately, patent rights are eroded to the point where they are of marginal value to innovating companies, the result may be that new technology will be kept secret instead of being patented, which would deplete the technical knowledge available in the world.

The attitude a company in Western Europe will adopt towards taking a licence will almost certainly be influenced by financial and commercial considerations. In evaluating a project, the size of the market, the market price and the cost of production are the prime factors. The size of the market needs to be assessed whether the market is restricted to the company's own country—either for practical or contractual reasons—or extends to other countries, too. If it is not large enough, the company will not go ahead with the project and will not take the licence. If, therefore, a patent situation restricts the market, an extra benefit occurs when the patents eventually run out and the market is extended. This situation may both

encourage the licensor to make the initial market of the licensee large enough and provide an ultimate extra benefit to the licensee, even though the licensee would certainly have preferred to have the full benefit come sooner.

Continuing assistance and grant-back rights

A special issue of much importance in many licensing arrangements is whether the licence should stipulate that the licensor will continue to provide know-how and assistance to the licensee, perhaps throughout the period of the royalty payments. In some instances, where the basic know-how of the licence concerns one specific operation (a licence to drill an oil well may be thought completed when the well has been drilled), provision for continuing know-how would certainly be unnecessary. Where, however, equipment of intricate technical design is in question, or a manufacturing process of high technological content, the need for the licensee to keep his technology up to date may be vital. He may, of course, decide to embark on his own research for the purpose without reference to the licensor, but frequently he looks to the licensor to keep him informed on future developments. In such a case, the assistance must be paid for, and a licence providing for continuing know-how may demand a higher royalty than one without such a provision. In any event, the licensee must ensure that his process does not become outdated owing to a failure to provide for improvements in the future, for technology does not stand still and competition may become worse.

The licensee may elect to continue on his own rather than purchase continuing know-how. For example, the licensor and licensee may be in competition and the licensee prefers to rely on his own advances rather than follow his licensor-competitor. In this event, there will be a cut-off date after which the licensor will supply no further information or assistance. Logically, the date the plant is erected and working properly should be acceptable as the cut-off date.

If, however, continuing know-how is to be provided for in the licence agreement, industry in developed countries recognizes that certain important considerations must be taken into account. These are discussed below.

As far as process technology is concerned, it is almost impossible for a licensor to give continuing assistance, and, in a sense, to service the plant of the licensee, unless he knows exactly what is happening in the licensee's plant. Indeed, he may need to have full access to the licensee's plant and be given it with enthusiasm. In this event, what is the situation if the licensee, in fact, makes advances of his own, which thereby come to the notice of the licensor? The licensor may have other licensees to service, too, and may have his own plant for that matter, and he cannot be put in the position of knowing about these advances yet being expected to ignore them when he comes to deal with his own plant or that of another licensee. Hence, a continuing know-how arrangement may need to include the provision that the licensee grants back to the licensor a licence on the improvements he has made, and it is sometimes felt that this should be an exclusive licence to safeguard the business of the licensor. It is not uncommon for a licensor to say that continuing assistance must, for the above reasons, involve such grant-back rights as of necessity, and that if the licensee disagrees, then it is better for the licensor not to know about any advances of the licensee and hence the idea of continuing assistance will be dropped. The licensee then has to elect one course or the other, depending on the circumstances.

This question of grant-back rights constantly raises strong feelings in significant circles where, perhaps, the application of research in industry is not fully understood.

It is probably safe to say that the licensee only seldom makes any advance of importance, for he is likely to be looking to the licensor, so that the point can be quite academic and only raised as a safeguard to the licensor. Yet, among the developing countries the proposal is sometimes regarded as unfair to the licensee, though it may really be to his advantage in removing any hesitations of the licensor. Furthermore, even in EEC it has been ruled that in some instances, at least, an exclusive grant-back obligation is contrary to the Treaty of Rome.

In industry in Western Europe the matter is well understood. The most commonly acceptable solution is probably for the licensee to grant a non-exclusive licence on any improvements to the licensor, with the right to sublicense other licensees. The technical scope of such a licence needs to be carefully defined; it would not, of course, cover some extraneous advance that the licensor happened to have seen in the premises of the licensee.

A particular solution to the above problem, which has found favour in some instances, is to create a "licensing pool". If the licensor has several licensees on the same process, perhaps in different countries, he may offer each licensee the opportunity of joining a licensing pool made up of the licensor and each of the licensees accepting the offer; all parties would make their advances available to all the others in the pool. In this way, the technical content of the process may advance from year to year through the collective contributions, to the advantage of all members of the group. Variants of this approach, which is essentially an exchange of information, will be readily apparent.

A question sometimes raised is whether a continuing know-how arrangement, or a grant-back provision, is equitable if a really major advance is made by one party or the other at the very end of the period in question. Thus, the licensor might be required to pass a new development to his licensee in perhaps the very last month of the royalty period, and thereby would receive no real return for it at all. How frequently such late and major advances in fact occur may be open to doubt, but one solution sometimes adopted is to terminate the continuing know-how period perhaps two years before termination of the royalties. Another is to provide that after the basic royalties cease, a continuing licence will be negotiated at a reduced royalty under any new patents the licensor takes out though this is a highly technical matter that can be dealt with only with the guidance of an expert on patents.

Hold-confidential position

Virtually all know-how licences involve the passage of confidential data from licensor to licensee. It is accordingly inherent in such licences that the licensee will hold the information confidential and not disclose it to others. This is a formal condition that can never be refused if the licence is to become a reality. The term "secret process", which is sometimes used, is a misnomer. The general nature of the process may be well known to everyone in the industry, but the specific design of the licensed plant is clearly a confidential matter.

The parties must agree from the beginning on the period the licensee is obliged to hold the information confidential. This issue seldom raises much difficulty. Periods of 10 or 15 years are normal. For that matter, it will probably be in the interests of the licensee to keep the data confidential for much longer, or even indefinitely.

However, for licensees who have a good potential for redeveloping the technology, the obligations to keep the information secret can be a marked disadvantage because the licensee cannot divulge the results of his redevelopment until the five years or other specified time has passed after the termination of the agreement.

The obligation for secrecy also goes with the so-called option agreement. Parties entering into an option agreement should always insist on inclusion in the agreement of provisions stipulating that they will not be bound by the non-disclosure obligation in regard to the information that *(a)* has been known to the licensee prior to his receiving information from the licensor; *(b)* is or will become public knowledge; and *(c)* he may obtain from a third party who has the right to disclose such information.

Right to use the technology

Agreements should clearly indicate that the licensee has full rights to use the licensed technology when the licensee has fulfilled his obligations and the agreement expires. Otherwise, the licensor may claim additional payment through a renewal of the agreement or may attempt to prohibit the licensee from continuing to use the technology.

Trade marks

Licensors may prohibit the use of their trade marks by the licensee. Generally, if use of a trade mark is granted, the licensor charges a fee and also requires the licensee to maintain specified standards of product quality.

V. Considerations when licensing in a developing country

Routes of technology transfer

Basically, developing countries want technologies evolved in the developed countries or in the more advanced of the developing countries. Technology transfer has been taking place at various levels and in various ways throughout the world. The main routes through which technology is transferred can be listed as follows:

(a) A company in a developed country possessing the required technology may establish a unit in a developing country. The entire capital and technological resources required for the purpose will be brought by the company from the developed country to the developing country. The unit can be a subsidiary of the parent company or even an independent entity, completely controlled by the parent corporation. Nationals of the developing country participate in this venture to the extent of providing infrastructure, unskilled labour and protection to the investment. The benefits derived are also shared according to the inputs made by the respective participants. The bulk of the labour employed in such a unit may be from the developing country where the unit is located. However, the management will be entirely in the hands of the investors;

(b) A company in a developed country may take as a partner an organization in the developing country and establish a unit in the developing country for manufacturing a product. In this joint effort between the organization in the developed country and the organization in the developing country, nationals of the developing country provide the necessary infrastructure and also the labour and protection for the investment. Nationals of the developing country participate in the management of such a venture;

(c) An organization in a developing country can buy technology and technical and engineering services from a company in a developed country on a turn-key basis for the establishment of a plant. This company will not have any financial stake in the venture. The technological and other services it is to render will be paid for by the organization in the developing country. The engineers, scientists and managers of the company in the developed country will provide the complete know-how, engineering drawings and detailed plans; assistance in procuring the equipment and in starting up the plant; and training of local personnel in the operation of the plant. Sometimes the company will lend some of its staff for extended periods until local staff are in a position to take over the management of the plant;

(d) Under certain circumstances, the Government of a developed country can make technology available to a developing country on a government-to-government basis on terms that may be less onerous than terms negotiated between two private organizations. Such help could be for establishing significant infrastructure such as dams or power stations, establishing or improving public health services, or

developing the food industry—projects that directly affect the lives of the population. In such cases, the Government of the developed country may engage one or more domestic companies for this purpose, but the negotiations for parting with this technology and the services are conducted under the auspices of the donor and receiving Governments;

(e) A developing country itself may have developed the basic technology but may not be able to do the detailed engineering or to produce the equipment necessary for the establishment of a unit for manufacturing the goods based on this technology. In this case, the developing country may negotiate with an engineering firm in a developed country for its services, namely, detailed engineering of the process, the purchase of the equipment and the establishment of the unit;

(f) When the infrastructure and the technical capabilities in the developing country are at a fairly high level, the help required from a developed country may be quite small. It may be no more than having an organization look over the detailed engineering drawings and plans already prepared by the institutions functioning in the developing country.

Depending upon the degree of industrialization in the developing country, the transfer of technology takes place in one or more of the ways described above. However, several practical problems are connected with each of these systems of transfer, and these difficulties are reflected in the foreign licence agreements.

Guidelines for technology transfer

In any legal relationship, the respective rights and obligations of the parties should be clearly defined. International licence agreements pose special challenges in this regard, since they involve parties of different nationalities, frequently separated by thousands of miles, and they are usually intended to cover performance over several years.

When the licensee is an enterprise in a developing country, additional factors have to be taken into account. First, many types of services—banking, insurance, transportation, communications and distribution networks—are likely to be much simpler than they are in commercially advanced countries. Climatic conditions may have an important effect. Cultural traditions in the country of the recipient should also be sensitively appreciated.

Prospective licensors should, in addition, be keenly aware of certain attitudes that are now becoming established as the basis of policies in many developing countries. As recently as 10 years ago, licensors were virtually unrestrained in their dealings with enterprises in these countries. Antitrust laws, which must always be considered when licensing in the United States and which have just been introduced in the European Economic Community, were unknown in the developing countries. In these countries enterprises seeking new technology were inexperienced and frequently over-ambitious about the types of projects they could effectively handle. Thus, deals were often made that were unfavourable to the licensee and were ill-designed to succeed in the recipient countries.

A new breed of technocrats in many developing countries has done much to right old imbalances. They have been educated in the antitrust doctrines of the West and, therefore, frown upon attempts by licensors:

(a) To fix prices at which the licensee can sell the licensed products or goods made with a licensed process;

(b) To impose tying clauses forcing licensees to purchase from the licensor unpatented raw materials that are freely available elsewhere;

(c) To oblige the licensee to acquire certain technology, already freely available in the recipient country, as part of the larger package;

(d) To require a licensee to use trade marks of the licensor under conditions that do not enhance the licensee's chances of succeeding in the local market;

(e) To insulate the licensee from reasonable export markets;

(f) To charge a royalty or otherwise provide for remuneration to the licensor that is unreasonably high in the circumstances.

Prohibitions against these practices have been incorporated into 'egislation that has been adopted, in varying forms, by many countries, including the member countries of the Andean Group and Argentina, Brazil, India and Mexico. Procedures have been established for examining both existing and new agreements in the light of established criteria. The regulations cover licences between unrelated parties and technology transfers to joint ventures and to controlled subsidiaries. In most cases, these procedures have required the organization and staffing of new government administrative bodies or the substantial reinforcement of old ones.

A few principles to be followed in the transfer of technology may be suggested:

(a) The technology to be provided should be appropriate to conditions in the developing country. In some cases, this would mean that the latest and most advanced version should be provided; in others, simpler or more labour-intensive versions would be more suitable;

(b) The proprietor should be obliged and capable of providing the needed training of key personnel in the developing country. Some of this training may be given at the headquarters of the proprietor, where the trainee can better appreciate the scope of what is involved. Probably the greater part of such training, however, should take place in the host country, where the proprietor's instructors can see, at first hand, the best way in which the licensed technology can be adapted to local conditions;

(c) The licensed technology should utilize, as much as possible, local resources, including raw materials, labour skills and supervisory personnel;

(d) The activity should make a contribution to the economy of the host country that is greater than mere import substitution. Thus, the possibility of producing exports that will earn a substantial amount of foreign exchange should be a goal. Realistically, the desire to export should be tempered by an appreciation that the proprietor may have existing interests in some of the potential export markets that he would not wish disturbed;

(e) Importing the licensed technology should have some positive side effects, such as encouraging the growth of certain local supporting or supplying industries.

On the other hand, such technology should not tend to destroy any cultural, historical or ecological situation existing in the country that should be preserved.

Licence agreements with organizations and enterprises in developing countries should contain provisions that can accomplish the transfer of technology efficiently and without creating areas of uncertainty that can become bases for future disagreements. Even if the recipient entity is a joint venture, partially owned by the proprietor, it is wise to define clearly the conditions of the technology transfer in a formal agreement. The points discussed below should be covered.

Define the technology

The parties should be clear about the information to which the recipient is entitled. The agreement should indicate whether everything the proprietor owns in a specific field is included or only certain versions or embodiments thereof, and also what rights (if any) the recipient may have to improvements or additions to the technology that become available to the proprietor in the future.

Describe the territory and the degree of exclusivity

If the recipient assumes (as is usual) that his rights are to be exclusive in his home country, it should be appreciated that other licensees of the same proprietor will require the same arrangement. Nevertheless, some reasonable provision regarding export territory can usually be worked out. One formula is for the recipient to permit the proprietor to "co-ordinate" export sales. Another approach, more favourable to the recipient, is to permit export anywhere except to countries in which the proprietor has granted, or may grant, exclusive rights to a third party.

Provide thoroughly for the technology transfer and training

A crucial provision of a licence that frequently is not emphasized enough concerns the actual transfer of the technology and training in its use. Several points to be considered in this connexion are:

(a) Planning, construction, plant layout and start-up of production facilities. Should this aspect of the work be a turn-key operation? Can the recipient or other local interests appropriately participate in it? Have reasonable deadlines and performance guarantees been provided?

(b) Provision of blueprints, operating manuals and other necessary production and marketing information. These materials should be delivered promptly and perhaps be provided in several versions, designed for persons at different levels of responsibility;

(c) Procedures for thorough and perhaps extended training. The training might be given first to a cadre of supervisors and then extended to include all other key elements of the work force;

(d) Support from the proprietor. The proprietor should maintain back-up capability for a substantial period to solve problems that may arise during the early

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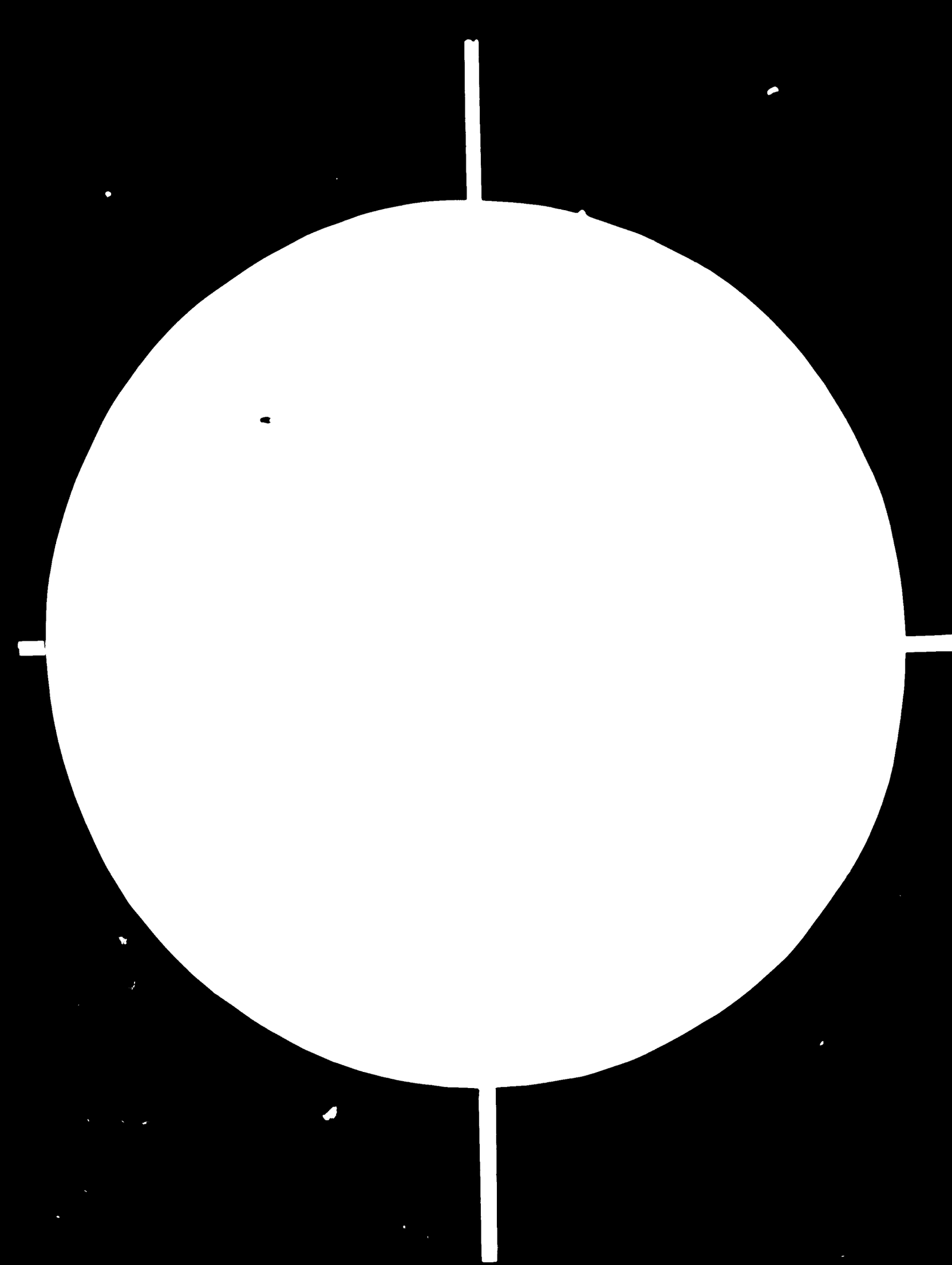

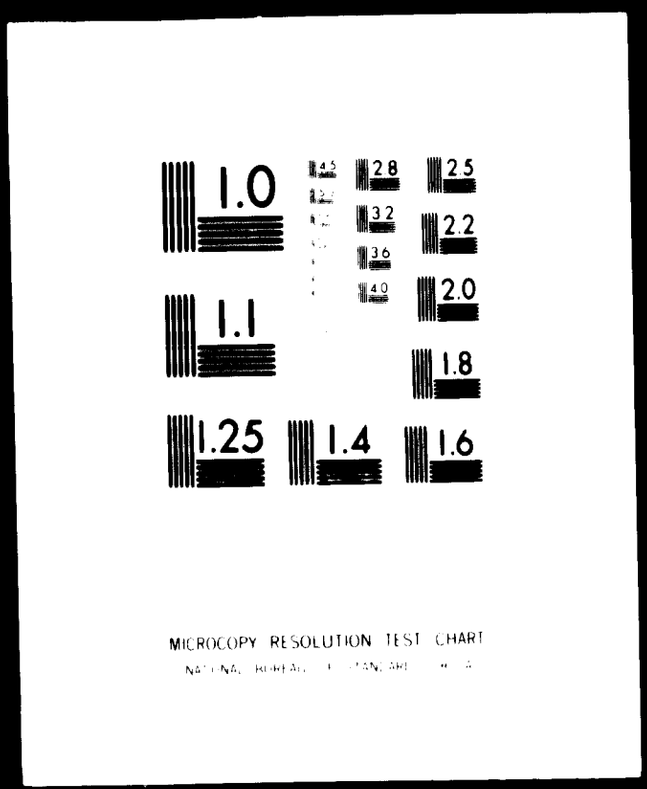

phases of operation. He might even be required to have representatives present at strategy meetings held at the premises of the recipient.

Tailor production to capabilities and needs

It may be that the best way to proceed at the outset is to assemble knocked-down kits, or to repackage from bulk, rather than to begin total manufacture of items covered by the transferred technology. Or, the recipient may produce only the models that are most needed locally and perhaps import the rest. At the outset, the licensee should focus his efforts on the areas of greatest priority, with the understanding that activities should then expand consistent with growing needs and capability.

Install strict quality control procedures

One of the most valuable assets of any producer is a reputation for high quality, and a negative image in this connexion is hard to live down. The fact that Japanese producers were able to acquire a reputation for excellence was one of the principal reasons for the rapid international acceptance of Japanese goods. Developing countries should be aware of the importance of quality, both for goods intended for domestic consumption and for exports.

Provide for a local research and development programme

Employees of companies receiving technology, aware of local conditions, frequently have good ideas for applications that can have value locally and perhaps also in other countries. Work on such projects can also create good licensee morale and increased commitment, particularly if those responsible for valuable improvements are rewarded generously.

Establish effective reporting requirements

The lines of communication between the parties should be strong and open for best results. The licensee should be required to report to the proprietor periodically–perhaps monthly, and no less than quarterly–describing sales and remuneration owing, marketing efforts and the status of any research being undertaken. The reporting may be in accordance with a mutually agreed upon format, which would make it possible to compare later reports with earlier ones from the same licensee, and to measure his performance against that of third parties who are licensees of the same proprietor in other areas. The degree to which these reports are truly informative often has a direct effect upon the value of the continuing support a proprietor can give his licensee.

Obtain prompt approval (and, if possible, active support) from the Government of the host country

The licensee should take the lead in "selling" the transaction to his Government. Indeed, it is usually advisable to inform the Government of the proposed terms of the agreement to obtain provisional approval even before it is finalized. The speed and efficiency with which this approval can be obtained can have a direct bearing on the continued enthusiasm of the proprietor. Nothing is better calculated to spoil a budding relationship than long delays and renegotiations with the host Government because the recipient has failed to prepare the ground thoroughly.

Summary

All the foregoing provisions are usually included in licensing arrangements between parties who are both located in developed countries. These provisions have been singled out for special comment here, however, since they are not only particularly important when the licensee is located in a developing country, but also because the procedures often need to be expanded to promote a good relationship between licensor and licensee. Other contractual provisions commonly included in licences apply equally to both environments. For the sake of completeness, these are listed as follows:

(a) The licensee is bound to keep confidential the trade secrets and other information outside the public domain made available under the arrangement;

(b) If trade marks are involved, procedures for marking legends, quality controls by the proprietor and packaging procedures should be established. Patent notices should also be affixed where patent licences are granted;

(c) The possibility of infringements of the licensed technology, either by the licensee or by a third party, should be anticipated and the respective responsibilities of the parties established;

(d) The basis of remuneration should be clearly defined, as should procedures for prompt payment;

(e) The period of the agreement, as well as possibilities for renewals or extensions, should be specified. Rights upon termination should also be set forth;

(f) In the event of defined breaches of the agreement, remedies should be clearly stipulated, including the possibility of arbitration if the parties prefer;

(g) A variety of standard clauses can be inserted to cover several possible problems. Usually the licensor will try to include the following:

> Should the agreement be terminated by the licensor for any reasons specified herein, the licensee shall not be able to claim from the licensor any damages or compensations for losses, or expenses incurred, or for lost profits.
>
> Termination of the agreement for any reason shall not affect *(a)* obligations, including the payment of any fees, which have accured as of the date of termination, or *(b)* those obligations which, from the context of the agreement, are intended to survive its termination.
>
> Neither party shall be in default hereunder by reason of its delay in the performance of or failure to perform any of its obligations hereunder if such delay or failure is caused by strikes, acts of God, or the public enemy, riots, incendiaries, interference by civil or

military authorities, compliance with Governmental laws, rules and regulations, delays in transit or delivery, inability to secure necessary Governmental priorities for materials, or any fault beyond its control or without its fault or negligence.

Any waiver by either party of a breach of any term or condition of this agreement shall not be considered as a waiver of any subsequent breach of the same or any other term or condition hereof.

This agreement contains all the understandings and representations between the parties relating to the matters referred to herein, supersedes any agreement previously entered into between them with respect thereto, and may be amended only by a written supplement, duly executed on behalf of the respective parties.

If any provision of this agreement is declared void or unenforceable by any judicial or administrative authority, this will not *ipso facto* nullify the remaining provisions of this agreement unless the licensor, in its discretion, decides that such declaration goes to the heart of this agreement, in which event this agreement shall terminate on thirty (30) days' written notice from the licensor to the licensee.

Some or all of these clauses are usually found to be appropriate by the parties to avoid possible misunderstandings.

Technology licensing in four developing countries

India

Many foreign collaboration agreements, possibly well over 2,000, have been signed in India in the last 27 years. Not all of these agreements have benefited the country. Some agreements prohibit export of manufactured products to certain countries. Some contain secrecy clauses that prevent even Indian nationals, not necessarily competitors, from visiting the factories of licensees. Clauses of some agreements greatly restrict the freedom of the local personnel with regard to the utilization of raw materials, components or the final design of the product.

Over a period of time, the disadvantages of such terms in foreign collaboration agreements have become apparent. The country itself has built an impressive pool of trained, scientific and technical manpower, well-equipped research and development institutions, consulting engineering organizations, and facilities for the manufacture of equipment. With these facilities available, India can now negotiate more equitable foreign licence agreements than formerly. The National Committee on Science and Technology of the Government appointed a committee to suggest new guidelines for foreign collaboration agreements. This committee has studied various licence agreements that have been entered into and submitted a report to the Govemment, but the Govemment has yet to act on this report.

Generally speaking, the current guidelines for foreign licence agreements in India are as follows:

(a) Technology available in the country should not be imported;

(b) If possible, technology should be paid for by a fixed sum. Equity participation should not be encouraged, except under special circumstances;

(c) The technical fee should be reasonable;

(d) Normally, royalties, if any, should be for not more than five years and should not exceed 5 per cent of the sales value of the product;

(e) The importer of technology should be required to become associated with one of the national research and development institutions so that, at the end of the period of the licence agreement, the country may be self-reliant with regard to the technology;

(f) As far as possible, there should be no restrictive clauses with regard to sublicensing and export of goods made under the licence agreement;

(g) Whenever substantial exports are involved, some of the above-listed clauses may be relaxed, since one of the important objectives of the Government is to encourage exports to meet its increasing need for foreign exchange;

(h) Should special circumstances arise, such as agreements concerning sophisticated technology, special exceptions to the guidelines may be made.

The procedure for processing licence agreements is laid down in detail. The Ministry of Industrial Development is the agency through which all the licence agreements are handled. The Ministry has a Secretariat of Industrial Approvals and three committees the Licensing Committee, the Foreign Investment Board and the Project Approvals Board.

All applications for licences to establish an industry of a certain minimum value must be reviewed by these committees before the Government will issue a letter of intent to the industry. These committees represent various interests, such as the Department of Science and Technology, the administrative ministries concerned, organizations dealing with indigenous technology and organizations interested in exports. All the viewpoints are brought to bear on the item before a final decision is taken. Procedures have been streamlined in recent months to reduce administrative delays so that a decision can be reached within 90 days.

Republic of Korea

The Republic of Korea is currently striving to accomplish, by the 1980s, the ambitious goal of boosting the value of its annual exports to $10 billion and its annual *per capita* income to $1,000. The two consecutive Five-Year Economic Development Plans (1972-1976 and 1976-1980) are designed to lay a solid foundation for a self-sufficient economy and the further development of industry.

As of 1973, the approved direct foreign investment in the country amounted to $650 million for 849 projects. In the introduction of technical know-how, Japan accounted for 237 cases (70 per cent), the United States for 47 cases (22 per cent), and other countries for 26 cases (8 per cent).

The machinery industry accounted for 83 cases of foreign investment; the electronics-electric industry for 66, and the chemical industry for 66. These three industries accounted for 66 per cent of the total foreign technological investment.

One of the reasons for technology transfer to the Republic of Korea has been to stimulate import substitution to meet the great demand for consumer goods. Another has been to by-pass the tariff. The Government has placed a total embargo or high tariffs on goods that can be produced domestically. A good example is automobiles. Although assembled cars cannot be imported, a firm is permitted to bring in the parts, including complete engines, and assemble them in the country.

Technology transfer in packaged form

Industrialization has, so far, depended on technology transfer in packaged form, as in a turn-key contract. The transfer of unpackaged technology direct from the original supplier to the domestic user is comparatively rare because of a lack of industrial experience, corporate skills and indigenous consulting firms. The Government acknowledges, however, that, in the long term, too much dependence on foreign capital, machinery and materials will be obstacles to balanced growth, and, therefore, policies are directed towards encouraging a greater involvement of national research and development in adaptation and innovation.

The contribution of imported technology to exports has been limited because the major export items are products of light industries, such as textiles and plywood.

Licence agreements, with royalty payments based on sales, are extensively used; they may, at times, provide for an initial lump-sum and an annual minimum royalty.

Foreign investment

The amendment to the Foreign Capital Inducement Law is designed to encourage joint ventures rather than foreign ownership, though the former have existed in the Republic of Korea for some time. There has recently been an increase in the remittances of profits. Most of the large heavy industries in the country, such as petroleum refining, petrochemicals, fertilizers, automobiles and shipbuilding, have been financed through joint ventures. The Government encourages the use of domestic capital for the majority share of the equity in these ventures, but this is not always feasible in practice. Even when the total investment is evenly shared between domestic and foreign capital on paper, the actual operation, apparently, can be controlled by the foreign firm.

Loans from overseas savings

Designed to attain an annual average economic growth rate of 8.6 per cent, the Third Five-Year Economic Development Plan calls for a total investment of $11.3 billion, of which $8.9 billion is to be raised from domestic savings and the remaining $2.4 billion from overseas savings.

Like other developing countries, the Republic of Korea has been short of capital and unable to finance programmes designed to promote rapid economic growth through the use of domestic savings. For the past 10 years, during which the national economy grew remarkably, the country depended upon overseas savings for 9.7 per cent of its gross national product on an annual average. Loans from other countries and various international institutions made up about one half of its total overseas savings.

Adaptation of technology

Lack of adaptation capability hinders effective technology transfer. Where firms have considerable experience, as in textiles, direct buying of technology is feasible; but, in more complex and new industries, the package deal is often unavoidable, which results in a corresponding loss of control over the transfer operation and an inability to gain maximum benefits from it. The Ulsan shipyard seems to be exceptional in that, with the help of a small team of foreign technical consultants, it has been able to shop around the world for the individual items of technology considered necessary.

According to a recent survey of the Institute of Science and Technology, the country's chemical industry absorbs about 76 per cent of imported technology through efforts to understand the know-how and engineering knowledge of such technology. But the absorption, in this case, is of the knowledge necessary for operating and maintaining imported equipment and machinery, and not of the knowledge necessary for designing a process to improve the product quality. The survey revealed that no industry had developed indigenous technology from imported technology.

To improve this situation, government action to monitor technology agreements is being taken. The Ministry of Science and Technology recognizes that the acquisition and adaptation of foreign technology to ensure increased indigenous technological innovation should be among its major activities.

Pakistan

In Pakistan, licensing arrangements have been the usual mode of transfer of foreign technical know-how, as is shown by the large expenditure annually incurred on royalties. Up-to-date information on this count is not available. However, it can be observed that the average annual expenditure on royalties has been $2.5 million.

The most common licensing arrangements have concerned patents and trade marks. A sample study revealed that, among the companies importing foreign technology through various agreements, about 37.5 per cent had licences to use trade marks. An industry-wide summary is as follows (percentage):

Engineering	25.0
Machine tool	66.0
Chemical and fertilizer	23.5
Electrical	54.5
Pharmaceutical	85.7

Similarly, a licence to use patented know-how was obtained by 42.8 per cent of the technology-importing companies. The weighted average, by industry, is as follows (percentage):

Engineering	33.3
Machine tool	100.0
Chemical and fertilizer	33.3
Electrical	40.9
Pharmaceutical	42.3

This inflow through these two licensing arrangements has been mostly limited to a small number of individual enterprises and has failed to make an effective contribution to the technological experience of the country.

However, with increasing public control over private enterprises and government policies directed towards nationalization of important industries, foreign technology is beginning to be more widely disseminated. Already much technological experience has flowed from individual enterprises to such public-sector agencies as the Board of Industrial Management, the organization responsible for the management of nationalized industries, from where it will likely spread to the whole economy.

The distribution of licence agreements by industry is unbalanced. Too much emphasis has been placed on consumer goods with very little attention paid to intermediate and capital goods. In these arrangements, the industrialists have naturally been guided by personal motives rather than by the technological needs of the economy.

The lack of adequate government control of the transfer of technology is responsible for this situation. Pakistan does not have any organization for research, planning, decision making and control regarding the transfer of know-how, and for this reason the country has little technology for producing intermediate and capital goods.

It may be important to note that licence agreements also indirectly contribute to the flow of technical know-how. This is because an agreement for the licence of a patent or trade mark generally requires other agreements, such as management contracts and technical-services agreements.

The foreign party granting a patent licence to a Pakistani firm generally considers it necessary to offer advice on practical aspects of using the patented know-how. Therefore, when parties negotiate licences for patents and trade marks, they also have an opportunity to discuss and develop other agreements through which technical advice could be transferred.

Thus, the need for a patent or brand name often gives rise to full-fledged technical-services agreements. Generally, the royalty and technical fee go together, and in this way adequate technical know-how is obtained about a number of consumer goods.

Experience has shown that some licence agreements for the use of trade marks have been an unnecessary drain on foreign exchange.

The experience of Pakistan, as of other countries, points out the need to revise the existing licence arrangements in the light of the problems developing countries face and to formulate an appropriate criteria for evaluating and negotiating licensing proposals.

The transfer of technology through licence agreements may be said to foster the importation of technical know-how, which is useful and necessary in itself but does nothing to equip the recipient country to work out its own technologies in the future. Indeed, importing tends to perpetuate, rather than progressively reduce, dependence on foreign sources. Instead, the practices that should be encouraged are those that strengthen the capacity to develop national technology.

It would be incorrect to view the transfer of know-how from abroad and the creation of technology at home as mutually incompatible alternatives. The local development of technology must have foreign technical and scientific roots. However, as industrialization proceeds, the two kinds of know-how continually complement each other in ways that substantially limit the enterprise's freedom of choice.

Mexico

The goals of Mexican policy on technology are:

(a) To find a more efficient process for adapting imported technology;

(b) To develop gradually local technologies;

(c) To encourage domestic productive units to acquire technologies appropriate to local factor requirements. Thus, domestic producers are encouraged to use resources rationally, which implies a modification of the national demand for certain technologies.

Part of the reason for such a modification is that Mexico's experience in industrialization has demonstrated the difficulties of reaching national, social and economic goals even with use of greater resources. It has been, therefore, necessary

to design new strategies and to define new objectives with respect to the use of technology. Recently, Mexico has set new goals and priorities, goals that consider not only quantitative growth, but also the impact on society.

Mexico today is in a transitional stage, where it is less interested in statistical growth and more concerned with qualitative development.

For example, in searching for a satisfactory relationship between foreign technical assistance and employment, it is necessary to plan what technology is needed. To achieve this relationship, it is important to develop a new attitude to technology on the part of recipient enterprises. Previously, private enterprises were oriented only to the domestic market operations and were protected from foreign competition. This new attitude, which Mexico is actively trying to develop, will affect the various phases of technology transfer starting from the definition of technological requirements, the selection and adaptation of technology, and the strengthening of the negotiating position of domestic companies.

If the national supply of technology (from whatever source) is to be enlarged, human resources must be developed, engineering and design capability created and expanded, existing research institutions improved, productivity of local companies increased, and information systems established on a sector-by-sector basis. Thus, when the technological base of a developing country is raised, the country is better prepared to enter into the complicated negotiations for foreign technology.

Mexico is giving great attention to assisting local enterprises to develop negotiation skills designed to obtain better contractual terms. Experience has shown that negotiating strength depends on:

(a) A clear definition of the technical objectives to be reached and of the technological requirements to be satisfied;

(b) Greater knowledge than hitherto conceming altemative domestic and international sources of supply;

(c) The technical capability to evaluate the sources;

(d) A technical infrastructure locally available to absorb and adapt foreign technology;

(e) The degree of support the recipient companies receive from govemment agencies while negotiating.

To put Mexico's policy on technology into effect, appropriate machinery had to be designed that could be adapted to the various types of enterprises that form the country's productive base, including government-owned enterprises, large private locally owned enterprises, small and medium-sized private locally owned enterprises and foreign subsidiaries.

These enterprises pursue different objectives. Their reaction to technological problems differs, and the degree to which they are linked to the Govemment differs.

After defining the objectives of its policy, the Mexican Government established priorities for the various industrial sectors, a difficult task. Establishing priorities was particularly important because technological requirements, competition in international markets, and creation of employment, all of which play a very important part in establishing objectives, obviously differ from sector to sector.

Mexico's experience shows that one of the most difficult organizational aspects has been to apply technology transfer policies and to create effective agencies with competent technical personnel, which cannot be created on short notice.

VI. Licensing in specific industries

The mechanical industries

The mechanical industries can in the broadest sense be said to embrace the whole of the engineering industry and perhaps the greater part of industry altogether. To attempt to arrive at any common approach to licensing over such a wide range of activities is clearly impracticable. But by considering licensing in the engineering industry some of the key issues in licensing as a whole can be identified.

It is probably true that the licensing of technology tends to fall into two categories, the licensing of confidential process information and the licensing of articles of specific design that are then sold. It is pointed out later in this study that licensing in the chemical industry is very largely a matter of licensing confidential processes of manufacture, which are not to be ascertained by examining the chemical products themselves. This type of licensing also exists in the mechanical industries, for instance in connexion with metallurgical processes, casting processes, rustproofing and other metal finishing, all of which depend on processes carried out in the factories of the manufacturers and are not open to inspection by outside parties. Without a licence, a would-be manufacturer might find it impossible to acquire the technology.

Most licensing in the engineering industry, however, concerns manufactured articles of a specific design, which, once on the market, are in theory available to all to examine in the greatest detail. It might be thought that unless the manufacturer of an engineered article such as a bearing or an axle is the owner of a patent on the article, so that others can be prevented by law from making it, once the article is on the market the manufacturer has no further secrets. If another potential manufacturer could simply purchase the article and reproduce it without more ado there would be little room for licensing by the original producer, for there would be little attraction to paying a royalty to do what could be equally well done without paying anything.

In fact, this is not the situation at all, for the difficulties in engineering are not to be learned from the examination of a single article. Such considerations as the selection of the correct alloys for use in particular parts of the equipment, and perhaps a knowledge of the tolerances that can be permitted in various places, are at the root of successful manufacture and may be closely guarded secrets of the manufacturer. It has been said that one of the most important items of knowledge of a manufacturer in the engineering industry is where exactly the product may fail and what to do if it does. In recent years many automobiles have been recalled after sale because of the belated discovery of a weakness that had not been recognized, which illustrates the problem; to have known of the po'ential weakness before manufacture would have saved a great deal of expense.

In the conventional mechanical industries, a vast amount of licensing is concerned with the supply of blueprints, the selection of the correct machine tools and techniques of manufacture and the provision of all the licensor's expertise of this

nature. The licensee is in this way helped to enter into immediate production with an assurance that the product he makes will meet the requirements of his customers, and it is for this that he pays a royalty. The royalty is usually calculated as a percentage of the selling price or value of the product, and royalties of from 2 to 10 per cent are commonly applied, which is a considerable range.

To assess the significance of any particular figure, however, a closer look into the practices of the industry is necessary. For instance, the introduction of a new process in the oil industry may mean an enormous capital expenditure on a plant which, once erected, must remain, so that the royalty may be a continuing liability that cannot be avoided whatever happens short of dismantling the plant, which is probably inconceivable. In many operations in the mechanical industries, on the other hand, while specific equipment may be necessary, the manufacturer is not compelled to continue operating in the same way for any long period if it becomes unprofitable to do so. If one product ceases to find a market at a satisfactory price, he can, within reason, make another. Hence, if at any given time a clear market exists for a product available on a licence, it may be profitable for a potential licensee to agree to a royalty of even 10 per cent to enter the market quickly and effectively while he is assured of adequate profits, since he has the protection of knowing that if at any time this royalty proves excessive he can terminate manufacture. The possibility of shifting production must not be exaggerated, for tooling for new production and other changes of this kind are very expensive.

There is no doubt, however, that much of the engineering industry can afford a shorter-term view of production than those branches of industry in which a new project means a very large capital investment in a plant specific to that project and of little or no value for any other purpose.

A much more significant factor than the royalty rate is the basis for calculating the royalty. The term "5 per cent royalty" is meaningless unless it is known on what the royalty is calculated. To take the simplest instance, a royalty of 5 per cent on the cost of manufacture can be very different from a royalty of 5 per cent on the selling price.

In this study, where royalties are quoted they are based on the selling price or, where the licensee himself uses the products as raw materials, on the estimated selling price in the market. Various formulae exist for arriving at the latter in case of need. In some types of industry (the oil industry referred to above, for instance), the product of the licensed process is usually, for practical purposes, the product sold, and a royalty based on the selling price is logical. In much of the engineering industry, on the other hand, a specific engineered product may be complete in itself yet only a small, or even trivial, part of the final article. For instance, a small bearing may be a key part of a large machine, and a manufacturer who needs to take a licence on the bearing, and perhaps pay a royalty of 10 per cent on its value, may in fact be paying so small a sum relative to the selling price of the finished machine that its precise level is relatively unimportant. A royalty of 10 per cent on the bearing may be a royalty of a fraction of a per cent on the machine, and either percentage may be specified in the licensing agreement. It will be seen that the idea of a standard royalty can be misleading in such circumstances, and a different method of computation is necessary.

In short, a royalty cannot be considered in isolation. A royalty is one of the costs of manufacture to be listed along with the cost of raw materials, the cost of the labour required, the cost of the fuel and power consumed and so on. These factors

give the cost of manufacture when totalled according to the standard methods used in industry, and the difference between this cost and the selling price is the gross profit. If a licensed process can show a high gross profit by such a calculation, there is no more a case for saying the royalty is too high, whatever it may be, than for saying that the cost of the raw materials (which cannot be controlled) is too high. If a licensor, who can make the same calculations, sets a royalty that is too high to give an adequate profit, he will attract no licensees.

This economic approach to licensing is at the essence of licensing policies in Western Europe. It follows that in the engineering industry, where licensors and licensees may have similar expertise available, the likilihood is that a company wishing to manufacture a given article will estimate what its own cost would be to develop the article in question and compare it with the total cost of the royalty over the royalty period. In this event, the arithmetical sum referred to above will involve the replacement of the royalty charge by a development charge, though, no doubt with a loss of time, and the comparison will determine whether the licence is to be taken.

The electrical industry

The electrical industry encompasses so wide a range of technology that in a sense it is an epitome of industry as a whole, and almost all the varieties of licensing encountered in industry as a whole are to be found somewhere, in addition to which certain types of licensing in the industry appear to be unique. Thus, at least four areas of the industry come to mind. In the first area, which includes the manufacture of semiconductors and of the very special types of metal that form their basis, many processes are held confidential in the factories in which they are carried out, and here the principles of licensing confidential processes considered elsewhere in this study directly apply. The second area includes the heavy and light electrical industry, which manufactures such articles as motors and transformers and has a certain analogy with the mechanical industry. A third great section is the electronics industry, and a fourth, computers. Licensing in the computer industry is of so special a character with respect to software that it is a segment of its own that is in a constant state of flux and can hardly be dealt with in a general study of the present kind.

Most conventional licensing in the electrical industry is probably carried on in electronics. Here again, there are at least two types of licensing.

Broadly speaking, the electronics industry involves the manufacture of separate components on the one hand and their assembly on the other. Many manufacturers, in the radio and television industries, for example, purchase the components from outside and devote themselves to their assembly. Where the licensing of know-how on production of the components themselves is in question, as in the manufacture of small mechanical items, rather similar considerations apply; and the royalties are likely to be about 5 per cent, although they can range from 2 to 10 per cent. The manufacture of such components is a highly technical matter, involving electrical tolerances in the same way that mechanical parts involve mechanical tolerances. Any manufacturer setting out to manufacture components would be faced with much experimentation even if he had considerable knowledge of the design. A production line giving perhaps 20 per cent of rejects would have startlingly different economics from one giving no appreciable rejects at all, and the cost of a licence on a process operation might be a cheap way of avoiding rejects.

When the components are assembled to form the finished article, a dual situation can arise. In theory, if the circuit is acceptable, the assembly of the components ought to be a formality; but, in fact, the assembly can involve a vast amount of expertise in connexion with the automation and the electrical effects of nearby components and wiring on each other. Thus, the know-how can command royalties comparable to those applicable to the manufacture of components.

However, a question concerning patents may arise that should be mentioned here even though this study, as explained earlier, is essentially concerned with the transfer of technology rather than with patent licences. In the electrical industry there are many patents on circuits, and it can easily happen that the manufacturer of finished articles from purchased components may need a patent licence on the circuit, even if he does not need know-how. In this case, a royalty of 2 per cent or even less might be charged, as against perhaps 5 per cent for the manufacturing know-how as well.

The precise level of any royalty must nevertheless depend on the value of the technology.

The chemical industry

Licensing in the chemical industry, as considered in this study, consists almost entirely of the transfer of process technology and the supply of the plant design in respect of the plant needed for the particular process. A chemical product is hardly analogous to a mechanical design, and there is usually no way of telling with any certainty or precision how a chemical product has been made by examining it. Hence, the licensing of chemical products amounts in principle to the disclosure to the licensee of the confidential details of the licensor's method of making the product and to giving assistance to the licensee in helping him to enter production using that method. It is true that if the process in question is conventional in a chemical sense or is patented and so published, the chemical steps in the operation may be well known, but the specific expertise in carrying out the chemical steps most efficiently may be of great value and is the material available for license. The process is seldom secret in any chemical sense, and indeed the general disclosure of the basic chemistry of new processes in the patent literature has been one of the reasons for the advance of the chemical industry as a whole. But the details of the process and the plant design are the highly confidential property of the originator and of evident licensing potential.

In the absence of published records of royalties in the industry, it is difficult to make any statement at all except that in Western Europe, and generally in the developed world, a clear distinction is drawn between commodity chemicals made in large quantities for wide use (such products as phenol and alcohols) and speciality chemicals used for specific purposes in particular industrial applications. In general, a commodity chemical is sold to a specification; and the seller frequently has little knowledge, and need have none at all, of the use to which the purchaser is to put the product. The use to which a speciality chemical is put will be well known to the licensor, and indeed in the case of pioneer developments the licensor himself may have developed this use.

For basic chemicals of the commodity type, with a fairly conventional process and large-scale production, a royalty of from 2 to 4 per cent may be charged, this

covering the supply of full process data and plant design. For a standard product made by a standard process, where the royalty is a payment for know-how and plant design for the purpose of carrying out the process, a royalty of around 2 per cent may be possible. The licensee could, in principle, work out a process for himself, and his purpose in taking a licence is essentially to avoid the cost of this work and the loss of time. Hence, the cost of purchasing the process by a licensing arrangement must bear some relationship to the potential cost to the licensee of developing the process on his own, and the licensor must set his price accordingly. A company having the necessary skills is commonly faced with the alternatives of taking a licence or working out a process for itself; increasingly these days, a licence is taken because, first, the licensed process may be proved and involve few risks, and, secondly, the company may not wish to use its most competent technical personnel in work that can be avoided.

A very special position arises when a totally new and superior process for manufacturing a standard commodity chemical is discovered as a result of fundamental research. This is rare, but fundamental research is normal in the chemical industry and the possibility is always present. In this event, the situation can change radically; and instead of conventional but proved technology, a new area of specialized technology comes into question. In such instances, the royalty can be expected to be much higher than 2 per cent, and its level will depend on the degree of advance over the old processes and technology. Sometimes, the advent of a totally new chemical process may largely or even almost entirely eradicate the use of older processes, as happened with the cumene phenol process many years ago and more recently with the current acrylonitrile process now widely used in the world.

Where speciality chemicals are at issue, a higher royalty is normal. For a start, the sales may be relatively low, so that unless a reasonably high royalty is obtainable, a licensor may not find it worth while to embark on the effort of licensing, which, as indicated earlier, absorbs personnel who might more profitably be employed elsewhere. Furthermore, licensors of speciality chemicals often become involved in supplying data on their use, a further burden on a licensor. A royalty of 5 per cent or above is not uncommon. Indeed, it is easy to believe that the spread of royalties in Japan, as shown in table 7, represents, to some degree, the variation between licences on commodity chemicals and licences on speciality products.

Another aspect of licensing in the chemical industry has a close bearing on the situation described above. Since licensing in the industry is related to process technology, particularly to the provision of the corresponding plant design, the essential element of the licence may be the erection of a plant to the design. Although the licensee could, in theory, erect the plant himself with the necessary blueprints, the licensor is likely to be very closely involved. Thus, some licensors contract to erect the plant for the licensee, perhaps through a turn-key agreement. In this event, the licence is inevitably bound up with the contract, essentially an engineering contract, to erect the plant. In the extreme case, the licensor may include all his charges in the engineering contract; in other cases, he may take a normal engineering profit on this contract and obtain his return for the process technology through an ordinary licence agreement. Thus, there is much room for flexibility. These issues are well understood by major companies in Western Europe. An extensive knowledge of licensing practices and of the possible variants is necessary to judge the merits of particular schemes.

The pharmaceutical industry

Although licensing in the pharmaceutical industry is carried on in circumstances entirely different from those in other industries, much of the debate on licensing and patent systems in recent years has been centred on this industry because health is a subject that concerns everyone. This unfortunate debate has led to confusion from time to time, for pressures on pharmaceutical licensing have led to misplaced pressures on licensing elsewhere in industry. Similarly, attempts have been made to force pharmaceutical licensing into a template suitable for the rest of industry but not for pharmaceuticals.

A common factor in licensing technology is that a licence normally involves the transfer of technology in the form of plant or product design, blueprints and so on, for a price which is based to some degree on the cost of this work. A potential licensee may often have reached the same point by doing the work himself and frequently has to decide whether to proceed on his own or pay licensing fees to save time and trouble.

In the pharmaceutical industry, the situation is different. The discovery of a new pharmaceutical, which may in extreme cases transform medical approach to a disease, involves a vast amount of research and testing, and above all a tremendous effort to convince the medical profession that the new pharmaceutical should be prescribed. When this elaborate effort is completed, a would-be licensee seldom needs much by the way of know-how or plant design, for any chemist skilled in the particular art can usually make the pharmaceutical without too much difficulty once he knows what it is and its value has been proved. Furthermore, the actual cost of manufacture may be relatively low; the larger expenditure has gone into the research, much of which will have been unproductive, and in the effort to publicize the pharmaceutical in the medical profession. Once the pioneer work has been done, anyone else coming along could, in the absence of restraint, make and sell the pharmaceutical without assistance from the originator and at a much lower price than the originator, who has to recover the research and development expenses, which have, in fact, created the market demand.

For this reason, many pharmaceutical companies find it impossible to incur the expense of bringing a new pharmaceutical on the market unless they can be reasonably certain of patent protection. Otherwise, they are liable to be left with the expense but not the market, which might be captured by a competitor carrying out no research at all.

Consequently, since know-how and plant design are of lesser importance, licensing in the pharmaceutical industry amounts very largely to patent licensing; and furthermore, for the reasons outlined above, the royalties are much higher than elsewhere in industry.

In the United Kingdom of Great Britain and Northern Ireland a special law has been enacted that provides for an independent assessment of a fair royalty. It is a pity that this law applies only to a sector of industry uncharacteristic of industry as a whole. Under Section 41 of the current British Patents Act, anyone wishing to have a licence under a pharmaceutical patent is entitled to one if he applies to the comptroller of the British Patent Office, unless it appears to the comptroller that there are good reasons for refusing the licence. This obligation on the comptroller to grant a licence even against the wishes of the patentee unless there are good reasons to the contrary removes pharmaceuticals from the patent monopoly system in the

United Kingdom to a large extent, for a perusal of the law reports shows that the licence is seldom refused.

Subsection (2) of Section 41 reads as follows:

> In setting the terms of licences under this section the comptroller shall endeavour to secure that food, medicines, and surgical and curative devices shall be available to the public at the lowest prices consistent with the patentees' deriving a reasonable advantage from their patent rights.

Several leading cases in the United Kingdom indicate the order of royalties the comptroller, as an independent adjudicator, has decided were reasonable. A royalty of about 25 per cent is sometimes considered a fair one. It is difficult to believe that such a royalty would be found elsewhere in industry, and this particular situation is no measure of royalties on products other than pharmaceuticals.

This high level of royalties in the special case of pharmaceuticals is well understood in Western Europe, for it is recognized that without proper compensation to the patentee and an adequate reward for success the discovery of improved pharmaceuticals will be retarded.

The patent laws of most countries of the world provide that if a patent is not worked, or the patent monopoly is otherwise misused, a third party can obtain a compulsory licence. In the United Kingdom, the law contains a separate provision for pharmaceuticals and the like, which is that if a patent exists for a pharmaceutical a third party has a right to a licence regardless of the activities of the patentee unless it appears that there are good reasons to the contrary. That, as has been said earlier, means that in the United Kingdom a patent monopoly for a pharmaceutical is not an absolute monopoly, as anyone wishing in good faith to obtain a licence can ordinarily do so on application to the comptroller of the British Patent Office, on terms to be settled by the comptroller himself.

This provision of the law has been applied in significant instances. In those referred to below, the licences were granted against the opposition of the patentee, and the terms were set by the comptroller as an independent adjudicator, on the basis of equity. In most of these instances, the patentee was outside the United Kingdom, so that these decisions meant that royalty payments had to go abroad. This consideration certainly was irrelevant to the proceedings, but it could be of interest to those concerned with the national interest.

One of the leading instances occurred in 1964, when a firm applied for a compulsory licence on a pharmaceutical that was the subject of patent rights held by a foreign company. The licence was granted, the only question being the level of royalty. It was laid down that the royalty should have three components:

(a) A contribution to the research and development costs of the patentee;

(b) Compensation to the patentee for his promotion costs;

(c) A profit return to the patentee, which could be considered his direct return.

A royalty of 18 per cent was set, and the reasoning is to be found in the *Reports of Patent Cases, 1964* (27, p. 391).

This decision provided a basis for a subsequent case of importance, again where an applicant wanted a licence on a pharmaceutical under a patent owned by a company outside the United Kingdom. In this instance, the above-mentioned method of calculating the fair royalty was again followed. It was decided (based on the average selling price of the patentee) that a fair component of the royalty to

compensate for the research expenditure was 10 per cent of that figure, that the component to cover promotion costs should be 6.4 per cent and that a fair profit was 3.6 per cent, making a total of 20 per cent of the selling price of the patentee. If the licensee sold at a lower price, as might be expected to give him a competitive entry into the market, the royalty would be over 20 per cent of his own selling price. This is reported in *Reports of Patent Cases, 1969* (28, p. 504).

Not all licences have called for these high royalties. In one case reported in the *Fleet Street Patent Law Reports, 1971* a royalty of 8 per cent was recorded. However, in another, reported in the *Fleet Street Patent Law Reports, 1971*, (29, p. 540) a 27 per cent royalty was set and in a recent case in *Reports of Patent Cases, 1973* (30, p. 253) a royalty of 29 per cent was awarded, apparently the highest quoted royalty so far.

A specific form of order to provide for the licence was set out in the *Fleet Street Patent Law Reports, 1967* (31) and in the *Reports of Patent Cases, 1969* (28, p. 521).

Although these decisions were handed down by an independent adjudicator, they are peculiar to the pharmaceutical industry and cannot be regarded as relevant in other sectors of industry. Also, the royalties were for patent licences alone, with no supply of know-how. There is no provision in British law for the compulsory supply of technology.

It may be concluded that up to about 25 per cent or a little more is considered a reasonable royalty for a patent licence on a pharmaceutical (with no know-how element) under British law.

VII. Conclusions

Licence agreements can effectively contribute to the technological experience of a country provided that they establish a flow of essential technology to that country. To be really effective, the technology obtained through these agreements should be utilized by the whole economy, rather than a limited sector of it, and the agreements should be accompanied by an effort to develop related technologies based on domestic research and local experience.

The Government of a technology-importing country can do much to make the licence agreements as effective as possible. They can induce the technology-receiving party or enterprise to place such terms and conditions in the licence agreement as may generate a flow of technical know-how that is required and is not merely a repetition of technology already acquired or a business deal in which a local firm wants to earn higher profits by producing a patented product of a popular brand. The Government can accomplish this objective through regulation.

Attention is frequently drawn to the contrasting aims of patent policy and the policy of encouraging competition, the former tending, at first sight, to create monopolies, while the latter to combat them. In fact, there is no necessary conflict between patent policy and an anti-monopoly policy provided that the fundamental objectives of the two systems are properly expressed. A patents policy intended to promote research and the practical application of inventions in the general interest is in full harmony with an anti-monopoly policy, provided that the exclusive rights conferred by a patent are exploited to work the invention in accordance with patent law and not to limit competition unduly.

From the point of view of the underlying principles of laws concerned with patent and restrictive business practices, the original conception of the monopoly granted to an inventor as the inventor's right to absolute ownership of his work has gradually been superseded by the public-interest aspects of the invention. The control of restrictive business practices relating to patents and licences is increasingly necessary, since economic development depends on progress in science and technology; and today most enterprises engage in research and development. Patents can be powerful weapons in competition for the market, and large firms with a proliferation of patents can exert an undue influence on the market. By granting or refusing licences to other firms or by granting licences subject to burdensome restrictions, firms can use the rights attaching to the patent not only to develop and disseminate new knowledge but also to exercise excessive economic power.

This danger is greater today, when very complex technology is required for industry and inventions may have application in various fields, than it was in the past. Basic patents of broad scope covering significant inventions have still been granted in recent times. The amount of commerce, national and international, affected by patent and technology licensing runs into millions of dollars yearly. A large company, or particularly a combination of large companies, holding hundreds or thousands of patents relating to important technology, may be able to dominate an industry and subject it to excessive conditions or royalties. The tremendous number of patents held by large companies may in itself prevent a testing of the

validity of the patents in the courts. Industrial development may well be retarded by abuse of patents. The development of industries of certain countries may be adversely affected by territorial restrictions imposed by combinations of patent holders. For all these reasons, countries should pay more attention to the problems raised by restrictions relating to patents and licences and to apply the provisions of their legislation on restrictive business practices more systematically than they have in the past.

A national enforcement agency will be less and less able to proceed against the partners of international agreements because the more agreements come into existence, the greater are the chances that evidence necessary for proceeding against violators of the law is stored in the vaults of enterprises in foreign countries. Thus, closer co-operation between national authorities in this field will become more and more necessary.

OECD took an important step in that direction when it adopted a recommendation relating to restrictive practices in connexion with patents and licences. In this recommendation, the member countries were asked to be "particularly alert to harmful effects on national and international trade which may result from abusive practices in which patentees and their licensees may engage" and to report to the OECD Council when appropriate. It can only be hoped that this recommendation will become an effective instrument to combat international restraints on competition. It is to be hoped that the recommendation will one day lead to an international convention in which the signatories obligate themselves to co-operate in this field.

While the negative aspects of regulation have received considerable attention in many developing countries and consequently may lead them to avoid the pitfalls and shortcomings in licence agreements of the past, what is perhaps even more important is to ensure that technology shall flow into the required sectors. This promotional aspect of acquisition of technology must be given emphasis in developing countries. A prerequisite is adequate knowledge of availability of domestic technology in various sectors, together with continuous review of the principal production and technological gaps likely to develop in the economy. Alternative technologies that may be available must also be assessed and the most appropriate available technology selected.

While this task must be left largely to prospective licensees, institutional assistance can be very useful. Assistance in this regard can be provided through more than one agency and need not be confined to the agency responsible for scrutinizing and approving technology contracts. To secure appropriate technology often involves vigorous promotional efforts; and investment centres in industrialized countries are one means some Asian countries have adopted, with good effect, to promote the flow of investment and technology into the desired sectors.

Regulation of technology licensing in developing countries needs, therefore, to be viewed from a dual perspective. On the one hand, institutional control should ensure that restrictive provisions in agreements that are adverse to the interests of licensees and the economy should be avoided or minimized as far as possible. On the other hand, positive institutional assistance is necessary to promote the inflow of appropriate and essential technology to cover major technological and production gaps. It is only when a judicious balance has been struck between these aspects that licensing of foreign technology can serve as a really effective instrument for technological growth in developing countries.

United Nations bodies like UNIDO and UNCTAD, the regional commissions (Economic and Social Commission for Asia and the Pacific, Economic Commission for Africa, Economic Commission for Latin America, and Economic Commission for Western Asia) and the specialized agencies, such as the World Intellectual Property Organization (WIPO), should play a much greater role in guiding the developed and developing countries in the transfer of technology and in negotiating licensing agreements. They should draw equitable guidelines that Governments could take up and use as the basis for drawing their own guidelines. When developing countries are not in a position to determine the proper choice of technology and conditions for its transfer, the United Nations bodies should be in a position to extend expeditious help to them when required. To this extent these bodies require strengthening.

Annex I

STANDARD COST CALCULATION OF POLYETHYLENE (LOW DENSITY) AS A FUNCTION OF PRODUCTION SCALE

Production scale (t/a)	*10 000*	*20 000*	*40 000*	*80 000*	*120 000*
Installation cost (million yen)					
Main equipment	2 000	3 300	5 400	8 800	11 600
Auxiliary equipment	600	990	1 620	2 640	3 480
Total	2 600	4 290	7 020	11 440	15 080

Factor	*Unit price*	*Requirement per ton of product*	*Cost per ton (yen)*				
Raw material							
Ethylene	33 yen/kg	1.05 ton	34 650	34 650	34 650	34 650	34 650
Others			6 800	6 800	6 800	6 800	6 800
	Total raw material		41 450	41 450	41 450	41 450	41 450
Utility							
Electricity	4 yen/kWh	2,000 kWh	8 000	8 000	8 000	8 000	8 000
Steam	800 yen/ton	1.5 ton	1 200	1 200	1 200	1 200	1 200
Water	5 yen/m^3	260 m^3	1 300	1 300	1 300	1 300	1 300
	Total utilities		10 500	10 500	10 500	10 500	10 500
Labour (number of workers)	120,000 yen/month		14 400 (100)	8 640 (120)	5 400 (150)	3 600 (200)	3 000 (250)

Production scale (t/a)	*10 000*	*20 000*	*40 000*	*80 000*	*120 000*
Maintenance cost					
Main, 3%	6 660	5 445	14 455	3 630	3 190
Auxiliary, 1%					
Depreciation	25 500	21 038	17 213	14 025	12 325
Main (8 years) 11.25%					
Auxiliary (18 years) 50%					
Interest on construction cost 5%	13 000	10 725	8 775	7 150	6 283
Other expenditure and overhead 5%	13 000	10 725	8 775	7 150	6 283
Royalty	5 000	4 000	3 000	2 000	2 000
Manufacturing cost	129 500	112 521	109 568	89 505	83 231
Variation of cost of ethylene (yen/kG)					
20	112 200	96 713	94 568	74 955	70 631
25	117 450	101 963	99 818	80 205	75 881
30	122 700	107 213	105 068	85 455	71 131
35	127 950	112 463	100 318	90 705	86 381
40	133 200	117 713	115 568	95 955	91 631
45	138 450	122 963	120 818	101 205	96 881

Annex II

PUBLICATIONS SUBSCRIBED TO BY A LARGE CHEMICAL COMPANY IN JAPAN

Agricultural Chemicals
American Dyestuff Reporter
Angewandte Chemie
Chemical Age International
Chemical Engineering
Chemical and Engineering News
Chemical Engineering Progress
Chemical Industry Notes
Chemische Industrie
(Düsseldorf)
Chemistry and Industry
Chemie-Ingenieur-Technik
Chemical Marketing Reporter
Chemical Week
Control Engineering
Erdöl und Kohle-Erdgas-Petrochemie
European Chemical News
Europlastics
Farm Chemicals
Hydrocarbon Processing
Industrial and Engineering Chemistry
Fundamentals
Process Design and Development
Product Research and Development
Industrial Minerals
International Dyer, Textile Printer, Bleacher and Finisher
Journal of Agricultural and Food Chemistry
Journal of Applied Polymer Science
Journal of Cellular Plastics
Journal of Polymer Science
Kunststoffe-Plastics
Light Metal Age
Modern Packaging
Modern Plastics International
Nitrogen
Oil and Gas Journal
Polymer Age
(Plastics Rubber Textile)
Polymer News
Research Management
Rubber Age
Rubber Chemistry and Technology
Rubber Journal
Rubber World
Soap/Cosmetics/Chemical Specialties

Annex III

CIRCULAR NO. 393 OF THE CENTRAL BANK OF THE PHILIPPINES

REGULATIONS GOVERNING ROYALTIES/RENTALS

Pursuant to Monetary Board Resolution No. 2300 dated December 7, 1973, the following regulations for royalties and rentals are hereby promulgated:

Section 1. *Scope of the Regulations* – This Circular shall apply to:

a. Royalty/rental contracts involving or which may involve the use of trademarks, copyrights and patents as well as the use/transfer of technology or furnishing of services payment for which is based on the value of the article manufactured, used or sold entered into by and between residents and non-residents; and

b. Rental distribution/royalty contracts between residents and non-residents involving or which may involve movie and television films procured under no-dollar arrangements.

Section 2. *Necessity of Approval and Registration of the Contracts with the Central Bank* The contracts referred to in Section 1 as well as renewals thereof shall be submitted to the Central Bank for approval and registration. In approving/registering such contracts and/or renewals thereof, the Central Bank shall consult the Board of Investments except in case of rental/distribution/royalty contracts covering movie and television films.

Section 3. *Requirements for Approval and Registration* The requirements for approval and registration as provided for in Section 2 above include, but are not limited to, the following:

a. The royalty/rental contracts provide for a fixed term not exceeding five (5) years and shall not contain automatic renewal clauses. This requirement shall not apply to contracts existing as of the date of this Circular, the unexpired term of which does not exceed five (5) years from the date of this Circular.

b. The royalty/rental contracts shall not contain restrictions or restrictive business practices prohibiting the local licencees to export the product manufactured under the royalty/rental contracts or limiting their exportation abroad only through the foreign licensors as the exclusive distributors; and

c. The royalty/rental contracts involving "manufacturing" royalty, e.g. actual transfers of technological services such as secret formulae/processes technical know-how and the like shall not exceed five (5) percent of the wholesale price of the commodity/ies manufactured under the royalty agreement. For contracts involving "marketing" services such as the use of foreign brands or tradenames or trademarks, the royalty/rental rate shall not exceed two (2) percent of the wholesale price of the commodity/ies manufactured under the royalty agreement. The producer's or foreign licensor's share in the proceeds from the distribution/exhibition of the films shall not exceed sixty (60) per cent of the net proceeds (gross proceeds less local expenses) from the exhibition/distribution of the films.

However, in meritorious cases, the Monetary Board, in consultation with the Board of Investments, may authorize, subject to such conditions it may impose, remittance of royalties on contracts providing for higher royalty/rental rates or for terms longer than five (5) years or containing restrictive provisions prohibiting the local licensees from exporting the products manufactured under the royalty/rental agreements or limiting their exportation abroad only through the foreign licensors as exclusive distributors.

Section 4. *Remittances of Royalties/Rentals*

a. Remittances of Royalties/rentals arising from contracts registered in accordance with the provisions of this Circular shall be allowed in full, net of taxes, at the prevailing exchange rate at the time of remittance;

b. Remittances of royalties/rentals arising from existing contracts submitted to the Central Bank prior to the date of this Circular which conform with the requirements provided for in Section 3 hereof shall likewise be allowed in full, net of taxes, at the prevailing exchange rate;

c. Remittances of royalties/rentals accruing on existing contracts submitted to the Central Bank prior to the date of this Circular which do not comply with the requirements provided for in Section 3 hereof shall continue to be governed by Memorandum to Authorized Agent Banks dated February 21, 1970 as amended by Memorandum to Authorized Agent Banks dated January 5, 1971, unless such contracts are re-negotiated to conform with the said requirements and are submitted to the Central Bank for approval within *four (4) months from the date of this Circular* in which case they shall be entitled to the full remittance privilege provided for in Section 4 (a) above. If no re-negotiation is made within the four-month period, the royalty/rental contracts shall continue to be governed by the aforecited Memoranda to Authorized Agent Banks.

d. Royalties/rentals heretofore unremitted on account of the quantitative restrictions provided for in Memoranda to Authorized Agent Banks dated February 21, 1970 and January 5, 1971 may be remitted in full in the following cases, subject to prior

clearance from the Central Bank, provided, however, that the remittances shall not be financed from domestic borrowings:

(i) where the pertinent royalty/rental contracts or renewals thereof from which the unremitted royalties or rentals arose have already expired as of the date of this Circular; and

(ii) where the pertinent royalty/rental contracts or renewals thereof continue in force after the date of this Circular and such contracts conform with the requirements provided in Section 3 hereof or are re-negotiated to conform with such requirements *and are submitted to the Central Bank within four (4) months from the date of the Circular.*

Section 5. *Miscellaneous Provisions*

a. This Circular shall not apply to royalties/rentals on the reprints of books which shall continue to be governed by Memorandum to Authorized Agent Banks dated February 21, 1970, as amended by Memorandum to Authorized Agent Banks dated August 16, 1971.

b. All existing Circulars and Memoranda to Authorized Agent Banks inconsistent herewith are modified/amended accordingly.

Section 6. *Effectivity of the Circular.* This Circular shall take effect immediately.

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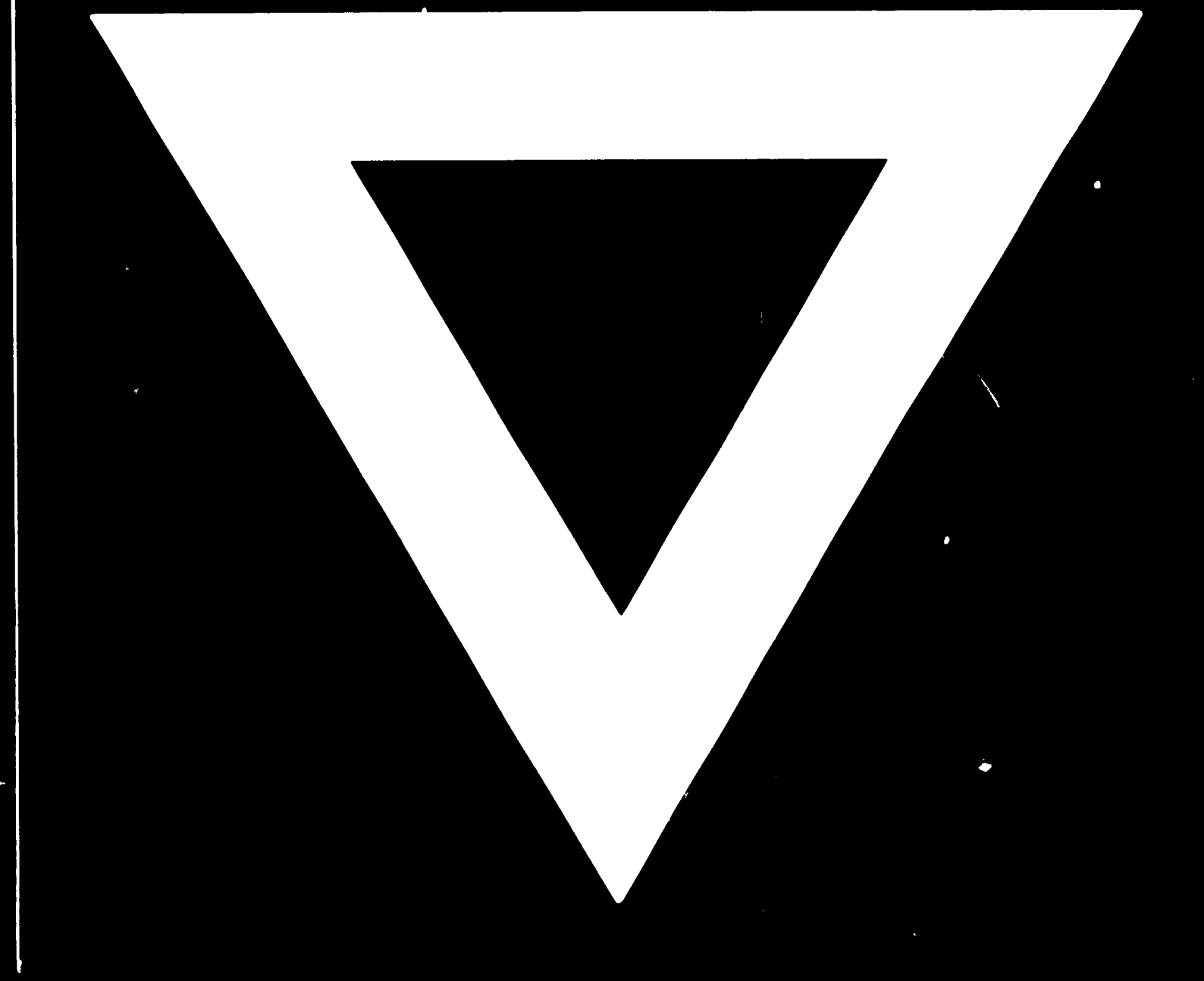

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