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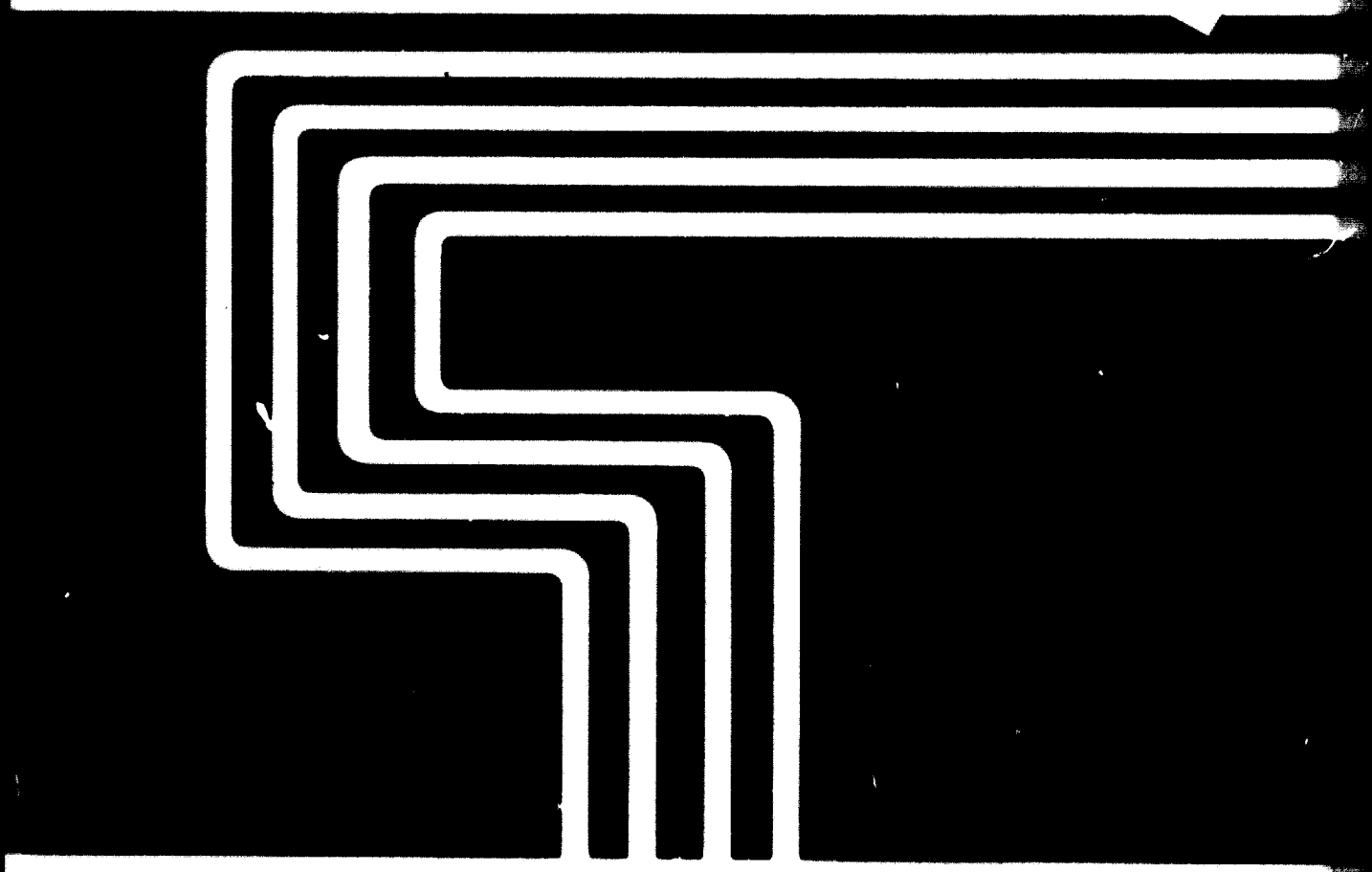
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

# GUIDELINES FOR THE ACQUISITION OF FOREIGN TECHNOLOGY IN DEVELOPING COUNTRIES



## With special reference to technology licence agreements



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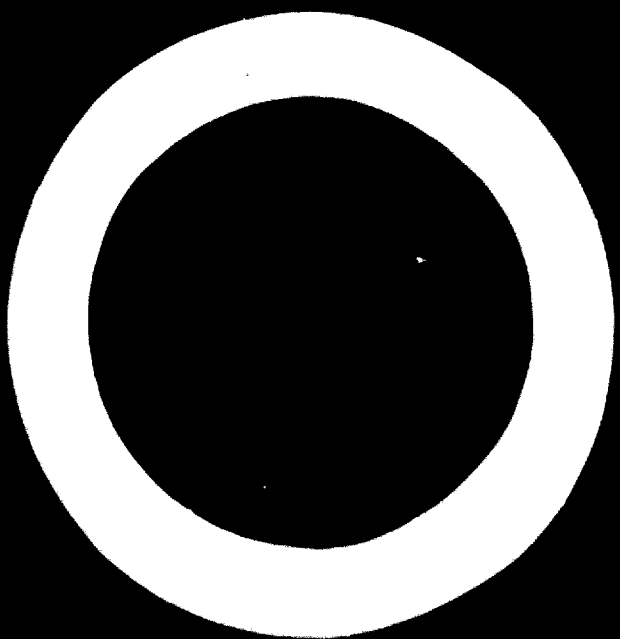

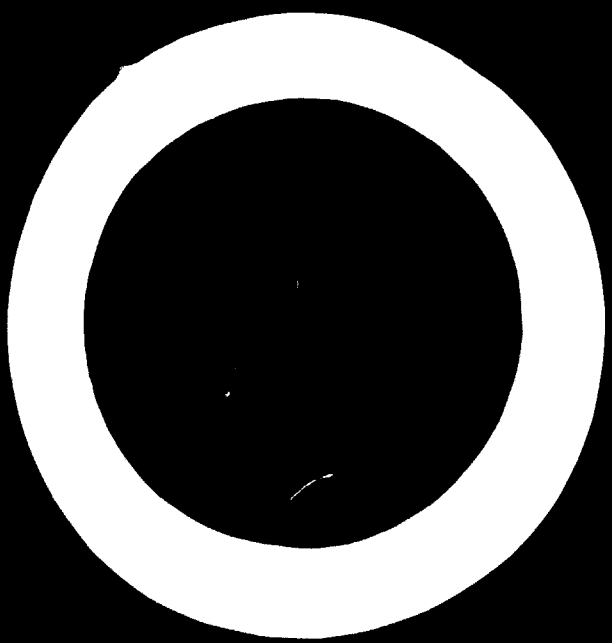

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# IN DEVELOPING COUNTRIES

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
VIENNA

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*With special reference to technology licence agreements*

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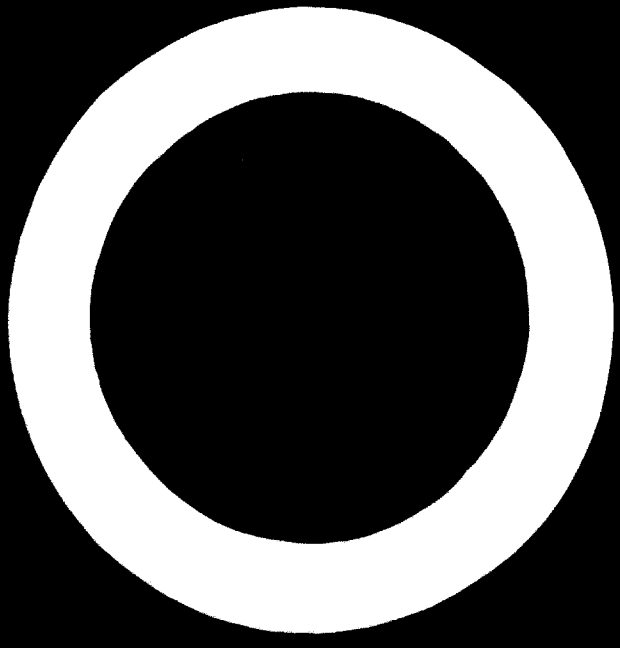
## EXPLANATORY NOTES

Reference to dollars ($) is to United States dollars. The term "billion" signifies a thousand million.

### Abbreviations

| | |
|---|---|
| AIPPI | International Association for the Protection of Industrial Property |
| ECE | United Nations Economic Commission for Europe |
| GATT | General Agreement on Tariffs and Trade |
| OECD | Organisation for Economic Co-operation and Development |
| UNCTAD | United Nations Conference on Trade and Development |
| UNIDO | United Nations Industrial Development Organization |
| UNITAR | United Nations Institute for Training and Research |
| WIPO | World Intellectual Property Organization |



# *Preface*

The scope of world trade has increased substantially during the past two decades, and the concept of it has also changed considerably. Besides the traditional forms of sale, international business transactions of increased complexity are conducted where sales are based on long-term co-operation in production. Such long-term relationships usually involve the transfer of patent rights, trade marks and technical know-how.

Licensing is an important mechanism for effecting the transfer of technology and proprietary know-how. From the point of view of developing countries, the acquisition of foreign technology through licensing agreements presents special problems, both with respect to the technology itself and the means of its transfer. In recent years greater attention has been given to this subject, and the need for technology transfer has been recognized and stressed in various United Nations bodies. General Assembly resolution 1713 (XVI) of 19 December 1961 emphasized certain aspects of technology transfer, and the over-all question of such transfer to developing countries was dealt with comprehensively in resolution 2091 (XX) of 20 December 1965. The Economic and Social Council has also adopted resolutions on various aspects of investment and technology transfer. The United Nations Conference on Trade and Development (UNCTAD) has placed emphasis in recent years on this subject. The United Nations Industrial Development Organization (UNIDO) is also paying increasing attention to the acquisition of technology by developing countries, particularly through technology licence agreements, which is the subject of this study.

This study is divided into eight chapters, including a check list for negotiating technology agreements from the point of view of a licensee in a developing country.

Chapter I deals with general trends in the transfer of technology to developing countries, the principal objectives of the transfer and the technological requirements. Chapter II discusses the various channels for acquiring foreign technology, and chapter III deals with certain features of technology agreements. Chapter IV focuses attention on the problems facing developing countries in selecting a particular technology as well as selecting the licensor and/or supplier of technology. Chapter V discusses specific provisions of technology licence agreements, primarily from the point of view of the licensee. Chapters VI and VII deal with the role of the Government in the acquisition of foreign technology and the institutional machinery that may have to be established for this purpose in developing countries. The annex, "Legal aspects of licence agreements", prepared by the World Intellectual Property Organization (WIPO), outlines various points that should be examined in the course of negotiating and drafting licence agreements.

UNIDO's efforts in the field of licensing are directed towards assisting developing countries to acquire foreign technology on equitable terms and to creating an institutional framework for co-ordinating and regulating proposed foreign licensing agreements. UNIDO endeavours to improve communications between

licensors and potential licensees so that each will better understand the objectives and the problems of the other. UNIDO has been requested to assist developing countries to evaluate proposed licence agreements on a case to case basis.

This study was prepared by Rana K. D. N. Singh, former Joint Secretary in the Ministry of Industrial Development of India, in co-operation with the secretariat of UNIDO.

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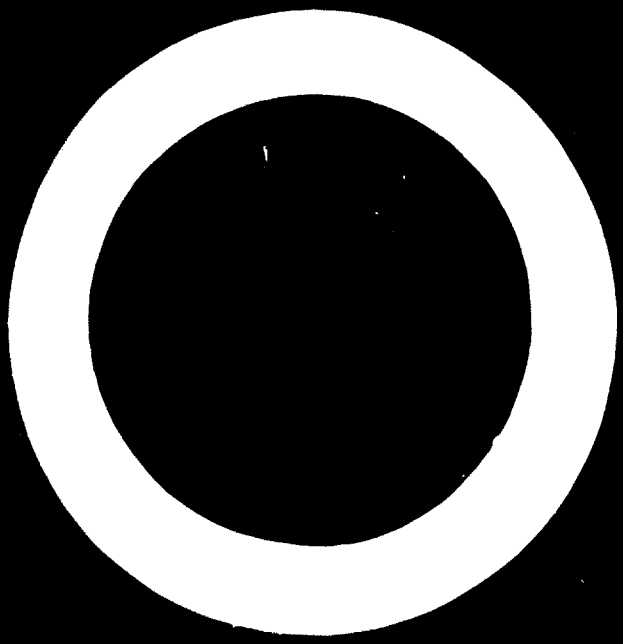

# I. GENERAL BACKGROUND

A significant feature of the contemporary international economic scene is the extensive flow of technology taking place between industrialized countries. Owing to this broad exchange of knowledge as well as to the rapid pace of technological progress, however, the technological gap between industrialized and developing countries is widening.

Transfer of technology is also taking place between enterprises in industrialized countries and those in developing countries. It is important to consider how such technology and techniques can best be acquired, absorbed and adapted to local conditions in developing countries. Where manufacturing industry is still in its early stages, relatively unsophisticated technology may be required. As the industrial base expands and becomes increasingly diversified more complex and varied manufacturing processes will be needed.

Transfer of technology can be effected in various ways. In developing countries the inflow of technology is often viewed simply as a corollary to foreign investment, and a close link undoubtedly exists between the two. Modern techniques and processes can, however, be acquired independently of foreign investment. Technology is being transferred increasingly through joint ventures, with minority foreign equity, and through licensing agreements. This study is concerned primarily with the problems and issues relating to licensing agreements, especially between manufacturing enterprises.

Technology licensing is a complex subject. Conditions vary widely from one developing country to another, and hence the impact of foreign technology in these countries will also vary. Nevertheless, the basic problems of licensing, particularly with respect to drafting and negotiating agreements, tend to be similar.

A large body of literature on technology licensing now exists, but it deals mostly with issues confronting enterprises in industrialized countries. Data on the transfer of technology to developing countries are scanty. Only in a few developing countries has information on licensing been collected and analysed. One such country is India, which has been devoting attention to licensing for years, and this study draws on Indian experience at various points. However, a discussion on licensing will of necessity largely be based on the general knowledge and experience gained in the industrialized countries. It is hoped that one of the results of this study will be to prompt the collection of more detailed information on the experience of developing countries.

## Definitions

The terms relating to acquisition and commercial transfer of technology can be defined in various ways. Technology itself is a difficult concept to define. In this study, "technology or know-how" denotes the sum of knowledge, experience and skills necessary for manufacturing a product or products and for establishing an

enterprise for this purpose. The term "technology licence agreement" relates to the communication of technology or know-how on agreed commercial terms. Such agreements, incorporated in one or more legal documents, usually cover licence rights and may include as well the provision of various technical services and supply of materials. Particularly in developing countries, technology needs to be viewed in fairly comprehensive terms covering not only the specific process or manufacturing technology, which may be patented or unpatented, but various other types of knowledge and expertise necessary for setting up a plant. The term "composite technology" has been used when various types of knowledge and expertise are involved.

With respect to certain other expressions commonly used in the study, the definitions of the World Intellectual Property Organization (WIPO) have been adopted:

*Patent* means an exclusive right, granted under the law, relating to the exploitation of a technical invention;

*Licence* means the consent given by the owner of an exclusive right (licensor) to another person (licensee) to perform certain acts which are covered by an exclusive right, or consent as to use of know-how;

*Licence agreement* means the contract between a licensor and a licensee on the granting of a licence;

*Trade mark* is a visible sign, protected by an exclusive right granted under the law, which serves to distinguish goods of one enterprise from those of other enterprises.

## Flow of technology between industrialized countries

The cross flow of technology between enterprises in industrialized countries is usually based on a technology licence, which gives the right to use patented technology for the purposes of manufacture and the communicating of related know-how on mutually agreed terms. In most cases, the technology licence is the result of a transaction between two enterprises, with little or no interference by Governments, except in Japan, where contracts providing for technology payments beyond a certain level require government approval. The technology and marketing techniques transferred are confined in many instances to patent and trade-mark rights, though such technology often extends to unpatented but confidential technical information and process techniques.

Recipient enterprises in developed countries normally have an established technological base, and their objective in acquiring technology is to cover certain specific gaps in their technological knowledge. The licensee is enabled to use new manufacturing techniques and processes he would otherwise not have been able to employ either because of lack of knowledge of specialized techniques or because of patent or trade-mark protection. For the licensor of technology, there are the advantages accruing from licence receipts consisting of down payments and/or periodic cash royalties, dividend returns when technology payments take the form of capital, sales of prototypes and components; in general, the licensor receives income without additional capital expenditure. The price for a particular technology and the nature of the technology contract depend primarily on the relative strength and

bargaining position of the two parties, the nature of the technology itself, including the extent of its substitutability, and the relative advantages accruing to either party from the licensing arrangement.

The outflow of technology has been greatest from the United States of America, largely because of the advanced technological position of many large multinational corporations in that country. Consequently, the United States has been the main recipient of payments for technology, to the extent of over 50 per cent of all such payments in the last two decades. At the same time much technology has also flowed into the United States, mainly from Western European countries. It has been estimated that, excluding transactions among the countries with centrally planned economies and between them and the developing countries, the "total world flow of technological payments probably amounted to about $1 billion in 1964"[1] while the average annual rate of increase has been estimated at over 15 per cent during the period from 1957 to 1966.[2]

Although there has been extensive in-flow of technology to enterprises in Western European countries, Japan accounts for the most significant increase in payments for technology. Japanese payments have risen at the very rapid rate of about 15 to 18 per cent per year since 1957. Royalties and related payments made by Japanese industry in 1967, 1968 and 1969 amounted to $239 million, $314 million and $368 million, respectively. Payments made to Japanese industry for technology, on the other hand, have been relatively low, the total receipts amounting to only $17.8 million in 1966, $26 million in 1967 and $34 million in 1968.[3]

## Technology transfer to developing countries

The flow of technology to developing countries has been limited, and direct payments from these countries for the right to use patents, licences, know-how and trade marks represent a rather small proportion of total payments for technology. The flow of technology will certainly increase substantially in the next decade. There is greater awareness in developing countries of the possibilities of acquiring technology and know-how from abroad and the need for acquiring this technology in order to produce on an internationally competitive basis. With the growth of manufacturing enterprises in these countries an increased flow of specialized knowledge through technology licences can be assumed. In India alone, annual payments for technology averaged over $40 million from 1967 to 1969, while payments made by certain Latin American countries such as Argentina, Brazil and Mexico were much higher. A similar increase is taking place in most developing countries having a substantial rate of industrial growth.

Certain basic principles should be observed in promoting the transfer of technology to developing countries. The flow of technology should be adequate to meet the basic needs of industrialization; the flow should be such as to cover the major technological and production gaps in a country's industrial programme.

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[1] C. H. G. Oldham, C. Freeman and E. Turkcan, "The Transfer of Technology to Developing Countries with Special Reference to Licensing and Know-How Agreements", 10 November 1967 (UNCTAD document TD/28/Supp.1) p.12.

[2] *Ibid.*, p.34.

[3] Terutomo Ozawa, *Transfer of technology from Japan to developing countries*, UNITAR Research Report No.7, 1971.

Foreign technology needs to be effectively absorbed within the shortest possible period and adapted to local conditions. Specific technologies should be acquired at a reasonable cost and on acceptable terms and conditions. Since the cost of technology can be very high and particularly so for developing countries, certain broad priorities should be established and a degree of selectivity applied.

The growth of local technological services and facilities is, and must be, a major policy objective in developing countries. A harmonious balance has to be struck between the necessity of developing indigenous research and development facilities and ensuring at the same time that the economy keeps pace with international technological developments through in-flow of technology and know-how in key industrial sectors. A striking example of a country that has preserved a harmonious balance is Japan, where payments for foreign technology, although substantial, represent a relatively small proportion of the total expenditure on industrial research and development.

The acquisition of foreign technology normally takes place on an enterprise-to-enterprise basis. Prospective licensees in developing countries are anxious to obtain suitable technology on the most favourable terms, but any benefit-cost analysis they apply relates primarily to the economics of the particular enterprise. However, the acquisition of a particular technology has broader implications. The terms and conditions under which it is acquired should conform with the over-all interests of the economy. Thus, Governments need to establish a basic policy framework within which individual technology agreements can be negotiated. In a number of developing countries, e.g. India and some Latin American countries, particularly the Andean Group,[4] these issues are now receiving close attention.

## Nature of technology requirements in developing countries

In general, the form of technology transfer to developing countries is different from that between enterprises in industrialized countries. Enterprises in developing countries acquire composite or package technology rather than specific know-how covered by patents or trade marks, which is the form technology transfer usually takes in industrialized countries. This is because the general level of knowledge and expertise in manufacturing is usually much lower in developing countries, and consequently the transfer of any specific process or product technology must often be accompanied by technical assistance. Technology transfer to developing countries relates to both the establishment and operation of an industrial enterprise.

A project to establish a manufacturing enterprise in a developing country passes through several stages:

*(a)* Pre-investment studies, including preparation of a feasibility study and a detailed project report (DPR);

*(b)* Basic and detailed engineering, including preparation of machinery specifications, plant design, factory layout;

*(c)* Selection of equipment, plant construction, erection and installation of machinery and start-up of plant;

[4] Bolivia, Chile, Colombia, Ecuador and Peru.

*(d)* Acquisition of process or manufacturing technology;

*(e)* Technical assistance during the post-installation period, including training programmes and various forms of management assistance.

Although these stages overlap, it is necessary to delineate and define the various functions and responsibilities at each stage.

The establishment of manufacturing enterprises in developing countries frequently requires foreign technological expertise at more than one of these stages. Even feasibility studies have to be done by foreign agencies in many cases, while basic engineering services and even relatively conventional process technology must usually be obtained from abroad. At the construction stage also, local expertise is often nonexistent, and plant and equipment are installed by foreigners. The basic infrastructure is lacking in many developing countries and can be built up, with deliberate effort, only gradually.

# II. ALTERNATIVE CHANNELS FOR IN-FLOW OF TECHNOLOGY

## Foreign investment

Traditionally, the flow of technology to developing countries has been an integral part of direct foreign investment. Whether in the extractive industries, in consumer-goods production or in the manufacture of intermediates and a wide range of engineering goods and chemicals, a significant flow of new techniques and processes has followed in the wake of foreign capital investments, made largely by multinational corporations. These corporations have invested in developing countries in order to protect existing markets, to create new markets, to bypass prohibitive tariff barriers and import restrictions, to take advantage of cheap labour and skills and to discover or protect raw material sources.

Foreign corporations have operated largely through branches and wholly owned subsidiaries, often with separate wholly owned marketing and distribution companies. Over the last two decades, however, many developing countries have been increasingly concerned over the total costs of such investment, i.e. the outflow of profits and dividends plus the fees, royalties and other remittances to parent companies and payments for goods and components imported from parent organizations. There is also a growing feeling in these countries that ownership and control should rest with nationals as far as possible. As a result, foreign equity holdings are frequently limited to a certain percentage in new projects and are being gradually reduced in existing foreign subsidiaries. In India, Iran and Mexico, foreign majority ownership is not normally permitted with respect to new investment. In India, certain industrial sectors have been designated where foreign technology on acceptable terms is permitted but no foreign capital participation. In the Andean Group of countries, heavy and detailed restrictions have been placed on foreign investment, both new and existing. In the Philippines, majority foreign investment is allowed in certain "pioneer" industries for 20 years, within which period it must be converted into minority ownership unless the period is extended. Thus, the permissible pattern for foreign investment differs from country to country. Although this study does not examine the implications of foreign investment in developing countries, it should be emphasized that a country's policies with respect to foreign investment have considerable impact on the form of technology acquisition. Where foreign investment in industry is regulated and local entrepreneurship exists, technology licensing is increasingly being used. This has been the experience in both India and Japan.

In foreign branches or wholly owned subsidiaries, the flow of technology is often treated as an integral part of the investment. In many cases, a substantial degree of foreign capital ownership is a prerequisite for technology transfer; certain highly technical processes and techniques such as for the manufacture of computers, electronic products, sophisticated electrical equipment or certain chemical products

may not be available to developing countries unless the owner is permitted to have full or at least controlling capital ownership of the enterprise.

The arrangements for technology transfer between the parent company and the branch or subsidiary vary considerably. In some cases, the parent company, which has full control over the branch or subsidiary, makes no specific charge for supplying technology and ensures flow of technology that it considers adequate to meet the latter's requirements. In other cases, the foreign subsidiary is required to contribute to research and development activities of the parent company, usually by making a small percentage payment against total turnover. However, subsidiaries are often required to make a lump-sum or percentage contribution, akin to a royalty payment, for specific technological services and assistance the parent company provides. Such payments, which are often not covered by formal licence agreements, need to be viewed differently from technology agreements between enterprises that do not have a close investment relationship because the element of choice on the part of the licensee enterprise is absent. Developing countries thus need to scrutinize proposals involving substantial payments for the technology and technical services a parent company provides to its subsidiary. While such payments should not necessarily be ruled out, the Government should take full account of the fact of foreign ownership and control in determining the level of remuneration for technology, if the recipient enterprise itself does not have an adequate say.

## Technology licence agreements and joint ventures

Joint ventures offer advantages to both partners. Although certain major multinational corporations are unwilling to enter into a joint venture as a minority partner, insisting instead on working through wholly owned subsidiaries, the number of joint ventures with minority foreign holdings is growing fairly rapidly. This trend can be attributed to various factors, for example, the desire of foreign companies to get around quantitiative import restrictions developing countries place on products that are being manufactured domestically. Depending on the over-all investment climate in a developing country and on the size and profitability of the market and its future projections, foreign investors are increasingly willing to participate in equity capital on a minority basis, if majority foreign ownership is not permitted.

When foreign capital participation in joint ventures is below 51 per cent, technology licence agreements assume considerable significance. Though a foreign partner with a minority equity holding of 30 to 40 per cent can strongly influence decision making, majority capital ownership by local nationals ensures that various commercial aspects of acquisition of technology will be adequately considered from the licensee enterprise's viewpoint. At the same time, as already noted, foreign participation in an enterprise ensures, up to a point, that the foreign partner will make technological expertise available. However, to avoid possible conflicts, it is desirable for both partners to enter into a formal agreement for the transfer of technology. The agreement should prescribe the responsibilities, rights and liabilities of each party, the details of the technology to be transferred and the terms and conditions of the transfer. The provisions of the agreement will be almost the same as those of technology licence agreements when no foreign investment is involved.

The extent of foreign equity participation in a proposed joint venture will depend on the amount of technical assistance that may be required from the foreign

licensor in production, management and marketing, including exports. The extent of the foreign investment should be reflected in the terms on which the technology is to be transferred. These terms will, of course, depend on the relative keenness of the licensor and licensee for the former's participation in capital ownership. Foreign investors often argue that capital investment by the licensor and payments for technology should be viewed independently, as one relates to risk capital while the other represents payments for specific know-how. This argument has a good deal of validity. It may not be appropriate to insist on any substantial reduction in the remuneration for technology on account of foreign equity participation, as such insistence may discourage foreign investment.

## Methods of transferring technology

The transfer of foreign technology to developing countries, and not necessarily involving foreign equity participation, can take various forms, depending on the kind of technological assistance that is needed for a project. Technology can be transferred through *(a)* employment of individual foreign experts; *(b)* arrangements for supply of machinery; *(c)* technology licence agreements; and *(d)* technological expertise and assistance in various stages of project implementation, such as pre-investment studies, basic engineering including plant design, machinery specifications and erection, installation and start-up of machinery and general or specific management assistance. Very often a combination of two or more of these methods is used, and what is transferred is really composite technology, comprising various elements of technical knowledge for project implementation and manufacturing. The turn-key project is the most comprehensive of such combinations.

### *Individual experts*

Enterprises in developing countries can often acquire fairly simple and unpatented manufacturing techniques and processes by employing an individual expert. This method is generally suitable only for small-scale and medium-sized projects in various engineering industries and in food processing and other consumer-goods industries.

### *Contracts for supply of machinery*

Contracts for supply of machinery and equipment normally provide for the transfer of operational technology pertaining to such equipment. This is often quite adequate for manufacturing purposes, not only in small-scale projects but also in large-scale industries, including cement, textiles, paper, where the nature of technology is not particularly complex and where no proprietary techniques or processes are involved. The extent to which this form of technology transfer proves adequate depends also on the level of industrial development and expertise in a country. In some cases, however, specific provisions are made even in machinery-supply contracts for pre-investment studies, for extensive training facilities for local personnel, or for association of the machinery supplier in plant operations beyond the normal start-up and take-over stage. Payments for such services are either provided for separately or are built into the machinery-supply prices.

### *Technology licence agreements*

The transfer of manufacturing or process technology, which forms the normal substance of technology licence agreements between enterprises in industrialized countries, is assuming increasing significance in many developing countries, particularly in those where the technological base is already fairly diversified. Manufacturing enterprises in these countries require a constant flow of the latest technological knowledge. The need for diversified technical knowledge, much of which is patented, becomes increasingly important at later stages of manufacture. Many enterprises wish to avail themselves of foreign trade marks, which make products easier to market because of historical and other links. As domestic facilities become increasingly available, such as consulting engineering services, companies supplying machinery, and construction firms, the technological gap is normally the process or manufacturing technology for a particular product.

Licensing of process technology to developing countries may be of interest to those possessing specialized technology for a variety of reasons. A technology agreement enables a foreign licensor, who may be unwilling to risk his capital in a developing country because of environmental uncertainties or doubts regarding a project's profitability or who may not be permitted to invest on conditions acceptable to him, to reap substantial returns in the form of fees, royalties and profits from assured sales of components and intermediate products. In all such cases, the provisions of the technology agreement should be carefully considered to ensure that the acquired technology is appropriate to the needs, the cost of acquisition is not disproportionately high, and the licensee can absorb the technology within a reasonable period.

Entrepreneurs in developing countries who wish to acquire foreign technology (usually composite technology) have to approach the foreign manufacturer when the manufacturing technology is covered by patents or the know-how is confidentially held. In such cases, the latter often becomes the central point for technical assistance covering various phases of establishing an enterprise. When the foreign manufacturer cannot supply services such as basic engineering, he can arrange for them to be supplied. Often, specialized technical processes are linked with specific plant designs and engineering. In other instances, where patented process technology is not involved and where the know-how is fairly conventional and available from several sources, the organization responsible for basic engineering, usually a consulting engineering firm, assumes the central role in the project's implementation and co-ordinates the supply of technical assistance. In both cases, the entrepreneur from a developing country, having limited experience with licensing agreements and little knowledge of the technical implications and costs of the various parts of the technological package, can find it difficult to arrive at a satisfactory arrangement at a reasonable cost.

### *Turn-key contracts*

In the early stages of a country's industrialization, enterprises often enter into turn-key arrangements, whereby one party is responsible for setting up a plant and putting it into operation. Depending on the nature of the plant and the technology involved, the turn-key contractor may be either the owner of the technology or the main supplier of machinery or a consulting engineering organization. Sometimes,

when the project is large, e.g. a steel plant or a major petrochemical unit, several foreign organizations combine to take up turn-key responsibilities.

It needs to be stressed that, while it may be very advantageous to deal with one party that is responsible for establishing a plant, the cost of such an arrangement is often much higher than the cost of contracting separately for the various supplies and technological services. Costs are determined in many such cases in over-all terms and without a full and detailed breakdown of the costs of the various elements of expertise and supplies. Even when the costs of each stage of implementation have been broken down, it is difficult to determine the additional mark-up at each stage, as negotiations are usually conducted for the technological package as a whole.

The purchasing enterprise in a developing country should not view a turn-key contract as one large lump-sum payment for setting up a project. As much as possible, not only should the costs be broken down at each stage but the purchaser should also participate in decision making at certain stages. For example, when examining the detailed project report (DPR), which should be an essential feature of such an arrangement, the purchaser should be able to terminate the negotiations if there is evidence to suggest that the project may not be economically viable. On completion of basic engineering work, for which costs should be specified, and at the stage of plant construction and selection and purchase of machinery, the purchaser should ensure that competitive bids are obtained for the major items and that the most suitable offers are accepted. While the turn-key contractor, by virtue of his over-all responsibility for a project, must have a say in the selection of parties for the major supply and construction contracts, the purchaser should also participate in the selection as far as possible. The licensee should ascertain that the turn-key contractor has full access to the know-how and expertise required in a project so that no aspect of the project will suffer. This aspect could assume major significance where patent rights in respect of process or manufacturing technology are involved but can be very important in respect of basic engineering and other technical services also.

In many countries the tendency is gradually to replace turn-key contracts with technology licence agreements for manufacturing technology and know-how, the latter including basic engineering services to the extent that these cannot be performed by local agencies, and with specific contracts for supply of machinery and its erection and installation. This procedure is cheaper and encourages the development of indigenous technical services.

## Development of indigenous technical services

Many developing countries are making a deliberate effort to strengthen indigenous technical service facilities, particularly engineering consulting organizations. In India, for example, where the growth of various forms of consulting services has been fairly rapid in recent years, the Government has adopted the policy of restricting foreign consulting services to fields in which local facilities are not considered adequate. The greater the local participation in planning and designing projects, even in the early stages of industrial development in a country, the more rapid will be the rate of growth of service facilities. The fact that industrial projects are implemented in the private sector sometimes works towards a greater degree of indigenization in the early stages, since there is a tendency to employ established foreign skills and the costs of individual projects may

even go up or projects take longer when such facilities are just being established in a country. The social costs to the economy, however, of total dependence on foreign agencies for performing functions which, with a measure of planning, local agencies could adequately perform, will be much higher in the long run, particularly in industrial sectors where expansion is likely to be rapid in the next few years.

It is often extremely difficult to determine accurately the benefit-cost ratio to the economy for the use of local service facilities such as consulting engineering services, which may be in various stages of development for particular industries at any point of time. Such an assessment can be made only when such services have been developed fairly fully over a long period and the savings, including savings in foreign exchange, resulting from the use of indigenous technical services in various projects can be set off against the possible additional cost for projects executed during the period when such facilities were being developed. Even when such services are fully developed, specialized plant design will still be required for the transfer of highly sophisticated techniques. Nevertheless, it needs to be emphasized that the costs of pre-investment studies and basic engineering, particularly the latter, can be very high for major projects. It is, of course, necessary to view each case in terms of the level of development of local expertise and to project the future requirements for similar projects. It would not, for example, be justified to have much of the basic and detailed engineering for a large oil refinery done locally if it has never been done before and if no other refinery or similar plant is likely to be required in the next decade. On the other hand, if five to six refineries and petrochemical plants are programmed over the next seven to ten years, it would be highly desirable to have local experts closely associated with the designing of the first one or two units, so that later plants could be designed locally for the most part. Similarly, local organizations and agencies for factory construction and for erection and installation of machinery need to be fostered to assume increasing responsibilities in these countries. The aim should be to develop rapidly skills in all ancillary aspects of technology transfer so that, over a period of time, technology licence agreements between enterprises in developing countries and enterprises in industrialized countries will be largely similar to agreements between enterprises in industrialized countries.

# III. PRINCIPAL FEATURES OF TECHNOLOGY LICENCE AGREEMENTS IN DEVELOPING COUNTRIES

Developing countries acquire technology under basically different circumstances from those under which it is acquired in developed countries. This situation works for the most part to the disadvantage of the developing countries.

Since the market for technology, protected by patents, trade marks, commercial and trade secrets and by semi-monopolistic control is largely "imperfect", it is difficult to assess the cost of a particular technology or process. While the communication of technology to other manufacturing enterprises usually takes place after the technology has been effectively exploited, it is difficult to arrive at any objective value of the technology at the stage at which it is willingly communicated to others even when products and processes have been the direct result of expensive research or when the costs of such research can be attributed to specific technical innovations. In some cases, specialized manufacturing technology is not communicated to other companies even after years of commercial exploitation by its possessor; in other cases, where the product life is expected to be limited because of competitive developments, as in pharmaceuticals, such transfer may well take place fairly soon after a product or process is commercially developed.

Whatever the cost of a particular technology to its possessor at a certain time, the price of such technology when it is communicated to another party depends on the value the latter attaches to it. The price and the conditions for the transfer of technology from one enterprise to another may, therefore, differ from case to case. Essentially, a technology licence agreement represents a bargain between the licensor and the licensee, and the terms of the bargain reflect the relative bargaining strength of each side. When a prospective licensee urgently needs a particular technology and alternative technology is either not available to him or he is unaware of alternative possibilities, the relative need of the licensee will largely determine the price of the technology and the terms on which it is communicated. The aim of the licensor of technology is to maximize his returns from a technology licence agreement. His bargaining strength increases to the extent that there is a seller's market for a particular process or technology.

Prospective licensees from developing countries are in a particularly weak position vis-à-vis the licensor. First, the composite nature of the technology package makes it extremely difficult to assess the reasonableness of the cost of one part of the package, as meaningful comparison with the cost of similar technology to other parties is often difficult. Second, the choice of technology is often restricted by the availability of foreign exchange from only one source. Manufacturing technology usually constitutes only a part of the import requirements of projects. Plant and machinery may also have to be imported. If the total import requirements are covered by project aid or foreign credits, an enterprise in a developing country may

find that it can obtain a particular process or technique only from one or two countries. An entrepreneur who is anxious to obtain technical assistance and machinery supplies from a particular foreign source, about which he may be quite knowledgeable, may have to obtain them from a completely different source, owing to foreign exchange constraints. This inevitably means that the price for the technology package will be far less competitive. Third, most prospective licensees from developing countries have little knowledge of alternatives in various fields. Even where a considerable degree of choice is possible, historical and trade relationships play a major part in determining the country and the source from which technology is to be obtained.

The prospective licensee is usually unaware of the complexities of drafting and negotiating a technology licence agreement. If he has not prepared himself adequately by studying the details of the technology and expertise that he wishes to acquire, he may find himself in an extremely vulnerable position and may be unable to resist the inclusion of undesirable provisions in the agreement. Many licensors tend to communicate manufacturing technology in such stages and phasing as would ensure the licensee's dependence on the licensor for processed materials, intermediate products and components for as long as possible. At the same time, the planning of manufacturing units in developing countries is often done in such a manner that the units can, by and large, utilize only processed raw materials, intermediates and components supplied by the licensor. Apart from these two general features that need to be guarded against, the licensor often seeks to include other tie-in and restrictive clauses in the agreement. Many technology licence agreements provide that all materials and components the licensee has to import are to be obtained solely through the licensor. The pricing of such materials can then include a sizable "mark-up", which may substantially increase the "monopoly rent"[5] earnings of the licensor on the one hand and the production costs of the licensee on the other. Restrictive clauses, covering sales rights, pricing and the like can also take various forms, often to the serious disadvantage of the licensee. These and other related provisions often included in technology licence agreements are discussed in greater detail in chapter V.

The adequacy of utilization of foreign know-how by a domestic enterprise can be judged best by the extent to which the enterprise absorbs such know-how and the degree of technological independence it achieves during the period of the agreement. Such absorption, however, rarely takes place, and licensee enterprises in developing countries remain unduly dependent on their licensor and often have to renew their agreements when they expire. Apart from the continuing royalty payments that are involved, usually on a higher base of production or sales, inadequate efforts to absorb the technology and to acquire skills prevent the domestic enterprise from adapting and developing acquired technology and linking it more closely to local factor advantages. One way to deal with this problem is to set up training programmes in good time. A well-planned training programme is the most effective means of ensuring speedy absorption of foreign technology, and the licensee should insist that the agreement provide for such a programme.

The bargaining position of enterprises in developing countries having a comparative advantage in certain factors of production could be improved

[5] Constantine P. Vaitsos, "Transfer of Resources and Preservation of Monopoly Rents" (paper prepared for Dubrovnik Conference of Harvard University Development Advisory Service), 1970.

considerably. For example, the availability of petroleum and valuable minerals in a country may make it possible for an enterprise to obtain extractive and processing technology on satisfactory terms. A large domestic market, as in Brazil or India, sheltered from foreign competition by import restrictions would draw technology into various industries where rapid growth rates are anticipated. The availability of inexpensive labour, skilled or semi-skilled, could also induce the flow of technology into certain countries. Prospective licensees need to be fully aware of whatever comparative advantages in production factors their countries may have and take these into consideration in negotiating technology licence agreements.

It is also necessary to consider the approach of the foreign licensor or supplier of technology to technology licensing. In certain industrial sectors, licensors would be quite willing to license technology and furnish related know-how to enterprises in countries where direct foreign investment may be difficult because of government policies or because of uncertainties in the general situation. As restrictions on direct foreign investment increase in developing countries, the trend towards licensing of technology is likely to grow. Technology licensing has been described as "an alternative route somewhere between exporting and direct investment abroad".[6]

[6] Worth Wade, *How to Profit from Licensing* (Ardmore, Pennsylvania, Advance House, 1969).

# IV. SELECTION OF TECHNOLOGY AND LICENSOR FOR A DEVELOPING COUNTRY

Once it has been decided what is to be manufactured, the entrepreneur in a developing country has to determine the nature and source of appropriate technology if it is not available in the country. Where such technology is generally known and is not complex or patented and where it can be acquired adequately through the suppliers of the main machinery and equipment, the choice is fairly broad. Many times, however, manufacturing technology can be obtained from only one or two manufacturers because of patents or specialized know-how; it is important in such cases to select the technology most appropriate to local conditions. The main consideration is that the technology must be correlated with the locally available inputs and with present and projected demand. The most advanced technology in a particular manufacturing sector may not be the most appropriate as compared with less sophisticated techniques based largely on indigenous factor inputs and skills.

It is desirable, as far as possible, to link technology with available raw materials and potential local skills. Often, foreign technology acquired by developing countries requires substantial imports not only of components but also of industrial raw materials. If alternative technology is available that would utilize domestic materials more fully, including industrial raw materials that are likely to be produced in the country within a reasonable time, it should be chosen. This approach is particularly applicable to the processing industries, including chemicals, though it may have equal relevance in engineering industries with respect to supply of components. The linking of technology with local skills and potential growth of such skills is necessary for generating and maximizing employment and also for absorbing imported know-how within the period of the agreement. The correlation with demand projections is important in determining the scale of production, which is also linked with the type of technology. Certain highly sophisticated and capital-intensive techniques may be appropriate primarily in very large-scale production and may be unsuitable in developing countries.

The appropriateness of capital-intensive technology also needs to be carefully assessed. The cost of maintaining capital-intensive machinery is high. Technology in certain industries such as petrochemicals and fertilizers is capital intensive, and labour-intensive techniques cannot be substituted, except in certain areas such as materials handling or packing. Certain labour-saving techniques, developed because of the high costs of labour in industrialized countries, have little relevance in developing countries and may prove expensive to acquire and to maintain. In general, enterprises in developing countries should avail themselves of labour-intensive techniques, provided that a basic competitive level of productive efficiency can be maintained.

In acquiring foreign technology, entrepreneurs from developing countries must take as great care in selecting the right licensor as they do in selecting the most appropriate technology. To make a wise choice, they need to gather as much information as they can on possible licensors and the nature of the technology or process know-how to be acquired. Material on possible licensors should include annual reports indicating their financial position and the range and number of products they manufacture. Such information can usually be obtained easily. Information on the technology to be acquired, other than on specific technical aspects, can be considered in two parts. First, information is required regarding a particular technology's present and potential utilization: the various patents, if any, that are applicable; countries where such patents are registered; and the licensing or sublicensing that has taken place. Second, details need to be collected on the: *(a)* materials required for the process, including raw materials, processed or semi-processed goods, and major components and subassemblies and sources thereof; *(b)* likely scale and phasing of manufacture in the developing country and the extent of maintenance imports that may be necessary; *(c)* major elements of costs, so that the likely manufacturing costs in the licensee's country can be accurately projected; and *(d)* skilled personnel required and necessary training arrangements. Potential licensors will normally supply information on the above-mentioned points, though when the process know-how is not patented, they may adopt a fairly cautious attitude. Prospective licensees should not expect to secure information that would disclose know-how, but, in most cases, sufficient material can be obtained from owners of technology know-how that would enable licensees to appraise adequately the various sources of technology available.

The response a prospective licensee from a developing country receives largely depends on the technology supplier's assessment of his capacity, competence and financial standing. Licensors often conduct fairly detailed investigations of potential licensees, which extend to identification of the licensee's place in the market; the size of his business, the type and volume of production; the ownership structure of his enterprise and its affiliations, including existing licence and joint-venture agreements with other firms; the size of market for the technology to be licensed that could reasonably be expected to be covered through the licensee; and other related aspects. On the basis of the information collected, the owner of technology determines whether to enter into a licence agreement and on what terms; and whether to invest, and if so, to what extent.

The importance of adequate preparation, in terms of background information and data, on the part of entrepreneurs from developing countries desirous of obtaining foreign technology cannot be over-stressed. All too often, such entrepreneurs, with inadequate technical knowledge and background and with little experience of the intricacies of technology licensing, have to undertake negotiations with large foreign companies, often multinational companies with extensive experience in international licensing. The result is that the technology acquired often proves too costly or unsuited to conditions in the country or the agreement is hedged in with too many restrictions and reservations, which hamper the effective utilization of the technology. This is not to suggest that most technology licence agreements have not brougnt benefits to developing countries—they have. However, an objective appraisal would indicate that the total cost of acquisition of technology has been disproportionately high when the entrepreneur has come to the negotiations ill-prepared.

# V. PROVISIONS OF THE TECHNOLOGY LICENCE AGREEMENT*

It is necessary now to consider, primarily from the viewpoint of prospective licensees from developing countries, the various provisions that are usually incorporated in an agreement for technology transfer. The detailed terms of the agreement will naturally vary from case to case. The following brief examination of the major provisions and their implications is designed to assist developing countries in negotiating technology licence agreements.

## Definitions of technology and technical services

First of all, the licensee must make sure that the foreign party entering into the agreement as a licensor has full access to the technology and technical services covered by the agreement. The licensor himself does not have to be fully knowledgeable in all aspects of the know-how to be supplied. He can, for example, obtain detailed engineering services from another organization. Alternatively, a foreign supplier of know-how can be an engineering organization that can obtain manufacturing technology and patent rights from an experienced manufacturer. What is necessary from the licensee's viewpoint is that the party with whom he is contracting does, in fact, have full and complete access to all the know-how and technology to be supplied. If, for tax reasons, a foreign manufacturer may prefer to transfer his technology through a subsidiary company registered in a third country, it is desirable to stipulate in the agreement that the subsidiary has full and complete access to the technology and to rights covering patents, copyrights and trade marks included in the agreement.

The agreement should clearly define the products to be manufactured through the transfer of know-how, as well as the nature and content of the know-how involved. The definition of products is desirable both from the viewpoint of the licensor and of the licensee. For instance, a licence agreement for "various items of electrical equipment" is apt to lead to differences in interpretation. It is desirable in such a case to specify "electric motors up to a certain horsepower" or "switch-gears or transformers up to various ranges". In the manufacture of chemicals, the specifications and properties of the finished products must be defined. The details or definition naturally vary from case to case, but what is important is to leave as little scope as possible for differing interpretations. It is equally important to define the nature of the know-how covered in the agreement. Where the agreement relates only to manufacturing technology, the main components of the technology should be specified. For example, a know-how agreement relating to the manufacture of paper-

*This chapter was prepared in collaboration with the World Intellectual Property Organization.

or rayon-grade pulp should specify not only the process to be used but also the basic raw materials and intermediate products needed in the process.

Where the know-how is of a composite nature and includes technical assistance over and above manufacturing technology, the agreement should clearly describe the scope and nature of the technical assistance, including the manner in which the know-how is to be transmitted, the place and the time limits for transmission at each stage and the consequence of delays. If machinery and equipment are also to be provided, it is desirable to draw up a separate agreement for this purpose, as the coverage and terms of such an agreement may be different in respect of guarantees etc.

## Remuneration for technology

One of the most critical items to be negotiated is the remuneration for the technology. This question depends primarily on the technological "package" to be acquired. When, for example, the agreement covers only a specific manufacturing process, the supplier of technology may adopt one approach; and when composite know-how is required for various stages of project implementation, he may adopt a quite different one. As pointed out earlier, the licensor has great flexibility in distributing costs in the latter case.

From the viewpoint of the recipient of technology, it is necessary to relate the total payments for technology with the extent of foreign capital participation, if any. It is important to distinguish between cases where the licensor has a substantial investment in the project and where he does not. When the licensor's investment is 20 per cent or more, efforts should be made to keep the payments for technology lower than they would be if there were no investment.

A situation that looks similar initially but is basically different relates to capitalization of know-how (conversion of know-how fees into equity holdings). From the licensee's viewpoint, such capitalization ensures the continuing interest of the supplier of technology during the period of the agreement and even thereafter. For the licensor, it gives a financial stake in the project, with prospects of capital appreciation over time and increased dividend receipts as the project expands. However, it may be desirable from the developing country's viewpoint to limit capitalization to a certain proportion of the equity capital, since capitalization involves a permanent financial interest of the foreign licensor in the local enterprise. In India, for example, capitalization is normally not permitted beyond 10 per cent of the total equity capital. Alternatively, it may be related to a similar percentage of the total cost of machinery and equipment. If a higher technology payment becomes necessary, it may be desirable to pay off the balance. This question, however, should be considered quite apart from the aspect of direct foreign investment in any particular case, which is governed by different considerations.

Payments for technology that are unrelated to capital investment by the foreign licensor can take the form of *(a)* lump-sum fees; *(b)* running royalties, usually for the duration of the agreement; *(c)* a combination of a lump-sum fee and a running royalty; and *(d)* payment for technical services.

Lump-sum payments for know-how are often made where the know-how can be fully and completely transferred all at once and the licensee can readily and fully absorb it. Such payments are made for the transfer of know-how of relatively less

sophisticated techniques, and may be quite appropriate from the licensee's viewpoint if he does not require continuing support and technical assistance from the licensor. For example, the licensee may make lump-sum payments to obtain patented formulae or sets of drawings and specifications that are sufficient to enable him to begin manufacturing certain products.

A percentage royalty based either on production or on sales is a more common form of payment. Since production figures may present difficulties, a generally preferred approach is to link royalty payments to actual sales. This is the easiest way to compute royalty payments. Sometimes sales have to be made at a limited profit or even at a loss, particularly in the first few years of production when both local skills and the market are being developed. In such cases, it may be possible to link royalty payments to levels of profitability of a licensee enterprise. However, the licensor may be extremely reluctant to accept such an arrangement unless he is directly responsible for the management and is satisfied with the prospects for profits or the licensee enterprise is in a very strong bargaining position, as it may be if it has control over scarce raw materials. The licensee must, nevertheless, take into account the projected profitability in assessing the reasonableness of the payments for technology that are being negotiated.

Where royalties are calculated on the basis of sales, the value of components and intermediate products imported through the licensor should be taken into account. It would be desirable to subtract the value of such imports (c.i.f. cost + import duties + handling costs) from the total figure on which the percentage royalty is calculated so that royalty is paid as far as possible only on the value added by the local manufacturing unit. Thus, a reasonable base for calculating the royalty could be the total ex-factory value of sales minus the landed cost of imported components obtained from the licensor. Where royalty is related to volume of production either in terms of total production or per unit of items produced, necessary allowance again has to be made for the value of the imported components.

An alternative, but rare, approach for calculating royalties is to link the royalty rate with production costs. Since such costs tend to decrease with increased production and sales, this approach may often be advantageous for the licensee, but may not be generally acceptable to the licensor because of the uncertain nature of costs in a particular enterprise. The licensor would quite likely press for a higher percentage rate so that his expected earnings would equal royalties based on a certain minimum volume of sales.

In many cases, technology payments are a combination of a lump-sum fee and a running royalty. The former is often treated as an initial payment for disclosing information and documentation relating to the manufacturing process or the basic project planning, depending on the nature of the know-how. The licensor frequently views this fee as the initial payment for basic research and development in respect of a particular technology. The actual fee charged varies a great deal from project to project and may range from a small sum for the transfers of initial documentation to a very large amount for sophisticated process technology that has required much research and development.

The size of the total technology payment may also depend on the length of the period for which royalties are payable. Where royalty payments are limited to relatively short periods either by government decision or by the wish of the licensee, the licensor may try to increase the lump-sum payment and the rate of the royalty. In negotiating technology payments in the form of a combined lump-sum fee and

running royalty, licensees should carefully evaluate the total outflow and incidence of payments that would be likely for various combinations of lump-sum and royalty payments. The incidence of interest charges, for example, is important in determining the size of the lump-sum figure, while projections of production estimates and of cash-flow during the period of the agreement are essential for assessing the rate of royalty. The licensor almost always makes detailed projections of production and consequent income flow from potential licensees from various combinations of lump-sum and royalty payments. The licensee should do the same. Thereafter the issue becomes a matter of negotiations and bargaining, and it is not practicable to lay down any norms except that the licensee should assess the total payments that he is likely to make for a particular technology against the profitability of the enterprise over a period of time and also evaluate such payments in relation to costs of alternative technology or payments paid with respect to similar projects.

An alternative to a combined lump-sum fee and running royalty that licensors often seek is a total fixed fee, payable in instalments over the period of the agreement. To the extent that the fee is not linked to production or sales, it is of advantage to the licensor, since it gives him an assured level of earnings. From the licensee's viewpoint, such an arrangement should be viewed as a lump-sum fee, since instalment payments are made on a fixed basis and thus are not really akin to royalty payments. If this type of arrangement is proposed, it would be useful to project the total payments that would have been due had the arrangement been on a lump-sum fee plus royalty basis, with a relatively safe projection of production or sales assumed. If the fixed fee is less than the projected payment, it may be considered favourably. If, however, the fixed fee asked for by the licensor is much higher, there is room for further negotiations.

The licensor frequently seeks to obtain a minimum annual payment that can be set off against royalties payable each year when he doubts that the plant will be completed or production built up within a reasonable period. From the licensee's viewpoint, a provision for a minimum annual payment may not be desirable for the same reasons, as a delay in plant completion or production would represent a financial burden that he could not pay out of his earnings. Furthermore, the licensor may contribute to delayed production by failing to send data or materials on time.

It will thus be seen that payments for technology can take various forms depending on the nature of technology transfer and the relative bargaining power of the two sides. The licensor usually makes a careful assessment, in terms of value, of the need for the particular technology, the alternative techniques available and the likely production and profitability of the licensee. If alternative sources of technology are available and the licensee is aware of them and knows their approximate cost, his bargaining power will be considerably strengthened.

An important question relating to technology payments is that of taxes on royalties and fees in the licensee's country. This question will be affected by the tax-treaty relationship between the licensor's country and the licensee's country. The licensor has to consider tax liability in determining his likely earnings. In some developing countries, e.g. India, the tax on royalty and on income earned for services within the country may go up to 50 per cent. If the country has a treaty concerned with preventing double taxation, the incidence is minimized, but if not, the tax factor could materially affect the total earnings from technology. It is important, from both the licensor's and licensee's viewpoints, that this aspect is taken into

account and whatever payment is agreed upon is subject to tax. For the licensee, the inclusion of a provision for the payment of royalties "free of tax", which the licensor sometimes requests, can result in difficulties. Such a provision might, for example, free the licensor of his responsibility for paying taxes. Non-reference to the tax liabilities could, on the other hand, lead to serious differences of interpretation if the licensor assumes that the payments will be met after taxes.

In addition to lump-sum and/or running royalty payments, the licensee frequently has to pay separately for specific technical services the licensor may provide in connexion with the transfer of manufacturing or process technology. (This is quite apart from cases where the know-how transferred includes aspects other than manufacturing technology, such as preparation of the detailed project report or basic engineering and plant design or assistance in securing machinery and equipment as well as installation and start-up of plant; the cost of such services is normally estimated separately.) These services can be considered under three main heads: *(a)* training programmes for the licensee's personnel; *(b)* specific technical services performed in the licensor's works and facilities, such as special drawings; and *(c)* technical experts supplied by the licensor to the licensee's plant during the period of the agreement.

The licensee from a developing country should ensure that the agreement provides for training of local personnel in the licensor's plant and facilities. The licensor normally agrees to provide this service free of charge, but the licensee is required to cover travel costs and living expenses of the trainees for the duration of the training. The agreement should specify the number of personnel to be trained and the specific fields of training. The provisions relating to training should be carefully drafted, since it is important to have local personnel adequately trained in all essential aspects of production techniques. The second item, specific services performed in the licensor's works, usually relates to preparation of drawings, specifications, tender papers required by the licensee and various items of information to be specifically prepared by a licensor for the licensee. This documentation is usually in addition to the material supplied as part of the know-how. Charges for these services are usually made on an hourly or daily basis. As for the foreign experts to be supplied by the licensor, the agreement should specify the number of experts, the duration of their work, and the cost of each category of personnel. While the licensee may have to pay the normal wage received by such experts in their own country and provide housing and other facilities at the local site, any heavy overhead payment to the licensor for training personnel should be reduced through negotiations as far as possible.

Whether with respect to the basic payments for manufacturing technology or technical services the licensor provides, it has to be reiterated that the bargaining position of the licensee is greatly weakened if he does not possess adequate information on the various points discussed above. Armed with detailed information regarding the costs of alternatives to a particular technology, a licensee is in a much stronger position to ensure that the payments he is required to make are in line with the market value.

## Duration of the agreement

An issue closely linked with remuneration for know-how is that of the duration of the agreement. The life of the agreement should be carefully defined, with training and other related programmes taken into account.

The licensor normally prefers as long a duration as possible, since his royalty earnings increase with increased production over the years. Licensors frequently insist on a minimum royalty period, extending to ten years or beyond, depending on the nature of the technology. If the period is reduced by the licensee, or by government direction, the licensor will seek a higher royalty rate or increased lump-sum payments or both.

On the licensee's part, the period should be kept as short as possible, provided that *(a)* it is long enough for the licensee's personnel to absorb the technology, and this will depend on the type of process and/or technical know-how in question; *(b)* the licensee does not remain dependent on the licensor for technical guidance after the agreement has ended; and *(c)* the period of the agreement is harmonized with the life of any patents that may be involved.

Although the first two aspects are self-explanatory, they are often difficult for the licensee to determine when the project is being planned. With respect to item *(c)* above, the licensee should ensure that if there are any patents covered in the know-how transfer, the life of the patent does not create problems after the agreement has expired. Sometimes the patent may continue to be valid after the agreement has ended. In such cases, the agreement should include the arrangements between the parties for the balance of the patent's life. The licensor may be willing not to exercise his patent rights in some cases while in others a substantially reduced royalty for this period can be negotiated at the time of the original agreement. If, however, the question of the continuing validity of the patent is not considered when the agreement is negotiated but only when it is about to expire, the licensee's bargaining position will be extremely weak, and quite often an agreement has to be renewed only on this account. Where a patent which is one of the subjects of the negotiations is due to expire within a few years, the licensee may be in a relatively stronger bargaining position.

The period of the agreement will vary with the nature of the technology involved. It is often calculated from the date the licensee actually commences production. Where it is defined from the date the agreement is signed, the time taken to set up manufacturing facilities is taken into account. Thus, for a plant requiring two years to start up, the period of the agreement could be, for example, either five years from the date on which production starts or seven years from the date on which the agreement is signed, provided that the period may be extended if the plant is not established within the stipulated time. While in many cases the period for payment of royalties is about five years, this should not preferably exceed ten years, as such a period is normally deemed to be quite adequate for absorption and even adaptation of foreign know-how. Should a continuance become unavoidable, the agreement can always be renewed.

## Renewal of the agreement

Licence agreements often contain a provision for renewal at the option of both parties. The licensee should not normally find it necessary to renew the agreement for the same technology and techniques. However, new processes and techniques may have been developed during the period of the agreement. To obtain access to such techniques, a renewal clause is desirable, but it is necessary to define carefully the technology for which renewal is sought so that royalties do not still have to be paid on products for whose manufacture the technology has already been fully absorbed.

## Access to improvements in technology

With rapid developments in technology in most sectors of production, the licensor is likely to make many improvements in techniques and processes during the period of the agreement. The licensee should be informed of all such improved techniques and should have access to them, including both patented and unpatented techniques as well as new patent applications and registered new patents. When the parameters of technology acquired under a licence agreement have been clearly defined, there is less scope for disagreement between the licensor and licensee as to what constitutes an improvement. It should, however, be borne in mind that licensors may not be willing to pass on information relating to an entirely new technique or "breakthrough" without additional payment. The distinction between improvements in technology and the development of new techniques and processes is not easy to define, and actual experience in this regard depends largely on the relationship established between the licensor and the licensee. Nevertheless, a specific provision providing for access to all technical improvements effected by the licensor during the period of the agreement is necessary from the licensee's viewpoint. In some cases, the licensor provides that any improvements effected by the licensee are to be communicated to the licensor free of cost. Where there is provision for a "grantback", it should preferably be on the basis of terms negotiated at the time of such "grantback".

## Guarantees by the licensor

The agreement should specifically provide that *(a)* the technology acquired will be suitable for the manufacture of products covered by the agreement; *(b)* the technology obtained will be capable of achieving a specified level of production; *(c)* the content of the technology transferred is full and complete for the purposes of the agreement; and *(d)* the delivery of drawings, specifications and material constituting the technology is completed within the stipulated period.

The nature of the warranty will differ considerably from agreement to agreement, depending on the technical responsibilities the licensor assumes. An agreement for a turn-key project, for example, should specify production levels for the plant as a whole and also for each major unit of the plant and include performance guarantees. When technology transfer comprises supply of basic engineering services, including plant design etc.. it is also desirable to include specific guarantees of the quality and performance to be achieved through such services, together with provisions for rectification of engineering and design defects free of cost. Provision for liquidating compensatory damages may also have to be included in the event that such rectification is not effected within a reasonable period. However, when the agreement relates only to manufacturing technology and does not cover the other technical responsibilities of the licensor, it is difficult to prescribe terms of performance guarantees and connected compensation clauses for nonfulfilment. In such cases, the licensor may argue with considerable validity that the technology may be quite suitable; it is being employed successfully on other projects; and transfer has been full and complete; thus any shortcomings in performance may be due to unsatisfactory application by the licensee.

The agreement should adequately protect the licensee regarding the products and production realizable from a particular technology. Though it may often not be

practicable to provide for liquidating damages or specific compensation clauses for nonfulfilment of production performance from a particular technology, the likely output of production and quality specification of products should nevertheless be clearly defined. Provision should also be made for the licensor to furnish such technical and other assistance as may be necessary to achieve the production levels and quality of product as defined. This is particularly necessary with respect to relatively new techniques and processes that have not been widely used and for which the licensor must assume greater responsibility than he would for techniques that have been used more extensively by other manufacturers and licensees. The wording of the warranty clause is thus likely to vary from agreement to agreement, depending on the nature of the technological "package" supplied by the licensor, the type of technology or process involved and the extent to which such technology is already in use. Nevertheless, the licensor should assume certain basic commitments regarding the manufacturing technology involved, preferably in the form of as specific a guarantee as can be negotiated. The agreement should specify the period within which the licensor will deliver documentation, drawings and other material comprising the technology to be transferred, together with the place and manner of delivery. Provision for compensation for non-delivery or delayed delivery can also be made, if considered necessary.

## Exclusivity or non-exclusivity

A licence agreement for manufacture is deemed to be exclusive or non-exclusive depending on whether or not it permits the licensor to transfer the technology or know-how to others or to use it himself within the country or countries concerned. The licensor normally prefers a non-exclusive licence, so that he will be free to pass on the technology to other licensees in the same country or territory. On the other hand, the licensee's interests are better secured if the licence is exclusive, at least for the country concerned and possibly for the neighbouring region. This is all the more important if the production capacity to be set up is intended to cover fully the growth of demand for a particular product or products over a certain period. Exclusivity can also be related to sales and distribution of a product manufactured under a licence agreement. While the licensee wishes to obtain exclusive rights over sales and distribution in particular areas, the licensor prefers to give non-exclusive rights, as far as possible, so as not to restrict his scope for licensing other parties or even for selling his own products directly. Sometimes, however, the licensor seeks, through the exclusivity clause, to limit the area of sales and distribution; this aspect is discussed later.

## Assignability

The licensor may seek to restrict the assignment of the licence agreement to other parties in the event of a change in the ownership of the licensee company. While it is not unreasonable for the licensor to have some say as to the parties to whom his technology is to be transferred, a provision giving him the right to rescind the agreement if the ownership should change could create serious difficulties. For example, the ownership of an enterprise may pass not only from one private party to

another but from a private party to the Government. In all cases, the know-how agreement should be able to be assigned to the new owners. The licensee should, therefore, be cautious about accepting any clause that unduly restricts assignment of the licence agreement to new owners of his enterprise.

## Confidentiality

Almost every technology licence agreement provides that the information and material supplied to the licensee is confidential and cannot be transmitted to any other party or persons by the licensee or his employees. In some cases, the licensee's key employees are required to enter into an undertaking in this regard. Confidentiality is important when the know-how is secret but non-patented. While a general clause regarding confidentiality may have to be incorporated in the agreement, such a provision should not extend beyond the period of the agreement. Sometimes the licensor seeks to insert into an agreement a clause whereby all technological data and information furnished must be returned after the agreement has expired and cannot be used thereafter. It is undesirable for licensees to accept such a provision. On the contrary, wherever possible, the agreement should provide specifically that the licensee may continue to use the technology fully after the agreement has expired. In such cases, however, confidentiality of information with regard to third parties may continue even after the agreement has expired, and this may be in the licensee's interest also.

## Sublicensing

Closely related to confidentiality is the question of sublicensing. The licensor normally seeks to provide in the agreement for no sublicensing by the licensee. If, in a particular developing country, more than one enterprise can use the same technology, it would be desirable, from the point of view of the licensee or the Government, to include a clause that would authorize the licensee to sublicense the know-how, provided that the licensor may also be associated with the terms and conditions of such sublicence.

## Industrial property rights—patents and trade marks

The question of patents in technology licence agreements requires very careful consideration. Patents can be of great significance in agreements relating to transfer of manufacturing technology and those relating to composite know-how where patents in respect of process engineering and the like may be involved. In many cases, such an agreement may become necessary only because the manufacturing technology is covered by a patent in the country concerned. Licensees should always take the following aspects of patents into full account:

*(a)* The licensor should stipulate in the agreement that manufacturing rights in respect of all or any patents relating to the concerned technology are licensed to the licensee. A list of such patents should be annexed to the agreement, but the stipulation should cover all patents relating to the

technology, which may or may not be listed. It may be useful for the licensee to satisfy himself also that the patents listed do, in fact, pertain to the technology, as the total number of patents involved in an agreement can materially affect the cost of the technology;

*(b)* The agreement should provide, if possible, that if new technology is patented by the licensor during the period of the agreement, the licensee will be entitled to use it;

*(c)* Where the life of a patent extends beyond the period of the agreement, the agreement should either provide for not exercising of the licensor's patent rights for the balance of such life or should prescribe the arrangements to cover such a period.

It is also desirable to incorporate in the agreement clauses concerning the infringement of third-party patent rights. Licensors are normally reluctant to indemnify a licensee in respect of infringement of third-party patents. For the licensee, however, it is important to be adequately covered in respect of possible infringements. If the licensor does not agree to full indemnification, which would be very desirable for the licensee, he should at least *(a)* affirm that to the best of his knowledge, the technology to be transferred is not covered by any patents other than his own; *(b)* pledge in the event of possible third-party claims for infringements to join the licensee in any action to be taken, including legal action. Similar joint action may also have to be provided for in the event of possible infringement of the licensor's patents by any third party within the area of operation of the licensee.

To determine the legal situation in the country or countries to which the licensing of an industrial property right applies, the parties to the agreement may have to refer to international conventions for the protection of industrial property (patents and trade marks), such as the Paris Convention of 1883, last revised in 1967.

The question of trade marks in technology licence agreements is as important as that of patents. It may be necessary to acquire certain technology in order to obtain the use of the trade marks, which may have considerable impact on the marketability of products in the domestic market and abroad. The agreement should provide that the licensee may use the licensor's trade marks whenever necessary. If the use of a trade mark expands the market for a licensor's product, the licensor benefits. A foreign trade mark should often be used jointly with a local trade mark rather than used alone, in which case it is also desirable to state that the product is manufactured under licence from the licensor concemed. This procedure helps to build up gradually the name and product of the local manufacturer so that when the agreement expires and the foreign trade mark can no longer be used, manufacture can continue under the local trade mark alone. When it is considered essential to continue using a foreign trade mark either for general sales or more particularly for exports, a renewal of the agreement may become necessary on this ground alone.

## Restrictions on licensees

Many licence agreements impose restrictions in one form or another on licensees. The imposition of these restrictive clauses depends largely on the relative bargaining strength of the licensor and the licensee. The most important restrictions are those placed on sales territory or sales rights; on production; on pricing; on obtaining

know-how from others; and on purchase of components, spares and processed raw materials from others.

The most common restriction imposed by licensors is on sales territory. Both to limit the market of the licensee and to prevent the growth of a potential competitor in other markets, licence agreements sometimes restrict the sales to the country concerned or to a few surrounding countries. The licensee should resist any unreasonable restrictions in this regard. The agreement should provide, as far as possible, that sales will be permitted to all countries except where the licensor has set up similar manufacturing facilities either directly or through a licensee; where he has earlier given exclusive sales rights; or where the licensor is not legally empowered to extend selling rights. In all such cases, it is desirable to attach a list of countries to which sales will not be permitted under the agreement. Sometimes a clause is incorporated which provides that the licensee is granted unrestricted sales rights but that every export sale will require the licensor's approval. Such a clause can place the licensee in an extremely disadvantageous position. While it may not normally be necessary for the licensee to press for exclusive selling rights except in the country concerned and some surrounding countries, a non-exclusive right to sales in other countries, with the above-mentioned exceptions, is highly desirable. Another form of sales restriction is to grant the exclusive right to sell the products manufactured under the agreement to the licensor or to a distribution company in which he may have a controlling or an affiliate interest. Such a provision is usually contrary to the licensee's interest, unless the licensor's marketing knowledge and experience are essential for the licensee, particularly for export sales.

Other types of restrictions include a restriction on production beyond a certain level, which is sometimes imposed by licensors, usually in the case of lump-sum know-how agreements where no running royalty is provided. Such a restriction should not be accepted unless it is absolutely unavoidable. In some cases, the pricing of the product is made subject to the licensor's approval. Such a provision should also be resisted. In some agreements, the licensee is restricted from obtaining know-how from other parties. If such a restriction prevents a licensee from obtaining other techniques that are necessary or supplementary to his manufacturing programmes, including expansion of operations, it should normally be rejected. One of the most significant–and common–forms of restriction is on the purchase of imported components, spares and processed materials.

## Supply of components and intermediate products by foreign licensors

Apart from lump-sum fees and royalties, the most significant source of income to the licensor may come from supplying components, intermediate products and spares, items that he often manufactures himself. As has been pointed out earlier, the licensor may phase the technology transfer in such a way as to ensure a licensee's dependence on him for components and intermediate products for as long as possible. He may also link the technology transferred with components and intermediate products that he is in the best position to supply. In some cases, the nature of technological development may have been such that the final product and the intermediate products of the licensor are closely linked, e.g. chemical processes based on the use of certain catalysts. In other cases, components and intermediate

products can be secured from alternative sources that the licensee has to locate. While the relationship that grows between a licensor and a licensee itself affects the licensee's approach to arrangements for supplying components and intermediate products, the licensee does need to ensure that he is not placed in an unduly disadvantageous position. Thus, with regard to phasing of domestic production, he should try to establish appropriate backward linkages so that essential components and intermediate products are available domestically either through the licensee's own production or from other local producers. At the agreement stage, the phasing of local manufacture should be carefully assessed so that maximum domestic manufacture can be undertaken within the minimum period and necessary training programmes planned well in advance to achieve this purpose. Where the manufacture of certain components would have to be undertaken in ancillary and other enterprises, the local licensee may have to assist actively in the promotion and establishment of such ancillary plants. The licensee should also locate alternative foreign sources of supply for items whose local production is not considered practicable for some time.

The degree of price advantage, if any, that licensors may enjoy from supplying these items will vary from project to project, depending on the product, the knowledge that a licensee may have regarding pricing from alternative sources, and the provision made in the know-how agreement. Where the intermediate product is manufactured only by the licensor or where he enjoys a semi-monopolistic position, the licensor is naturally in a very strong position. There is a high probability of a price mark-up on many items ranging from intermediates for drugs and chemicals to major components and subassemblies. Even where alternative sources of supply are available, the bargaining position of the licensee regarding the pricing of intermediate products depends on his knowledge of alternative sources and the prices he can obtain from the licensor's competitors. For even relatively simple components, a licensee may pay high prices to the licensor if he cannot locate competitive sources. It is extremely difficult to arrive at an empirical assessment of the extent of price mark-up, if any, that may be involved in many agreements. Where components and intermediates are tailor-made for certain final products, it is often impracticable to evaluate the cost of possible alternatives. Even in the automotive industry, where the extent of "bought-out" components is fairly great, the degree of substitutability of components may be quite limited, often because of the difference in designs. The licensee should, however, be aware of possible alternatives and their prices.

The dependence of the licensee increases greatly where tie-in clauses have been incorporated in the agreement. It is not uncommon for licensors to insist on a clause providing that the licensee shall obtain all supplies from abroad from the licensor or that the licensee shall undertake to buy from the licensor certain parts and components, which are listed. Sometimes this provision is put conversely, namely, the licensor agrees to supply the listed parts and components, but the effect is more or less the same. Where the licensor feels that the Government may not permit tie-in clauses or may impose certain provisos in this regard, as in India, the agreement may prescribe only the general intention in this regard, and a separate contract for the supply of such items is entered into.

From the licensee's viewpoint, a tie-in clause regarding supply of components and intermediate products may be necessary when the intermediate product can be supplied only by the licensor. This situation is relatively rare but may arise because technological developments may make it difficult to obtain certain components and

intermediate products from another source. In such a case the licensee should see that the agreement provides for assured supplies from the licensor, at least for the duration of the agreement. With regard to pricing also, it may be necessary to provide a specific price or prices for such items, together with an agreed formula for variations in prices during the period of the agreement.

The licensee should resist a tie-in clause as far as possible if he can locate alternative sources of supply of components and intermediate products. The licensee should try to obtain these items from the most competitive source. While this applies particularly to engineering industries, it applies equally to chemical and other industries, where the price of intermediate products can vary greatly. Despite the licensee's efforts, however, the licensor may insist on some form of tie-in clause regarding supplies of components and intermediate products. If so, the licensee should try to ensure that the price of such components and intermediate products is not unreasonably higher than the general market prices.

To sum up, the licensee should pay attention to the following points:

*(a)* The technology licence agreement should provide that the licensor will supply components and intermediate products at internationally competitive prices. The manner of determining such prices should also be prescribed as far as possible.

*(b)* The agreement should include, if possible, a "most-favoured-licensee" clause, that is, if the licensor supplies the same component or intermediate product to any other licensee at a lower price during a specified period, the benefit of the lower price will be passed on to the present licensee also.

*(c)* The agreement should provide that when the licensor supplies "bought-out" components and intermediate products, the price to be charged to the licensee will be the same as the price paid by the licensor, plus any handling and other charges that the licensor may have incurred.

*(d)* Where a licensor is a manufacturer of the components and intermediate products, the agreement can provide that the price to be charged to the licensee for such component/intermediate products shall not be higher than the cost at which such items are entered in the books and accounts of the licensor at the next stage of production in his own plant. In such cases, the cost entries in the books of the licensor should be duly certified by the company's auditors or should be available to the licensee.

While inclusion of some of the above provisions may reduce the likelihood that the local licensee will have to pay a mark-up on components and intermediate products, the licensee's real protection lies in obtaining fullest information on alternative supplies and prices and ensuring that tie-in clauses for purchase from the licensor are avoided when alternative sources of supply exist.

## Governing law

The licence agreement should specify which governing law is applicable. As far as possible, the governing law should be the law of the licensee's country. However, the licensor may be bound by certain enactments in his own country. If the agreement deals with industrial property rights in more than one country, the possibility of mandatory provisions of industrial property laws of those countries should be taken into account.

## Currency of payment

Each licence agreement should specify the currency in which payments are to be made and the determination of value in terms of convertibility. If this is not specified clearly, the payments originally negotiated may diverge sharply from the payments that may become necessary following the devaluation or revaluation of any currency. Licensors from developed countries normally prefer to receive payments either in their own currency or in a convertible currency. The licensee needs to be sure that whatever payment is agreed upon, the value of the large payments, e.g. lump-sum fees (payments for major equipment) does not differ materially following a revaluation/devaluation. This can be done, for instance, by providing a fixed rate of convertibility between the local currency and the currency in which payments are to be made on a particular date, such rate being applicable to lump-sum payments for know-how, which is usually a significant part of the total payment.

## Inspection and reporting

Where licence agreements involve running royalties or continuing supply of know-how, the licensor provides for access to the licensee's plant and books of account and for regular reporting of production, sales and other information relevant to the agreement. It may also be necessary for the licensee to have access to the licensor's manufacturing plant and operating facilities. In some cases, access to particular facilities such as the designs branch of the licensor may be required and should be provided for.

## Training

Agreements should provide for the training of local personnel. This is extremely important, since a well-planned training programme is essential for adequate absorption of technology. Before the provisions of the agreement are negotiated, the local training facilities in the developing country should be thoroughly investigated as well as in-plant training in the licensor's plant or in some other foreign manufacturing unit, wherever this may be considered necessary. It is desirable to draft job descriptions for the key skilled personnel and to build the training programme around such requirements, including the timing of such training and the selection of trainees. The provision in the agreement relating to training should define the number and qualifications of the licensee's employees to be trained and the period of training for each category of staff.

## Most-favoured-licensee clause

The inclusion of a most-favoured-licensee clause in a licence agreement can be of great advantage to the licensee. This provides that if the licensor grants more favourable terms to a second licensee, he will grant them also to the first licensee, and the licence agreement will be modified accordingly. Normally, the licensor is reluctant to incorporate such a clause, especially if the technology is likely to be

licensed to several parties. Where the licensor has, however, agreed to such a clause in other technology agreements, he may be willing to include this clause in the current agreement also. Even where the most-favoured-licensee clause is not adopted for the agreement as a whole, it can be very usefully applied to the pricing of components and intermediate products to be supplied by the licensor to the licensee.

## Language

It is necessary to define the language of the authentic text of the agreement and the language in which the details of the technology will be supplied. This applies to both the language of the documentation and the systems of units in which calculations and measurements will be supplied by the licensor.

## Termination

A licence agreement normally terminates at the end of a stipulated period. It can also be terminated for a serious breach of the agreement or for specific causes, such as bankruptcy, which should be stated in the agreement. In the case of know-how agreements involving running royalties, the licensor's interest is to ensure that the licensee develops production capacity as speedily as possible. When, however, production does not take place despite a considerable lapse of time, the licensor may prefer to terminate the agreement with the particular licensee and may include a clause for this purpose. If such a provision is accepted, the terms should be reasonable from the licensee's viewpoint. In some agreements, provision is made for termination, after due notice, by either party. Care should be taken that the licensor cannot terminate a know-how agreement unilaterally except for strong and valid reasons that are specified in the agreement. Licensees are sometimes required to return the documentation and technical information to the licensor and are not permitted to use such information after the agreement has expired. The licensee should not accept a clause to this effect. In fact, the agreement should provide that the licensee will be able to use the know-how after the agreement has expired.

## Arbitration

Every licence agreement normally contains a provision for the settlement of disputes through abitration. From the licensee's point of view, it would be desirable to have arbitration proceedings conducted in his country. Alternatively, the agreement may provide for recourse to the International Chamber of Commerce. The manner of selecting arbitrators, the procedures to be followed in the arbitration proceedings, the place of hearings etc., should be specified in the agreement.

## Force majeure

Some technology agreements contain a clause relating to *force majeure*, protecting the parties from claims for any defaults in their contractual obligations caused by acts of God or nature, occurrences over which they have no control. Such

a clause has limited relevance in an agreement for acquisition of manufacturing technology, except with respect to defaults by the licensor in delivery of documentation etc. relating to the technology. When such a clause is included, however, it should apply to both parties. The *force majeure* clause is of much greater significance when the agreement covers composite technology, where non-delivery or delayed supplies of basic engineering data or of machinery supplies can be due to a much greater extent to such causes. It should be ensured that this clause is not drafted in such a manner as to enable the supplier of the technology to avoid responsibility for any lapse or default that may occur for reasons that could have been anticipated or over which he had some control.

The above analysis is not intended to be an exhaustive examination of each and every clause that is incorporated in a technology licence agreement, nor should it be understood as an indication of standard provisions. It is, however, desirable for licensees to be fully aware of the implications of each of these clauses.

# VI. THE ROLE OF GOVERNMENTS IN DEVELOPING COUNTRIES

Because of the difficulties developing countries face in acquiring foreign technology, Governments must play an active role in these countries to ensure that an adequate flow of technology into key industrial sectors takes place on terms that are in the interest of the country. Government authorities must thus play both a promotional and a regulatory role. An inadequate flow of modern production and management techniques may not only increase the technological gap between developing and developed countries but may even retard the rate of growth in key sectors. Similarly, indiscriminate and unrestricted import of foreign technology without reference to costs and needs can also create economic pressures and distortions, which tend to be aggravated over a period of time. With limited resources and various objectives to be achieved through economic policies, the pattern of foreign technological inflow should be closely dovetailed with the general pattern of industrial growth in any developing country.

## Promotion

The Government's promotional role is necessary both to secure foreign know-how and to create conditions that are favourable for the inflow of technology in desired sectors. To acquire technology and equipment for key manufacturing sectors, Governments negotiate bilateral agreements with other countries. This procedure is followed when technological assistance is secured from the Union of Soviet Socialist Republics and other countries with centrally planned economies but also when technology is acquired from enterprises in the developed market countries. Payments for technology frequently have to be fitted into one or other "aid package" in countries where foreign exchange is scarce. In this case, Governments have to select and determine the source of foreign credits. Government institutions such as finance or investment corporations have to guarantee payments for technology and equipment, which may be spread over a period of time.

Governments have a particularly important promotional role to play when manufacturing enterprises in the public sector acquire foreign technology. The number of public-sector enterprises is increasing in developing countries. Since foreign capital may not be available for investment in many public-sector projects, the Government will, most likely, have to provide the necessary funds, including foreign exchange.

Government promotional activities should also include: *(a)* the identification of technological and production gaps in the economy where foreign technology inflow is considered essential; *(b)* the funnelling of information regarding specific technology requirements to foreign companies and organizations possessing such know-how; and *(c)* the provision of advisory services to domestic enterprises and entrepreneurs.

### *Identification of technology gaps*

It is important to make foreign companies aware of the sectors for which a country particularly wishes to obtain foreign technology. It would be desirable for the Government to draw up a list of the principal sectors in which foreign technology could be used advantageously to promote industrial growth; the list would also indicate the extent to which direct foreign investment would be welcome. Such a list would be difficult to draw up and would have to be reviewed periodically in the context of new developments.

### *Information to foreign enterprises*

Information on prospects for investment in a developing country can best be compiled and disseminated by the Government through various agencies in the industrialized countries. The information should include projections of demand in essential production sectors, including agricultural inputs, technical service facilities, basic industrial raw materials and consumer goods, intermediates and capital goods. While prospective licensees from developing countries will still have to approach foreign licensors to obtain technology, licensing agreements will be easier to conclude if the host Government considers a particular project or type of technology essential to the country's industrial development programme.

### *Advisory services*

Domestic enterprises in developing countries often require considerable assistance in obtaining basic information on alternative technology available in various fields and the sources of such technology. This information needs to be regularly collected either by the commercial and trade sections of a developing country's embassies and collated on an industry-to-industry basis or directly through business and technical journals by an agency set up for this purpose. Industry should also be given advice on drafting technology licence agreements. In developing countries, where experience in this field is often limited, such an advisory service could best be provided by a government agency.

## Regulation

### *Reasons for regulation*

Besides actively promoting and encouraging the flow of technology into desired industrial sectors, Governments of developing countries need to regulate this inflow to a certain degree. An unrestricted inflow of foreign techniques and processes in all fields may create social, technological and economic problems, problems that will differ from country to country depending on the level of industrial growth. Apart from basic resource constraints, which make a degree of regulation necessary, particularly in countries where there is shortage of foreign exchange, the impact and cost of acquiring technology have to be carefully assessed.

The unrestricted inflow of technology has a socio-technological impact on an enterprise, on the industry relating to the enterprise and on indigenous research efforts. Frequently the recipient enterprise becomes completely dependent on the

foreign supplier of technology. In sheltered markets, where local manufacturers enjoy a monopolistic or semi-monopolistic position, little effort is made to adapt and develop the technology acquired. Technology is absorbed very slowly unless the local enterprise knows that the technology agreement has a relatively short duration. In countries where such agreements are renewed successively without much difficulty, and this is the usual pattern, the local enterprise comes to depend on its foreign partner or licensor for technical assistance it could develop locally with a little effort. The foreign licensor usually welcomes the renewal of agreements because royalties will continue. The insistence on limited duration of technology licence agreements in India is as much due to the need for local enterprises to absorb foreign technology and to stand technologically on their own feet rapidly as to the desire to terminate royalties and other payments within a reasonable period.

The acquisition of foreign technology and the use of foreign engineering consultants by one enterprise often discourages the use of indigenous facilities by other enterprises. When one enterprise seeks foreign technological expertise, other enterprises follow suit. Competition is particularly keen when the foreign technology is as much a question of the trade mark as of superior techniques. Preference for using foreign trade marks and the services of foreign experts continues to exist in many developing countries, for historical and other reasons. Thus, indigenous research and the development of local technology and service facilities are placed at great disadvantage. Such a situation may require government regulation of imported technology.

The effectiveness of indigenous research efforts can be greatly reduced if technology imports are not properly regulated. This is not to suggest that enterprises must wait until indigenous research catches up with foreign technology, which, in many sectors, it may never do. It would, for example, be very unwise to wait two or three years for domestic research to prove itself commercially in a field where foreign technology can be acquired promptly on satisfactory terms. The use of indigenous research and development, however, has to be actively fostered, and the pattern of technology inflow should take this factor into account.

The establishment of effective domestic research facilities is an important prerequisite for creating a strong technological base in a developing country. In most developing countries, indigenous facilities can only be created and fostered deliberately through the exercise of regulatory authority. The growth of domestic technology and consulting engineering services should ultimately result in the capacity of domestic enterprises to adapt and develop acquired technology and to expand with the assistance of locally developed inputs. Until such a stage is achieved and a two-way flow begins to take place with developed countries, the type of technology and the technological services to be acquired from foreign sources must be selected carefully. Whether it is necessary to define the fields where foreign technology will not be allowed in order to permit the growth of indigenous research and development or to reduce the total outgo of technology payments depends on the circumstances of each country. The acquisition of foreign technology should not be encouraged in fields where it is either unnecessary or where domestic technology is adequate. Foreign technology is expensive and its use must be justified in each case. Difficulties may arise in determining at what stage domestic technology is considered to be adequate. This is, of course, a matter of evaluation.

In negotiating with foreign licensors, the prospective recipient of technology often finds himself in an extremely weak position, and Governments have to

intervene to redress the balance to some extent. Whether by regulating the total payments involved or the extent of foreign investment or the use of expensive foreign engineering services, the Government can mitigate, to some extent, the disadvantages that a licensee enterprise, or the economy as a whole, may face as a result of a particular agreement.

### *Areas subject to regulation*

Each project should be subject to review by the regulatory agency with respect to the following:

*(a)* The extent and terms of foreign equity participation;

*(b)* The phasing of domestic manufacture;

*(c)* The type of foreign technological services to be obtained;

*(d)* The appropriateness of the particular technology;

*(e)* The terms of payments for technology and likely outflow of foreign exchange;

*(f)* Specific provisions in the technology licence agreement, particularly restrictive and tie-in clauses imposed by the licensor.

The regulatory role of the Government should primarily be to ensure that certain broad guidelines it has laid down are observed and that, in the event of deviations, the reasons for such deviations are adequately justified.

### *Foreign equity participation*

It is desirable for Governments to define their basic policy on foreign investments and to indicate the sectors in which foreign majority ownership or substantial equity participation will be permitted in the future. In this connexion, the policies governing existing foreign companies should also be broadly prescribed. To the extent that foreign majority ownership is discouraged or restricted in new projects, licensing arrangements assume greater significance. In regulating foreign equity participation, however, Governments should be flexible.

### *Phasing of domestic manufacture*

The phasing of domestic manufacture in projects involving foreign technology is receiving increasing attention in many developing countries. While the manufacture of the final product is important, it is equally important to build up progressively a system of backward linkages whenever it is economically feasible. Local capital and entrepreneurship can take over production of various components through such linkage, particularly in the engineering industries. Where such linkages involve large investments, as in the manufacture of basic ingredients for the drug and pharmaceutical industry, such gaps should be covered, where possible, through new investments by other parties or through backward linkages by the same firm in the process of growth. The agricultural machinery industries, automotive industry, railway rolling stock manufacture and the like are becoming indigenous as a result of insistence on increased content of domestic manufacture. Private businessmen may

find it difficult to negotiate with foreign parties on the phasing of domestic manufacture. For this reason, it is preferable for the government agency to regulate the phasing of domestic manufacture in a licence agreement. Since foreign licensors are normally interested in supplying components and intermediate products required in the process, it is important that the government agency clearly define the extent of domestic content to be achieved within a certain period. Otherwise, difficulties in the phasing of domestic manufacture may arise.

An important aid to programming of manufacture is the use of import restrictions to regulate the flow of components and intermediate products. The regulatory authorities may have to resort to such measures whenever domestic licensees are willing, often under pressure from licensors, to accept a less rigorous indigenization programme.

*Foreign technical services*

When the regulatory authority in a developing country considers an enterprise's request for foreign technical services, it must not only take into account the foreign exchange involved but also determine whether domestic facilities and services can adequately serve the same purpose. Such adequacy is, for the most part, extremely difficult to determine. Where complex techniques are involved, it is often difficult to draw any sharp line of distinction between certain aspects of basic engineering and the manufacturing technology, since the technology may be an integral part of the plant design itself, and no demarcation is possible. A reduction in the foreign technical services requested in such cases would largely have to be confined to functions that local agencies can clearly and indisputably perform. That the regulatory authority might consider a reduction, however, would have a salutary effect, and the local entrepreneur would tend to take the factor into much fuller account in the course of his negotiations.

It is Indian policy, when foreign consulting services are contracted for because of a lack of local services, to insist that the prime consultant be Indian. This policy has been applied to good effect in several major projects and has helped local consulting organizations to acquire more skills and experience. Such a policy, however, presupposes the existence of local consulting services in a variety of fields. Such services usually have to be built up gradually; this can be done through the judicious regulation of requests for foreign technical services.

Many developing countries regulate to a considerable degree the employment of foreign technical personnel. Such regulation may prove to be a disadvantage, as technological skills in carrying out operations can often be very effectively transmitted through such personnel. While, in general, posts should be manned by nationals, this is possible only to the extent that qualified nationals can be found. Foreign technical experts should be retained until local personnel have been trained in the new techniques and processes.

*Choice of appropriate technology*

The policy issues with respect to appropriate technology in the present context generally relate to *(a)* the volume of imports of capital goods and imports of raw materials, intermediate products and components following from the use of a particular technology; and *(b)* the capital-intensive nature of a technology vis-à-vis possible alternatives. Of the two aspects, the first is far easier to evaluate in

quantititative terms. The interests of a particular licensee and that of the economy may not be the same, particularly in countries facing a foreign-exchange problem. A particular technology may not be considered appropriate from a country's viewpoint because of the heavy long-term commitment to import that may be involved. Imports have been rising sharply in many developing countries where substantial industrial growth is taking place. For the individual domestic entrepreneur it may be commercially profitable to choose a particular technology which, for the country, would be a loss.

The appropriateness of a particular technology from the viewpoint of how much employment it will create is extremely difficult to assess. Whether a particular technology is appropriate should really be investigated when the project is conceived and not when the negotiation stage is largely over.

*Payments for technology*

The purpose of government regulation of payments for technology is to ensure that disproportionately high payments are not made for particular technology and techniques. The Government should establish guidelines prescribing *(a)* a formula for computing the base figure on which a percentage royalty could be charged; *(b)* the percentage royalty considered reasonable in various sectors, based on past domestic experience and experience in other countries; and *(c)* the relationship between technology payments and the extent of foreign capital holdings in an enterprise.

A formula for calculating the royalty base that is often used, as discussed in chapter V, is an agreed percentage of total volume of sales from the licensee enterprise minus the value of components and intermediate products imported from the licensor. Any major deviations from whatever formula is adopted should be reviewed by the regulatory agency. The royalty base to be applied to various sectors is an important subject of negotiations. However, the regulatory agency should adopt a flexible approach, since the conditions of technology transfer vary so greatly. Regarding the relationship between technology payments and extent of direct foreign investment, only general principles can be laid down. In some countries, the practice is generally not to permit royalty payments to parent companies when the foreign subsidiaries are wholly owned. When the foreign partner has a majority holding, the payment for technology will normally be less than it is when the foreign partner has a minority holding or there is no equity participation.

It may often be difficult for a regulatory agency to determine the reasonability of the total payments for any technology when comparable figures for similar technology are not available. In the course of the negotiations between the licensor and the licensee the worth of each element of the package has been broadly established. If the recommendations of this study have been acted upon, the role of the government agency in evaluating the size of the payments and other aspects of the agreement in terms of the benefits to be derived from the foreign technology will be simplified. This facilitates decision making on the part of the agency.

*Restrictive and tie-in clauses*

In reviewing licence agreements, the regulatory agency should give special attention to restrictive clauses dealing with sales rights, sales territory etc. and tie-in clauses dealing with purchase of components, intermediate products and the like. The principles to be followed in considering such provisions have been discussed in

some detail in chapter V. While restrictive and tie-in clauses should, in general, be avoided, no set rule can be laid down. A pragmatic approach is necessary, for example, in considering non-exclusive sales rights to different countries. There may be little relevance, for example, in insisting on export rights to all countries for a product based on sophisticated technology when the agreement has only a short duration (about five years). Again, a tie-in clause for materials and component supplies need not be detrimental to the interests of a domestic licensee if pricing is on an internationally competitive basis for such materials and components. These issues need to be viewed in the particular context of each proposal.

## Summary

An effective balance must be maintained between the promotional and regulatory roles of the Government. The inflow of new technology and techniques is a prerequisite for an accelerated rate of growth in various industrial sectors in developing countries, and the Government should encourage and promote this inflow. At the same time, certain aspects of such inflow need to be regulated, not only in the interests of the individual domestic enterprises but, more important, in the interests of the economy as a whole.

# VII. A GOVERNMENT REGULATORY AGENCY

A government agency with powers to regulate the transfer of technology may take various forms. In view of the close relationship between direct foreign investment and inflow of technology that continues to exist in most developing countries, it may be desirable to assign the responsibility for reviewing technology agreements to an agency dealing with foreign investment. Many developing countries have set up a foreign investment board (though the name may differ) to process proposals for direct foreign investment. In some countries, however, the government ministries concerned consider such proposals. Even where wholly owned subsidiaries are welcome, potential foreign investors have to approach the Government for approval of their proposals at some stage. The advantage of setting up a government agency is that proposals receive specific and detailed attention from a body which can gradually build up considerable knowledge and expertise on the subject and can ensure a basically uniform approach to various proposals.

The degree of authority the agency exercises will vary from country to country. Whether the agency is a semi-autonomous body with substantial powers and authority or a separate body with primarily advisory functions or a part of the Ministry of Finance and Industry depends on the circumstances of each country. Whatever the degree of its authority, the agency must exercise certain basic functions with respect to both foreign investment and the inflow of technology. The most suitable structure would perhaps be a Board for Foreign Investment and Technology on which the ministries concerned could also be represented.

The boards of investment that have been set up in various developing countries are, in general, similar in composition. In India, the Foreign Investment Board consists of senior government officials from the ministries concerned and the directors of the technical development and industrial research organizations. The board examines all proposals relating to foreign investment and technology licence agreements; a decision is usually in the form of a consensus. In other countries, the chairman of the board is the executive authority and approves decisions and recommendations to the Government. The board may be composed of both government officials and leading industrialists and financiers. It must be emphasized, however, that the composition should reflect a very close relationship between the agency and the Government.

One of the functions of the board is to promote the inflow of technology. It should be the responsibility of the board to *(a)* locate the major technological gaps in the economy, both in terms of manufacturing techniques and of goods that are not being produced in spite of favourable local factors of production; *(b)* advise local entrepreneurs regarding possible foreign sources of technology in various fields; *(c)* advise local entrepreneurs on the negotiation and drafting of technology licence agreements; and *(d)* channel information to potential foreign investors and licensors on possibilities and opportunities for commercial transfer of technology.

To be able to exercise these promotional functions, the board will have to employ technical experts in various fields. A comprehensive reference library will have to be established and kept up to date in respect of technological developments in industry. Certain experts will be needed to locate sources of technology and others to assist in drafting contracts. In identifying major technological gaps, the board will have to work closely with planning agencies so that efforts to cover specific gaps at a particular time will dovetail with national priorities. Local expertise may initially be very limited, but it will grow rapidly as experience is gained.

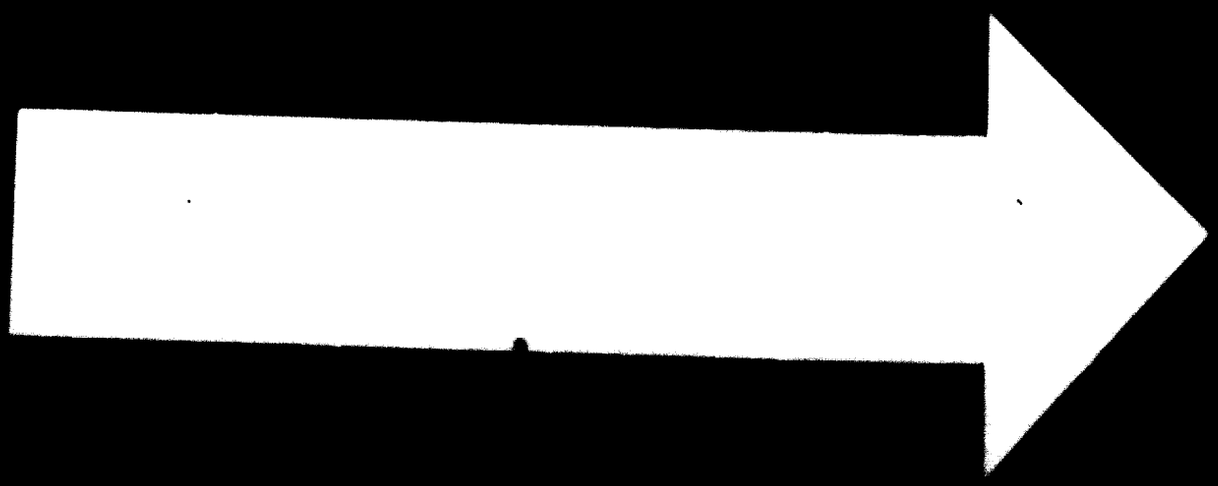
The board should normally not conduct the negotiations with foreign licensors and suppliers of technology. Difficulties could easily arise if the board were to be directly involved in negotiating numerous technology contracts in a variety of industries; to undertake such negotiations would require vast competence that the board might lack. Thus, it is more appropriate to leave detailed negotiations, or renegotiations where necessary, on the technology and technical assistance to be obtained to the domestic enterprise concerned, although the board may give the enterprise all possible advice. Furthermore, if the regulatory agency were to assume the role of negotiator, it might retard the building up of local entrepreneurial knowledge and expertise on the intricacies of commercial technology transfer, which also needs to be developed.

The regulatory agency should serve as a link between domestic industry and foreign industrial groups by keeping the latter informed of technology licensing possibilities in the developing country concerned. Many developing countries maintain investment-promotion centres in industrialized countries. The scope of such centres should be expanded to cover the flow of technology through licensing, an aspect that is often not given the same emphasis as investment promotion. Such centres should also be an important source of feedback of information regarding technological developments in industrially advanced countries.

To become valid, a technology licence agreement should receive the approval of the Government or of the regulatory agency. In some countries, such prior approval is required because the release of foreign exchange for payments under the agreement requires approval. In other countries, such as the Andean Group, government approval of a licence agreement is required by law. In some developing countries, however, little or no control is exercised in this regard. Though proposals for foreign investment are examined in most developing countries, even where such investments are most welcome, agreements for the supply of technology usually receive little attention. Thus, it may be necessary to provide, either through law or foreign exchange regulation or by such executive measure, that technology licence agreements should be registered with and be subject to the approval of the board or other executive agency prescribed for this purpose. It would be desirable to have all proposed agreements registered, though it may be left open whether agreements providing for lump-sum payments up to certain limits would require approval if no restrictive or tie-in clauses were involved.

Once a requirement for the registration and approval of proposals has been introduced, it is necessary to prescribe a form for submitting them. In Japan, the form is relatively simple, while in India, it is very detailed.

Applications must be evaluated and processed from both the technological and contractual viewpoints. The agency should deal with contractual matters, but it may not be desirable to assign to the agency responsibility for evaluating the technological aspects of a project in view of the complexities involved. In some countries a separate



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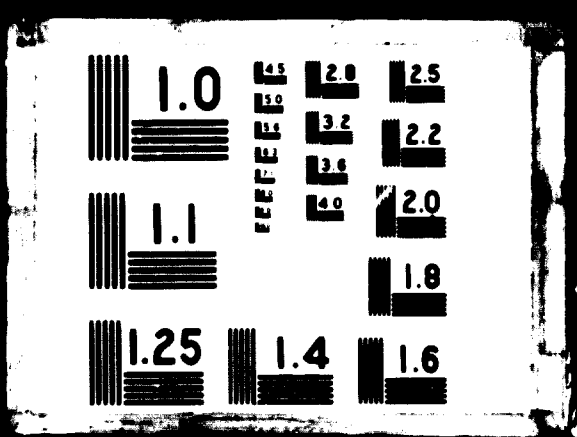

organization has been set up to process proposals from the technological viewpoint. Where such a body does not exist, a group of technicians can be set up within the regulatory agency, or the proposal can be sent to the concerned government department for its views if the department has the necessary experts. After the proposal has been processed from these two viewpoints and such processing involves fairly detailed examination of the proposal the board considers the proposal in the light of guidelines prescribed by the Government. The proposal is either approved, with or without modifications, or rejected. When renegotiations may be required as a result of action by the board, such renegotiations should be conducted by the domestic enterprise concerned and the final position indicated to the agency. When an agreement has to be drafted after receipt of approval of the board or agency, the agreement should be forwarded to the agency for registration. The agreement should provide that payments can be made only after registration.

The broad procedure outlined above may take some time, the length of which will naturally depend on the nature of the proposal and whether some aspect requires detailed examination. It must be stressed, however, that one of the main responsibilities of the board should be to process proposals expeditiously. One of the criticisms often levelled in developing countries is that interminable delays occur in processing proposals. A period of six weeks to three months should be the maximum period for processing any proposal.

An important function of the board is to follow up proposals that are approved. The lack of such follow-up can be a major flaw in the effective functioning of such an agency. Information should be fed back regularly either annually or biannually as to experience with the licence agreement and the manner of functioning of the domestic enterprise following the acquisition of the new technology. Mention should be made of the degree of absorption of the technology and the extent of adaptation that proved necessary or desirable in each case. Only through a continuous review and evaluation of the impact of foreign technology over a period of time can an effective policy on the acquisition of technology be formulated. In formulating such a policy the regulatory agency should play a significant role.

# VIII. CHECK LIST FOR LICENSEES NEGOTIATING TECHNOLOGY LICENCE AGREEMENTS

The purpose of this check list is to highlight the important provisions that are usually incorporated in a technology licence agreement and that a licensee needs to consider before or in the course of negotiating such an agreement. In using this check list, it would be advisable also to refer to the more detailed discussion of these issues in earlier chapters. The check list is not intended to be exhaustive.

## Preliminary steps

### *Project information*

The licensee should assimilate adequate information regarding:

*(a)* Basic data on economic feasibility of the contemplated project, including plant capacity, demand projections and estimated manufacturing costs;

*(b)* Details on raw materials and inputs required and availability of such inputs, including technical skills, within the country;

*(c)* Phasing of manufacture contemplated, indicating possible sources of supply for processed materials, intermediates, components and spares required for each phase;

*(d)* Patents, if any, relating to the product or process—whether such patents have been granted in the licensee's country and the life of such patents as are granted.

### *Selection of technology*

The following steps are recommended:

*(a)* It should be determined that the technology has been commercially proved yet is not obsolete;

*(b)* Alternative technologies that may be available should be evaluated comparatively on the following points:

Cost of obtaining such technologies

Principal inputs required and their local availability

Estimated manufacturing costs and profitability

*(c)* Where the technology has to be obtained from a particular country because of foreign exchange limitations or other constraints, a comparative evaluation should still be made, to the extent possible, as in *(b)* above, for purposes of negotiation.

*Selection of licensor*

To determine the suitability of a particular licensor, it is necessary to:

*(a)* Evaluate the position of the licensor vis-à-vis other foreign parties from whom the same or alternative technology can be obtained;

*(b)* Assess the licensor's experience and capability of providing the technical assistance required;

*(c)* Obtain information on the size of operations and nature of product mix, where the licensor is a manufacturer;

*(d)* Ascertain the licensor's past licensing experience.

## Provisions of the technology licence agreement

*Description of technology and technical assistance*

The agreement should specify the:

*(a)* Principal features of the technology or process being acquired;

*(b)* Anticipated production to be achieved;

*(c)* Quality and specifications of products;

*(d)* Particulars of technical assistance to be rendered by licensor (which may be listed in detail in an annex) indicating the extent at each stage;

*(e)* Manner in which the technology and technical services should be provided.

*Access to improvements during agreement period*

The agreement should, as far as possible, provide that:

*(a)* The technology to be supplied incorporates the latest developments known to the licensor;

*(b)* The licensee will be informed of, and given full access to, improvements in technology effected during the agreement period, including new patents applied for or registered;

*(c)* If the licensor incorporates a provision for "grantback" of improvements effected by the licensee, the terms of such "grantback" are clearly specified.

*Guarantees*

The agreement should contain specific guarantees:

*(a)* Where technical assistance is provided for various stages of implementation of a project, the licensee should seek to obtain guarantees, as far as possible, to cover the various stages;

*(b)* Performance guarantees with compensation in default of performance should be obtained for supply of machinery, equipment and supplies; these guarantees should also cover basic engineering services and composite supply of technology;

*(c)* Though specific performance guarantees may be difficult to obtain for a given manufacturing process, the agreement should define the production capacity, product quality and specifications and other features of the process, together with conditions to be fulfilled by the licensee;

*(d)* A guarantee clause may be provided, if considered necessary, for prompt communication and/or supplying of technical information, drawings, specifications and other documentation comprised in the know-how.

### *Remuneration*

The total amount of payments over the period of agreement should be carefully assessed, and the following points borne in mind:

*(a)* The licensee should work out the implications of lump-sum payments and/or running royalties and should try to negotiate the most suitable arrangement;

*(b)* Where running royalties are involved, the rate should not normally be higher than rates paid by other licensees in the country or in other countries;

*(c)* It would be undesirable to agree to a minimum annual royalty unrelated to production or sales;

*(d)* The royalty base should be carefully assessed—the ex-factory value of total sales may be an acceptable and convenient base for computation;

*(e)* If production or sales constitute the royalty base, the value of processed materials, intermediate products, components and spares supplied by the licensor should be subtracted before the figure on which the percentage royalty will be charged is determined;

*(f)* Where a foreign party is also responsible for management, the licensee should seek to link royalties with profitability;

*(g)* Royalties should be subject to taxes; licensees should not assume liability for net payments after tax.

### *Duration*

From the licensee's viewpoint, the duration of the agreement should be as short as possible, provided that:

*(a)* The period is adequate for full absorption of the acquired technology in the licensee's plant;

*(b)* The life of any patents relating to the technology has been taken into account; where the validity of the patents extends beyond the period of the agreement, the arrangements to cover this subsequent period should be defined.

### *Exclusivity*

The licensee should seek to obtain an exclusive right for manufacture and sale at least within his country.

*Patents*

Points to be covered relating to patents include the following:

*(a)* The agreement should provide rights in respect of all patents relating to a given process, such patents should be listed in the agreement;

*(b)* Infringement of third-party patent rights should, as far as possible, be the responsibility of the licensor. Joint action by the licensor and licensee should be provided for in respect of all claims arising out of possible infringement;

*(c)* Joint action should also be provided for in the event of infringements by third parties.

*Sales territory*

A licensee should be able to sell in his country and all other countries except where the licensor is manufacturing directly or where he has given exclusive rights to others or where he is legally not empowered to allow sales based on his technology.

*Sublicensing*

From the licensee's viewpoint, it is desirable to have sublicensing rights. Such rights may, however, be exercised only on terms and conditions acceptable to the licensor.

*Confidentiality*

While a clause relating to confidentiality is normally incorporated, the licensee should avoid any unreasonable contractual obligation in this regard, particularly in respect of the licensee's personnel.

*Procurement of components and intermediate products*

*(a)* The licensee should determine alternative sources of supply as far as possible;

*(b)* A clause binding the licensee to purchase all imported components and supplies through the licensor should be avoided, unless no suitable alternative source is available;

*(c)* Where a clause is incorporated providing that components and imported supplies will be obtained through the licensor, the licensee should seek to include the following stipulations:

Prices are to be based on international competitive prices, with the manner of determining such prices described;

The most-favoured-licensee clause will apply to pricing;

Where the licensee's supplies are "bought-out" components and intermediate products, the price to be charged to the licensee will be the same as those paid by the licensor plus reasonable handling charges;

Where the licensor is a manufacturer of such components and intermediate products, the price will not be higher than the cost at which such items are entered in the books of the licensor at the next stage of production.

*Currency provisions*

*(a)* Payments must generally be made in convertible currency;

*(b)* The licensee should try to ensure that initial payments for know-how are made in a foreign currency but at a fixed rate of convertibility on a particular date, such as the date of signing the agreement.

*Assignability*

The licensee should ensure that the licensor is not in a position to exercise unreasonable rights and authority in respect of assignment in the event of a change of ownership of the licensee's enterprise.

*Training*

The agreement should provide for adequate training in the licensor's works and facilities and in-plant training in the licensee's plant. In the case of the former, the number of persons to be trained, the areas of training and its duration, together with arrangements to be made for the training, should be defined in the agreement.

*Trade marks*

Where the use of a trade mark or the licensor's name is agreed to as part of the agreement or where there is a specific agreement for such use:

*(a)* The form, manner and extent of its use should be defined;

*(b)* From the licensee's viewpoint, it would be desirable to include on the licensee's product both his name and the name and trade mark of the licensor—whenever this is applicable; in such cases, the licensor also seeks to include a provision for quality control, which should be carefully drafted, taking into account any special problems the licensee may have to face.

*Most-favoured-licensee clause*

*(a)* Licensees should seek to have a most-favoured-licensee clause incorporated;

*(b)* If the licensor will not agree to a general clause, a most-favoured-licensee clause should be sought in respect of the pricing of intermediate products, components and spares that the licensee is required to purchase from the licensor.

*Inspection of licensee's books and reporting by licensee*

In most agreements covering payments in the form of continuing royalties, the licensor usually requires periodic reports from the licensee regarding production and sales as well as access to the licensee's books of account. The licensee should ensure that only such provisions are incorporated in this regard that are deemed necessary for the purposes of the agreement.

*Governing law*

The law of the licensee's country should preferably be adopted as governing law.

### *Termination*

*(a)* It is important that the licensee should be able to continue to use the acquired technology after the agreement expires. The licensee should not normally accept a clause in the agreement denying him this right, except in respect of patents where specific arrangements have to be arrived at if the life of the patents extends beyond the period of the agreement;

*(b)* A clause regarding premature termination is often incorporated. Where this is done, the grounds for such termination should be stipulated. Provision for a period of grace of up to 90 days should also be given to the licensee for correction of defaults.

### *Language*

The language of the agreement should be mutually agreed upon and should be defined in the agreement.

### *Arbitration*

An arbitration clause is usually included. This should specify:

*(a)* The place where the arbitration is to be conducted, which should preferably be the licensee's country but may be the International Chamber of Commerce;

*(b)* The manner and selection of arbitrators and the procedure for abitration.

### *Force majeure*

A clause relating to *force majeure* is often included. Where this is done, it should:

*(a)* Apply to both parties;

*(b)* Should not extend to causes for default that could be reasonably anticipated or over which the party claiming *force majeure* had reasonable control.

The extent to which a licensee from a developing country can incorporate suitable provisions on the lines indicated above will depend on the relative bargaining position and the nature of the relationship established between the two parties, and on the role played by the Government.

# *Annex*[a]

# LEGAL ASPECTS OF LICENCE AGREEMENTS

## INTRODUCTION

1. The purpose of this Guide is to give practical advice on the legal aspects of the negotiation of licence agreements dealing with the transfer of technology. It is intended for use by prospective licensees in developing countries and government officials in developing countries concerned with licence agreements.

2. The Guide consists of a list of points to be considered in preparing a licence agreement presented in the paragraphs below. The list is divided into four parts: the first deals with points common to all licence agreements; the second, third and fourth add special points relating respectively to patent licences, know-how agreements and trade mark licences.

### Definitions

3. For the purposes of this Guide:

*Patent* means an exclusive right, granted under the law, relating to the exploitation of a technical invention;

*Know-how* means information or skills relating to industrial manufacturing or the organization of an industrial enterprise;

*Trade mark* is a visible sign, protected by an exclusive right granted under the law, which serves to distinguish goods of one enterprise from those of other enterprises;

*Licence* means the consent given by the owner of an exclusive right (licensor) to another person (licensee) to perform certain acts which are covered by an exclusive right, or consent as to use of know-how (see also paragraph 7 below);

*Licence agreement* means the contract between a licensor and a licensee on the granting of a licence;

*Royalty* means a periodic remuneration, to be paid by a licensee according to the licence agreement, calculated per period or by reference to the extent of use by the licensee (e.g. volume of production or of sales).

### National laws applicable to licence agreements

4. A licence agreement can regulate only the relations between the licensor and the licensee, but its validity and effect will depend on the general legal situation in the country or countries to which the licence will apply. This situation will be governed by the law of contracts and possibly anti-trust law, as well as by the laws on patents and trade marks (questions of validity and conditions of protection); these laws may differ widely from country to country. For example:

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[a]The material in this annex was prepared by the World Intellectual Property Organization.

price-fixing by a licence agreement will sometimes not be allowed under national legislation applying to the agreement. Therefore, consideration should always be given to the question of which national law (or laws) will apply to the agreement.

### Patents and unpatented know-how

5. A distinction, from the legal point of view, is to be noted between the patent element and the unpatented know-how element of licence agreements. This distinction can affect both the substance of the negotiations and the drafting of the agreement.

6. So far as the patent element is concerned, the licensor owns the right to prevent others from performing certain acts (usually the acts of manufacture, use and sale) in those countries in which he holds patents. The licence agreement should specify the extent to which the licensee may perform one or more of those acts and the countries in which he may do so. It may also specify the technical scope of the patents that is covered. The duration of the agreement will frequently be that of the patent or patents covered but may also be shorter.

7. So far as the unpatented know-how element is concerned, no proprietary rights exist in respect of which a "licence" in its true sense could be granted. (Nevertheless, the word "licence" is in general use in connexion with such agreements.) Once the know-how is transferred, any restrictions on the manner or the territory of its exploitation can be enforced only if they have been made the subject of express provisions in the agreement. The duration of a licence concerning know-how will be freely determined by the parties concerned, but consideration should be given to the question whether rights or obligations will exist for any of the parties after termination of the licence (e.g. regarding the secrecy of the know-how, its further use or the sale of stock of products, the return of technical documents etc.).

8. Even in a mere patent licence, agreed restrictions affecting countries in which the licensor holds no relevant patent would require express provisions.

### Trade marks

9. Trade mark licences are similar to patent licences. In respect of territories where the licensor has established rights by registration, use or otherwise, the agreement should specify the extent of the licence granted; in respect of territories where he has no such established rights, the agreement should specify any restriction accepted by the licensee in respect of the use of the trade mark.

### General

10. If a licence agreement relates to several elements, e.g. to more than one patent, or to one or more patents and also to know-how, or to one or more of the former elements and also to one or more trade marks, or to more than one trade mark, consideration should be given to the question whether the royalties should be diminished if one or some of the elements licensed lapse or are annulled or if the licensed know-how loses its secrecy.

11. No written agreement will be practical and workable unless it records accurately a true agreement in substance reached between the parties. Just as licensors in developed countries should understand the problems of licensees in developing countries and the policies of their Governments, so also licensees should be fully aware of the commercial aims of the licensors with whom they do business and of any government control exercised over them.

12. In all cases professional legal advice should be taken during the negotiation of a licence agreement; the situations vary so greatly that no standard form of agreement would be useful.

## LIST OF QUESTIONS TO BE CONSIDERED

*Note:* The following list contains questions for consideration during negotiations. In some cases, the result of this consideration will be a decision that a particular point need not be covered in the agreement. In other cases, the licensor or the licensee may raise additional points. The list, therefore, is merely a practical aide-mémoire; it may also assist in determining the structure of the agreement.

### *I. Questions common to all licence agreements*

#### A. Legal framework

1. Who the parties are.
2. Consequences of a change in the status, ownership etc. of a party.
3. Law applicable to the agreement; any other national laws that may also have to be taken into account.
4. Language in which the authentic text will be drafted.
5. Whether an arbitration clause is to be included.
6. In case of controversy, which courts will have jurisdiction.

#### B. Fundamental aspects

7. Degree of exclusivity, if any.
8. Right of the licensee to grant sublicences.
9. Royalties, method of payment, minimum payments, currency control, safeguards against devaluation and revaluation, government guarantees for payment of royalties, taxation aspects, inspection of books.
10. Duration (see also paragraphs 6 and 7 of the introduction and nos. 19 and 37 below); possible extension.

#### C. Additional provisions

11. Most-favoured-licensee clause.
12. Possible obligation of the licensor to sell materials etc. to the licensee, possible obligation of the licensor to buy products from the licensee, and possible regulation of prices for such materials or products.
13. Possible obligation of the licensee to sell a part of his production to the licensor, possible obligation of the licensee to buy materials etc. from the licensor, and possible regulation of prices for this purpose.
14. Possible right or obligation of the licensee to indicate on his products that they have been manufactured under the licence.
15. Rights or obligations to take action against third parties who infringe rights covered by the licence agreement.
16. Infringement of third-party patents or trade marks by the licensee.
17. Communication and use of, and rights in, improvements effected by the licensor or the licensee.
18. Remedies for fundamental or minor breaches.
19. Early termination of the agreement.
20. Situation at the expiry or early termination of the agreement.
21. Approval of competent authorities, if prescribed by national law.

### *II. Special questions relating to patent licences*

22. Specification of the patents to be licensed.
23. Extent of the rights granted to the licensee; which acts covered by the patent he may perform, in which technical fields, and in which country where a patent is held by the licensor.

24. Maintenance in force of the patents.
25. Consequences of invalidity of the patents.
26. Possible obligation of the licensee to use the patented invention.

*III. Special questions relating to know-how agreements*

27. Specification of the know-how to be transferred.
28. Conditions of the agreement that may restrict the use of the know-how (field of technology, territory, duration etc.), or the sale or use of products manufactured under licence.
29. Specification of means of the transfer of the know-how, such as:
    *(a)* Written information, models and samples;
    *(b)* Visits by and training of the licensee's staff, including training in the licensor's premises;
    *(c)* Advice by the licensor's staff, including visits to the licensee's premises.
30. Period of transfer of the know-how.
31. Obligation of the licensee and the licensee's staff to treat the know-how as confidential.
32. Consequences of loss of secrecy.
33. Whether the intended use by the licensee of the know-how will require a licence under patents, existing or future, held by the licensor.

*IV. Special questions relating to trade mark licences*

34. Form of the trade mark and extent of use.
35. Quality control.
36. Obligation to use.
37. Duration of licence: possibility of early termination.
38. Royalties.
39. Obligation to refer to licensor.

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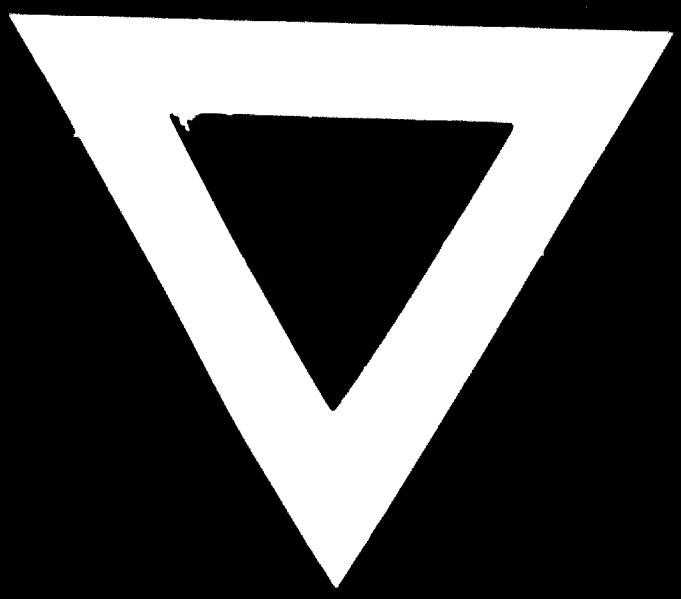

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