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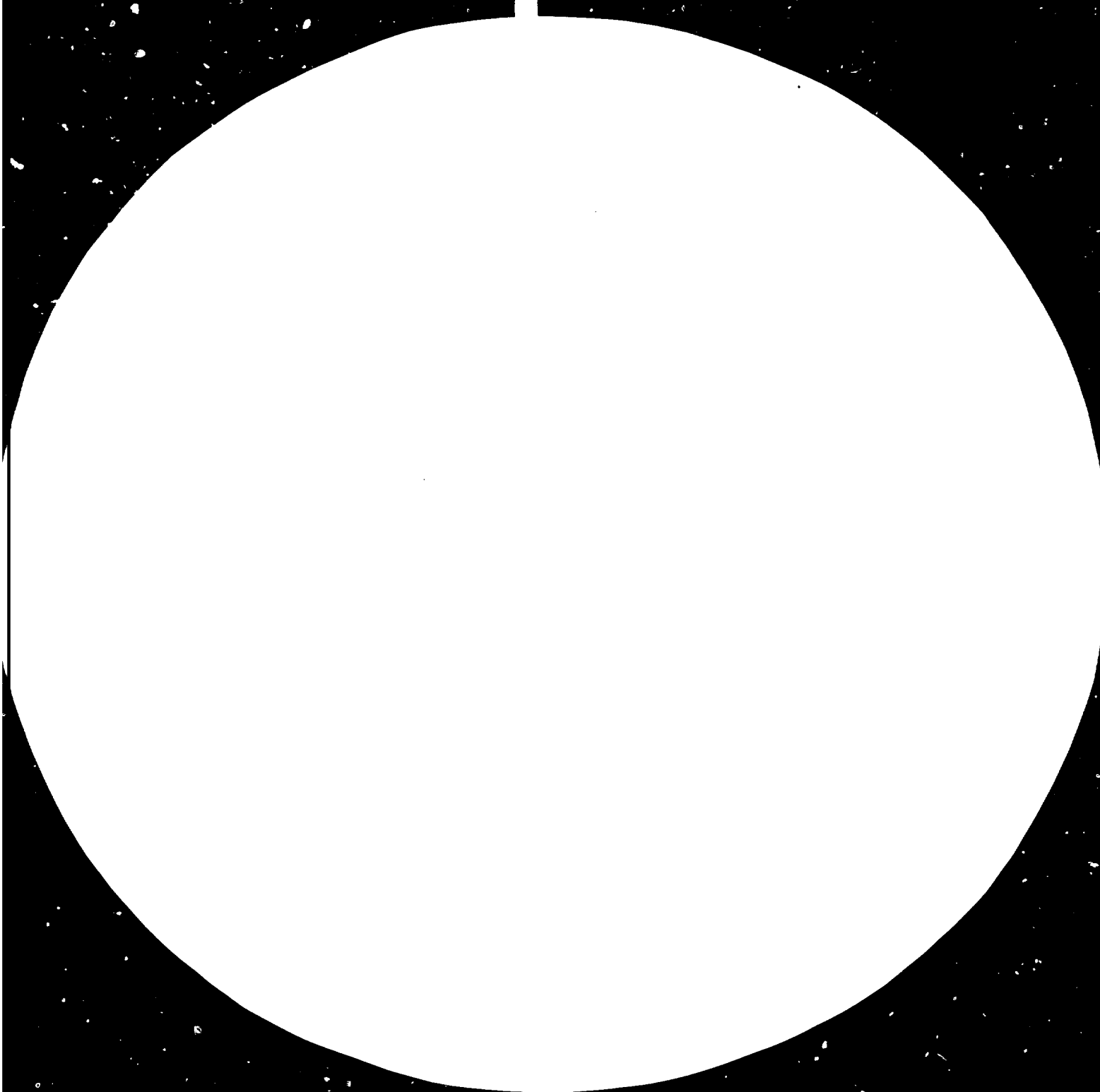
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NEWSLETTER

TECHNOLOGICAL INFORMATION EXCHANGE SYSTEM

13254

no. 31

Dear Reader,

The Tenth Meeting of Heads of Technology Transfer Registries to be held in Cairo from 8 to 13 December 1985, will focus its deliberations on the issue of training in technology transfer. UNIDO is preparing for a major effort in this area based on the Organization's experience and with a particular emphasis on Africa. This is expected to be an on-going activity extending over several years and expanding according to the needs of the developing countries as they undergo change. The training programmes will be linked to national institutions or organizational units and it is also expected that the different programmes will be implemented by nationals, supported by a variety of inputs from UNIDO, synergistically integrated with inputs from other sources. This means that the prime task will be the training of trainers. Apart from guidance in the methodological approaches and teaching techniques, the training of trainers will cover technical issues involved in the negotiation and acquisition of technology. The programme will also focus on the training of government officials responsible for evaluating technology transfer agreements. This is to a certain extent already being organized by UNIDO through "traineeships" at the more experienced technology transfer registries. I sincerely hope that this comprehensive approach towards training in this important area will receive the support it deserves, both substantially and financially.

On a personal note, this will be the last issue in which my name appears in the "Dear Reader" column. Since I will be retiring from UNIDO at the end of this year, from now on kindly address your enquiries to the Editor of the TIES Newsletter. If you should happen to be in India or wish to maintain correspondence with me, please contact me at the following address: Dr. G.S. Gouri, Khanapur, Belgaum District, Karnataka State, India.

G.S. Gouri
Director
Division for Industrial Studies

REGISTRY NEWS

Just recently we have received notification that the following changes have taken place in three transfer of technology registries:

- Ethiopia - Mr. Shiferaw Jamno has been reassigned to the office of the President and his place at the Registry has been taken by Mr. Giorgis.
- Rep. of Korea - Mr. Young Hun Kim has been replaced by Mr. Cheon Young Lee as Director of the Transfer of Technology Centre at the Korea Institute of Machinery and Metals, Seoul.
- Spain - Mr. Alfredo O. Russo has been replaced by Ing. de Santiago at the Spanish Registry.

To all those who have taken up new posts or retired from service, we wish much goodwill in their new endeavours.

TECHNOLOGY ACQUISITION

SEMINAR ON TRANSFER OF TECHNOLOGY

(Jointly organized by the Greek Ministry of Industry, Energy and Technology, and the General Secretariat of Research and Technology, and UNIDO, Athens, 21-25 October 1985)

The seminar, sponsored by the Greek Ministry of Industry, Energy and Technology, General Secretariat of Research and Technology and the United Nations Industrial Development Organization (UNIDO), had as its principal purpose the objective of increasing the awareness of government officials and public and private entrepreneurs to the various issues related to transfer of technology. During the five days of the seminar the participants were able to extensively reflect on the importance of the transfer of technology in the development process as well as on the complexities of technology acquisition and technology negotiation. They were also exposed to the international experience in promoting, evaluating and monitoring of technology flows.

The seminar was attended by staff members of Greek institutions concerned with the transfer of technology, UNIDO staff members and consultants from European countries well versed in transfer of technology matters. The following main topics were presented and discussed:

- Legal environment, organizational aspects and regulation of transfer of technology in Greece;
- Trends in technology transfer legislation;
- Organizational aspects of transfer of technology offices;
- Evaluation of technology transfer agreements;
- Sources of information for the evaluation of technology transfer agreements;
- Monitoring and enforcement of contractual obligations;
- Basic elements in contract negotiation and special considerations in licensing and technical service agreements.

The seminar also provided an opportunity for the presentation of case studies demonstrating the experience of Greek enterprises in the acquisition of technology together with an exercise of simulated negotiation adapted from a real situation which illustrated the intricacies of the negotiation and the problems suppliers and recipients of technology have to face in order to achieve mutually suitable and advantageous deals.

At the outset it was recognized that imported technology represented an essential component for the industrial development of Greece and the importance of implementing mechanisms was stressed that would improve conditions for technology acquisition, absorption and diffusion. It was also recognized that due to the technology market's complexity and lack of transparency, as well as the resulting insufficient information on alternative suppliers and fair international practices, the recipients of technology in industrializing countries normally face high prices and a variety of restrictive conditions which are harmful to their interests and detrimental to the development of the host country. A recent study of the licensing experience of Greece concluded that the lack of industrial tradition and systematic research-design development of new products in Greece make licensing and foreign technical aid the primary channels for acquiring know-how. The know-how channelled into Greece is mainly concerned with methods of production. Cases of collaboration between Greek and foreign enterprises for the mutual exchange of knowledge on matters of design and development of new products and methods do not really exist.

Most licensing contracts also include a concession on trademarks. It is estimated that approximately one-third of Greek licensee firms are more interested in the trademark of the license than in the know-how. It is estimated that more than half of total royalties paid abroad concern rights on the use of trademarks.

Greek manufacturing firms enter into contracts mainly with German, American, French, Swiss and British companies. Seventy-six per cent of all foreign licensor firms are based in the above countries. It is worth noting the relative absence of Japanese know-how.

The degree of inter-connection between Greek and foreign enterprises varies broadly from sector to sector. It is high in the areas of chemicals, electrical machinery, plastics, rubber and metal products whereas the sectors of woodwork, food processing and textiles have a low inter-connection. In many branches, the inter-connection centres on a small number of large Greek enterprises implying that Greek licensing is on a level of enterprises rather than on the sectoral level.

The level of royalties in each contract is not determined by its technological content. From the licensor's point of view, the main criterion for determining the level of royalties is the maximization of profits. In cases where there is a combination of licensing and foreign investment (over 25 per cent of the number of firms and 67 per cent of payments), the main objective of royalties is the repatriation of the parent company's imported capital and profits.

In cases of foreign investment, the transfer of know-how is usually a matter kept within the company and technology is not widely diffused. Collaboration with smaller foreign firms is often easier and more liberal.

Know-how is not limited merely to technological matters. It has been attested that in practice licensing has considerably helped Greek enterprises to improve their other activities. Exports, organizational management, quality and cost control, as well as the capital structure of enterprises are areas that have benefited considerably from licensing. The largest contribution of such collaboration however concerns specialization and the training of personnel in Greek companies.

On the other hand, licensing has not been noted to have contributed positively towards the advancement of subcontracting in Greece nor in promoting satellite small- and medium-size enterprises, or improving the borrowing capacity of Greek firms.

Licensing helped create new enterprises and saved certain firms from ruin. However, it led many worthy Greek companies to come under foreign control or dependence, and due to the lack of industrial planning, it played its part in distorting the structure of Greek industry.

Licensing involves the acceptance by the licensee of serious restrictive terms. The more important restrictions usually concern exports as well as imports of raw materials and semi-finished goods. Even though the total sum of royalties paid by Greek companies is small (0.37 per cent of the manufacturing product in 1978), the impact of the often onerous restrictions imposed by licensors plays a definite role in the structure and development of certain industrial branches.

The more developed a Greek company, the stronger its bargaining power during contract negotiations, but since competitive Greek firms are often a threat to the local markets of multinationals, the latter usually show less eagerness in granting know-how without serious binding terms. In these cases it is preferable for Greek firms to collaborate "on more equal terms" with smaller foreign companies.

Until recently, the positive approval of licensing contracts was the task of the Ministries of Industry and Co-ordination whose objective was the minimization of foreign currency outflow and did not go into a systematic analysis of the cost-benefits for the country's economy. After joining the EEC, no restrictions on the remittances in foreign exchange for royalties are permitted by the countries of the Community. Restrictive terms in contracts can only officially be free competition and free circulation of goods, or violate international agreements and internationally accepted practices.

The impact of the wider economic environment on the use of licensing has been negative. Specifically mentioned is the deficient protection of industrial inventions in Greece, the low level of research, education of personnel and training, the absence of national standards etc.

An important inflow of know-how to Greece is realized through technical aid, although agreements for this is limited to a small number of large companies. In 1978, the level of payments for foreign know-how reached 20 per cent of total payments for royalties.

The know-how, in at least half the cases, is inferior to that used by the licensor for subsidiaries located in more advanced countries.

A general conclusion to be drawn is that licensing had a positive impact on the development of many Greek firms at the cost of a greater dependence on foreign decision-making centres and the irrational development of certain industrial branches.

The presentation of experiences of other countries (namely of Portugal and Spain), which face problems and constraints comparable to those of Greece, has shown that a comprehensive legal and institutional infrastructure is an essential prerequisite to taking full advantage of the technology imports and orient them towards the achievement of the Government's objectives and priorities.

UNIDO, on its part, is an organization devoted to assisting industrializing countries in all matters related to technology acquisition; among the

instruments available, and from which Greece may benefit, special reference is made to the following:

- INTIB, Industrial Technological Information Bank, which provides information on sources of technology, mainly oriented to the pre-feasibility stage of technology acquisition;
- TIES, Technological Information Exchange System, providing exchange of information on terms and conditions of contracts among transfer of technology offices;
- TAS, Technological Advisory Services, providing direct assistance to Governments and public and private entrepreneurs on the different aspects and stages of contract negotiation.

Against the above background it was concluded and recommended that:

(a) The conditions under which technology is imported into Greece and the impact of such technology on the national development can be substantially improved through the introduction of appropriate legal and institutional infrastructure with a transfer of technology office as the focal point to handle transfer of technology promotion, evaluation and monitoring in a comprehensive manner;

(b) In addition to such an indispensable framework, the good functioning of a technology transfer office requires a specially trained staff who are able to analyse the transfer of technology agreements and take into account the interests of the recipient companies as well as the superior interest of the country.

(c) Among the functions of this office a special reference may be made to the following:

(i) In relation to the business community, assistance to Greek entrepreneurs on the selection of technology and the negotiation of transfer of technology agreements;

(ii) Concerning the macro-economical objectives of the country, to provide the Government with knowledge on technology flows, analysis of trends in specific sectors, identification of the technological needs of the country and other relevant information useful for the definition of the country's development policy;

(d) The usefulness and need for establishing a national and international information network was recognized. Such data base linkages should be integrated with the services of a technology transfer office;

(e) Since the experiences of other countries in negotiating technology transfer agreements could be of great value to both the Greek Government and entrepreneurs, international linkage through international organizations such as UNIDO is recommended. Linkage with UNIDO could be established by more efficiently using services such as INTIB and the Technological Advisory Services, either at the institutional or at the individual level. A more efficient use of the UNIDO documentation in this area could also be foreseen.

(f) It is recommended that serious consideration be given to joining the Technological Information Exchange System (TIES), whose objective is to exchange information and experience between like-minded countries in the area of technology transfer, evaluation and monitoring. In particular the Greek participation could be foreseen through an involvement in TIES meetings; later on activities such as

training in evaluation of agreements, information exchange and assistance in establishing rules and procedures may be foreseen;

(g) Given the short duration of the seminar and the great interest of the participants on negotiation issues it is highly recommended that the present seminar be followed by other activities addressed at entrepreneurs and Government officials, allowing them further reflection, exchange of views and increase of professionalism in this crucial area for the development of the country.

Technology transfer through joint venture

(This article is based on an extensive desk study on the subject which will be published as a UNIDO document in the near future.)

Co-operation through joint ventures, involving shared ownership between local and foreign partners, has experienced a growing preference in developing countries during the last two decades. While the traditional forms of direct investment and technology transfer have in developing countries created a major concern on the high cost and often modest benefits, joint-venture arrangements have proven to be an appropriate form of transferring production resources - capital and technology - from the most convenient source on the best available conditions and combining these efficiently with the utilization of domestic capacities. Thus the joint-venture is considered as a most flexible instrument of collaboration which could bring together partners with different profiles, allowing at the same time complementarity of their strength.

Between the traditional foreign direct investment in the form of wholly owned subsidiaries on the one hand and a direct licensing agreement on the other, joint-venture arrangements stand somewhere in the middle by including elements of both co-operation forms. Given the vital importance of technology for the process of industrialization, however, technological contributions which could be acquired through joint venture arrangements stand in the centre of interest in developing countries. The insufficiency or lack of technical know-how must not necessarily lead to a joint-venture. Other forms of co-operation available which are limited to the technical field such as licensing agreements, may serve the purposes of the developing countries. But under the usual provisions, licensing agreements do not give the licensee the often needed capital inputs or the full range of services for the planning, construction and running of a new plant including management and training of personnel. The possibility of combining those elements with the acquisition of technology provide the attractions of joint-venture arrangements in developing countries; and unlike direct foreign investment, these arrangements promise a higher degree of control of the operations involved at reduced costs. Finally, equity contributions of a foreign technology owner implies also his participation in market risks. This is supposed to give the national entrepreneur a better insurance that the technology applied would be relevant to the purpose of the project and appropriate to the market.

However the interests and motivations of the promoters of a joint-venture are not usually the same and should be well understood. For a foreign investor, presence and access to developing country markets, cost and price advantages, safeguarding of raw material supply and risk sharing are important motivations to seek a joint-venture partnership. Entrepreneurs in developing countries in most cases enter into a partnership with a foreign investor in the hope of obtaining capital, management and marketing skills and a reliable source of technical know-how. The harmonization of these, sometimes contradictory, interests is essential to establishing a joint venture which could successfully meet commercial interests and serve as an important element in contributing to the area of economic and technological development in the recipient country.

Although these agreements have become quite transparent due to various studies recently published on joint venture arrangements, less attention has been paid to the practical implications of planning, negotiating and effecting transfer of technology in the joint venture mode. A considerable number of drawbacks while executing joint venture and related transfer-of-technology agreements in developing countries has created a growing awareness of the complexities involved in entering into such agreements and of the related need for strengthening the capability of negotiating with foreign partners.

Against this background and in line with former UNIDO publications on transfer of technology issues, this manual is intended to outline the different options and problems involved in the transfer of technology through joint ventures. Addressing entrepreneurs and regulatory personnel of government agencies in developing countries who are seeking to license or regulate transfer of technology in the joint-venture mode, the manual discusses those issues that are commonly raised and sorted out among partners before they set down the forms of their compromise in contractual formats. It is in so far intended to provide background material and practical guidance during the preparatory and negotiating phase of transfer of technology transaction.

Due to the considerable complexities of establishing a joint venture, particularly in the developing country context, it is not feasible to discuss all of its aspects; however, several UNIDO publications treat particular aspects of setting up industrial ventures in and transferring technology to developing countries at some length, and to which reference will be made later on in this manual.

The specific transfer of technology issues will be discussed within the context of the establishment of a joint venture. Pursuing a chronological approach, the planning, preparation and negotiation of joint venture arrangements and transfer of technology transactions until the signing of the final agreements, will be outlined step by step. While the first part presents the basic considerations during the preparatory phase of a joint venture, particularly highlighting the technology related preparation activities such as technology identification, its selection and evaluation, the second part describes the characteristics and modalities of the technology transfer through joint ventures. Pros and cons vis-à-vis direct licensing, standard provisions in foreign investment and transfer of technology laws, as well as questions of the general transfer of technology environment will be discussed in detail. The third and main part deals with fundamental issues of the negotiation phase. The crucial elements when negotiating and setting up a joint venture, its capital structure, management, control and technology are discussed in such a way as to show their inter-connections, their impact on the smooth running of the venture and their implications on the technology acquisition by the national partner. Finally, a sample agreement should illustrate contractual possibilities of entering into a joint venture arrangement and safeguarding the acquisition of technology by the local partner.

The joint venture concept

The joint venture discussed in this monograph is the "industrial joint venture" involving substantive use of overseas technology generally established between corporate entities in developed and developing countries and operating under the national legislative framework of the developing country. The parties of the joint venture may be individuals, corporate bodies or in the context of developing countries, very often government agencies.

While many variations are possible, the joint venture can basically take one of the two following forms:

- The joint ventures formed by the specific incorporation of a company, with the company acting as the vehicle for achieving the purpose sought by its founding corporations; (Equity joint-venture)
- The joint venture formed by ad hoc or less permanent arrangements without a corporate designation and with profit-and risk-sharing as the only common purpose. (Contractual - joint venture)

In the latter form, two or more existing companies establish a "joint venture" which is essentially an arrangement to carry out a particular type of activity without creating an entity with legal corporate identity. For example, two companies can "pool" their assets in a joint venture to manufacture a product (i.e. the petrochemical raw material intermediate, ethylene) and by agreement use it in some ratio in (their) separately owned enterprises. In these latter forms of the "joint venture", division of profit, expenses, production, etc. will be arrived at by a formula set down in the agreement. In other words, unlike the situation with the incorporated joint venture company, division of profit is not determined by respective contributions to equity funds. Also, a common legislative framework need not govern the operations of the collaborating companies. Contractual joint venture arrangements are often used in those countries and economic sectors where the laws of the host country do not recognize the concept of private ownership or foreign participation in ownership, as is the case for most of the countries with centrally-planned economies.

While the contractual joint venture could be an important instrument for industrializing developing countries, it is particularly amenable to exploitation by intergovernmental agencies; but this is not a subject for this manual.

The study mainly focuses on the equity joint venture, which, principally in the manufacturing industries, is the most common form of joint venture in developing countries. Although there is no uniform model of equity joint ventures and the scope and complexity of arrangements can vary widely according to the purposes of the venture, it is assumed that the equity joint venture considered in the manual has the following characteristics. It is:

- (a) A separately incorporated enterprise in which
- (b) investors from two or more countries
- (c) commit capital and/or technological assets
- (d) share some degree of management
- (e) participate jointly in all risks of the enterprise, and
- (f) share in the net earnings in the ratio of their contributions to the equity of the enterprise.

In order to highlight issues of competing self-interest and potential conflict, the model joint venture of this monograph is a "two body" or "two shareholder" enterprise, with both the bodies, as already stated, being corporate entities. The issues discussed admit to a "third body" involvement as would happen in "third country" ventures or when governments and banks provide equity capital to an industrial firm. Finally, the establishment of a joint venture in this manual is presented tacitly or expressly under the assumption that the developing country firm is taking the initiative by seeking a source of technology and not capital; that foreign capital becomes associated with the enterprise because of an ancillary need of the enterprise, as an assurance for the performance of the technology, as a

condition of the foreign firm's terms for the supply of technology, etc. This assumption is consistent with developing country policies towards direct foreign investment and reflects a growing tendency of developing country firms to become a more active force in the process of negotiating transfer of technology transactions and the formation of joint ventures. 1/

GUIDE ON GUARANTEE AND WARRANTY PROVISIONS IN TECHNOLOGY TRANSFER TRANSACTIONS

Hereunder you will find a third article on the subject, this time covering legal title and infringement. As in Newsletter No. 30 we are pleased to reprint comments on the subject sent in to us by our readers.

4.6 LEGAL TITLE AND INFRINGEMENT

(a) Purpose and Function

If part of all technology transferred consisted of patents or other industrial property rights, the licensee could only fully utilize it if the technology were valid, meaning that the licensor is in an undisputed legal position concerning the technology. Usually there are three areas of particular concern:

(1) The actual existence of legal protection (ownership and validity), which may, in addition, make reference to the maintenance in force of the patents for the time of the agreement;

(2) The possibility that the use of the licensed patents may infringe the patent rights of third parties (third party claims);

(3) The possibility of operating without legal interference by third parties (infringement suits).

For practical purposes a distinction may be made between the refusal of an application for a patent and the invalidation of a granted patent as a result of third party claims.

In the first case, a patent pending application is refused when the industrial property administration declines to grant the patent because the application fails to conform to the requirements of the patent law.

In the second case, an already granted patent is declared to be invalid after claims of invalidation of the patent right itself, which will subsequently lead to an annulment of the patent if changes or modifications in the technology to repeal such an infringement, is not or cannot be made.

Provisions on the granting of patents also often regulate questions dealing with the exclusive or non-exclusive character of the licence, improvements, field of use, etc. These questions will not be discussed in this section of the document.

1/ The survey in TD/B/C 6/77 (UNCTAD 1982) demonstrates that in almost 50 per cent of the projects involving foreign small- and medium-sized firms, the initiative for equity joint ventures or a technology agreement was taken exclusively by the local partner, whereas in only 20 per cent of the cases the projects derived from a proposal of the foreign partner.

(b) Present legal situation and contractual practice

As far as the ownership of the technology is concerned, most laws stipulate that a licensor who concludes a transfer of technology agreement implicitly warrants that he is the owner of the technology or has other forms of rights to the technology which empower him to conclude the agreement.

As far as the validity of the technology is concerned, the legal approach differs: under some laws, patent licenses etc. do not import a warranty of the patent validity. Other laws apply the general rules of civil law, under which the subject matter of a contract must be free from legal defects and under which the licensee may therefore claim damages, if this is not the case. In this respect Brazil has taken a unique approach by limiting the possibility of licensing such a patent application until a patent application has been published and a request for examination has been filed.

The laws ensure that the licensor has to ensure that the industrial property rights of third parties are not infringed.

Illustrative Clauses 27 and 28

"(The patentee shall) guarantee, for the duration of the contract, that third parties shall have no right in the patent which would prevent or limit its exploitation." (Hungary, Patents Act, Section 18(i)).

"(The Ministry of Patrimony and Industrial Development) shall not register the acts, (agreements or contracts referred to in the Second Article hereof) in the following cases:

If it is not expressly established that the supplier shall be liable for the infringement of industrial property rights of third parties." (Mexico, Law on the Registration of Transfer of Technology and the Use and Exploitation of Patents and Trademarks, Art. 15, Sect. XII - published 11 January 1982).

Other laws only require that the licensing contract must contain express contractual provisions on this issue:

Illustrative Clause 29

"(A contract for the acquisition of material rights to technology) shall provide for:

The rights and obligations of the contracting parties in case the assignment of the material rights to technology and the sale of products manufactured thereby have violated the rights of third parties." (Yugoslavia, The Law on Long-term Co-operation, Business and Technical Co-operation and the Acquisition and Assignment of Material Rights to Technology between Organizations of Associated Labours and Foreign Persons, Art. 24/9).

The legal consequences of acts by third parties which infringe the licensed rights, are usually not regulated expressly. Under general principles of law the licensor may be required to take appropriate steps to ensure that the licensee can enjoy the full right of the patent licensed. But a solution is mainly left to contractual practice.

In contractual practice, the licensor will usually give a warranty of title, which means that he has the right to possess the patent, or copyrights, etc. stated in such a warranty of title. For example in an agreement within a petrochemical industry for the production of ammonium nitrate between a developed and a developing country, the licensor states in the guarantee clause that:

Illustrative Clause 30

"... it has complete property and/or the right of disposal for all patent rights ... and other industrial property which are used for the engineering or in the process within the scope and terms of this Agreement."

A full warranty of legal validity, stating that the licensor or technology supplier is the true and first inventor of the invention or that there are no lawful grounds for objecting to the granting of patents to the licensee so far as it is known, is very unusual, because it is difficult to be sure that there is no reason whatsoever for attacking the legal validity (see WIPO, Licensing Guide, p. 86(ii)). But a warranty of the licensor as regards his own knowledge and steps taken by him to ensure the legal validity is quite common.

Illustrative Clause 31

The licensor hereby warrants that to the best of its knowledge the technical informations to be disclosed pursuant to the Agreement do not constitute infringement of patents of third parties.

Third party claims

The consequences of a patent infringing third party rights are subject to a number of variations in present contractual practice.

(a) Licensor takes full responsibility

In this case the licensor bears the full risk of third party claims as to the responsibilities for the defense and for any damages or sums that may become payable, as well as the adjustments necessary to cope with the obligations and restrictions emerging from such claims.

When the licensor takes full responsibility with regard to third party claims he will undertake at his own expense the defense of any such suit or action.

In such a case, the licensee is completely dependent on the action of the licensor with respect to legal action, as the licensor will have sole charge and direction of the defense and right to be represented therein by advisory council of its own selection at his own expense.

The licensor may, in any such suit or action, be obliged to co-operate to the extent possible and to furnish evidence within his control.

When the licensor bears the full risk of third party claims, "the licensor shall fully indemnify and hold liable the licensee of any sums payable by infringement and shall reimburse in full to the licensee any royalties, license fee or damage paid to a third party as a result of a ruling of a competent court." (See UNIDO/PC.50/Rev.1, Art 7.1. and 7.1.2.)

In the event of any notice or claim of infringement of third parties' patents, the licensor may stipulate the right to eliminate the alleged or adjudged infringement by (1) procuring for the licensee an appropriate licence or (2) making

such changes in the technology as necessary to avoid such infringement. Such a right shall be borne by the licensor at his own expense and the changes required shall not prevent the licensor from meeting the performance guarantees as stipulated in the contract. (See WIPO, Licensing Guide for Developing Countries f.n. 95.)

(b) Licensors' limited responsibility

Other approaches used, when a patent infringes third parties' rights, stipulate limitations on the liabilities of the licensor and do not hold the licensee to be harmless in all respects.

Usually the licensor undertakes the defense of such a suit or action at his own expense, but in the event that the alleged infringement is denied by court, some clauses state that the licensee must repay the licensor the cost of conducting the case. Other clauses go even further in obliging the licensee to undertake such suits and actions at his own expense.

Another limitation of the licensors' responsibilities may be that he will hold the licensee harmless against any judgement or damages which may result from any suit alleging infringement of any patent of a third party up to a limit of, e.g., a certain percentage of the total payments previously received by the licensor from the licensee.

The licensors' responsibilities may also be limited in the sense that a clause may be silent on the requirement for the licensee to have the licensor alter the process for avoiding or eliminating the infringement, while other clauses may limit such a requirement to a matter to be discussed between the licensor and licensee in case of infringement of third parties' patents.

(c) Consequences with respect to royalty payments

Some clauses may provide for suspension of royalty payments or their continuance at a reduced percentage during the period of legal proceedings attacking the validity of the patent.

Infringement by a third party

If the (valid) patent is infringed by third parties, contracts usually oblige the licensee to inform the licensor, but may also state that the parties shall promptly inform each other of any infringement of the patent which becomes known to them.

In present contractual practice, the obligation to take the necessary steps in case of such infringement may rest upon the licensor, the licensee, or both jointly.

Contractual practice also uses a number of variations relating to the responsibility of the licensor and licensee for the costs and expenses incurred by the proceedings undertaken to stop an infringement by the third party and the right to retain any benefits, such as damages, which may be recovered from such proceedings, as such costs, expenses and benefits do not always correspond to the one responsible to initiate and undertake the proceedings against infringers.

Nevertheless, some main approaches to the obligations for undertaking such proceedings and the division of costs, expenses and benefits related hereto, are presented below.

One approach is that the parties jointly undertake the proceedings against infringers and determine their respective responsibilities. The distribution of costs and expenses for example may be shared equally between the licensor and licensee.

Another approach is that the licensor is obliged to undertake the proceedings at his own expense. The licensor will then also enjoy the benefits of any sum payable by the infringer in the concept of royalties, license fees and damages.

In the event that the licensor fails to undertake the proceedings as stipulated, the licensee may take the appropriate legal action against infringers, directly if permitted by the applicable law or on the basis of powers and authorizations provided by the licensor.

Any sum payable by infringers will correspond to the licensee, but he will also be responsible for all costs and expenses incurred thereof.

A third approach is that the licensee is obliged to undertake proceedings against infringers at his own expense. As mentioned above, he can do this directly if permitted by the applicable law or on the basis of the necessary powers and authorizations provided by the licensor. The licensee will also in this case enjoy the benefits of any sum payable by the infringer in concept of royalties, license fees or damages. If the licensee does not take prompt legal action, the licensor may on his own option take such actions. The costs and expenses will be paid for by the licensor and he will also enjoy the benefits of a successful outcome of such actions.

If, as a result of an infringement by a third party, the licensee's income for the product or process is actually or likely to be substantially reduced, some contracts may oblige the licensor to hold the licensee harmless of damages due to infringements by a third party, if the licensor does not take appropriate actions against the infringer, in the sense that the price of the contract is to be diminished to an extent commensurate with such a reduction in the licensee's income.

(c) Problems and possible solutions

Warranties as to legal title and infringement of industrial property rights are long known and a lot of court cases exist. In spite of this, legal views on a number of items are still divergent and the legal principles on these matters have not been settled in a number of developing countries. Even if patents only play a subordinate role in the whole context of technology transaction, these issues need to be carefully drafted, because insufficient regulations in this area may easily affect other portions of the transaction.

Legal title, ownership. The ownership of the licensor to the patent licensed is considered to be an implicit warranty. Nevertheless, it may be stated in the contract itself to avoid any misunderstanding and to make sure of the present status of registration/application of each of the patents and its scope (see illustrative clause 30).

Validity. Licensors are limited to giving blanket warranties with respect to legal validity, because the patent could become invalidated for all time.

When a patent application has been fixed but not yet granted, the risk that the patent application will be refused (which occurs when the application fails to conform with the requirements of the patent law, e.g. when an invention is in the public domain or someone else holds the right of the patent) could make the licensor even more hesitant to warrant that the application will result in a full patent title at a later stage.

The disclaimers presently used do not share the burden of risk between licensor and licensee in a balanced way. The validity of the patent lies mainly in the sphere of risk to the licensor; he has also the better means for discovering potential rights of third parties, having developed the technology and knowing the present state of the technological activities in this field better than the licensee. The main problem then consists of determining the extent of care that must be unfolded by the licensor to make sure that his technology will obtain or keep its legal validity. A minimum requirement would be that the licensor gives detailed information at least of activities he has unfolded to find prior patent applications, etc. This information would facilitate the licensee's assessment whether or not the legal validity of the patent has a reasonable chance of survival. Thus, the contract should at least state that the licensor, to the actual extent known to him, guarantees that there is no limitation, including any pending official procedure or litigation, which adversely concerns the existence or validity of the patent.

Postponement of contract. It is sometimes suggested that the agreement should enter into force only after the patent has been granted when patents are still pending. Since patent registration procedures can be very lengthy, this approval may lead to undesirable delays and costs with respect to the investments of the licensee.

Adaptation of the contract. The primary goal of the recipient should be to obtain the technology in spite of the invalidation of one or more of the patents involved, if the technology as a whole is still valuable. This will require adaptations and modifications by the licensor on the technical and on commercial sides. On the technical side, infringement of third party rights may be avoided by making changes or modifications in the technology or by procuring, if necessary, a third party licence for the licensee in order to ensure he has the right to continue using the technology. The costs required should be borne by the licensor and such changes on the technical side shall not prevent the licensor from meeting his guarantee obligations. On the commercial side, payment conditions may have to be adjusted. It seems to be fair that the licensor also takes over all those fees, royalties and damages which the licensee has to pay to a third party as a result of a court ruling. (See above para. "Third party claims. (a) Licensor takes full responsibility".)

It is the patent owned and licensed by the licensor which was the cause of these damages. The situation may only be different where the licensee has been alerted before the contract and is fully aware of disputes or claims in relation to the legal validity of a patent. The licensee should also negotiate for full liability of the licensor for the licensee's own damages and losses.

Consequences of full invalidation without possibility of adaptation because of third party claims

If adaptations to the technology and contract terms are not possible or desirable, a termination of the contract should be provided for. National jurisdictions take different views as to the question whether royalty payments should be reimbursed once the patents are invalidated. Some argue that one cannot pay consideration to a non-existent right, others argue that it should be considered as use of a valid patent as long as the invalidation was not spelled out. To avoid uncertainty, a provision on (partial) reimbursement should be included in the agreement wherever possible, in addition to the other rights. (See above para. "Third party claims. (a) Licensor takes full responsibility".) (See p.9, "(c) Consequences with respect to royalty payments".)

To avoid uncertainty, a provision on (partial) reimbursement should be included in the agreement wherever possible, in addition to the other rights. (See above para. "Third party claims. (a) Licensor takes full responsibility".)

Consequences of invalidation because of patent application refusal

These views, with regard to the right to terminate the contract and the right of having royalty payments reimbursed also apply when a patent application is refused.

If such a right is recognized, reimbursement is usually determined from the date of the refusal of the patent application, but the extent of such reimbursements could be considerably disputed particularly when the recipient has profited from the use of the know-how or has received technical information or has otherwise benefited by his protected situation, for a period prior to the refusal. Therefore, as has been stated above, a provision on (partial) reimbursement should be included in the agreement in order to avoid these kinds of disputes and uncertainties.

Infringement by a third party. The most important action is a co-operative speedy procedure to stop such infringements in order to minimize damages. Therefore, both parties should be subject to strict and expeditious notification procedures. In principle, the obligation to take proceedings against the infringer should stay with the licensor because the licensor will often have an interest of his own in order to be able to defend himself against the inevitable counter-claims of the infringer that the patent of the licensor is invalid. (See, e.g., M. I. Roos, "A Case History: 'Work mate'", in Les Nouvelles, June 1983, pp.102-111 (105).)

Nevertheless, there may be situations where the licensor shies away from court action because he is afraid of the high costs of the litigation procedure or because he fears invalidation of his own patent. In addition he may be unfamiliar with the local legal or administrative conditions.

Illustrative case

An inventor had licensed a patented textile machinery innovation exclusively to a small enterprise. The innovation proved to be highly valuable. International manufacturers soon discovered the value of the product and out-produced the small licensee. The sales, though growing, were not as high as they could have been if the licensor would have taken legal action against the other producers which produced competing equipment coming within the claims of the patent. The licensor, however, was not willing to litigate and risk its patents, even though his royalty income could have been higher. The licensee had no possibility of forcing him because he had failed to insist upon a clause requiring the licensor to take legal action against firms that produced competitive equipment coming within the claims of the patents. (See H. I. Johnson, Experiences with Three Licensees XIX in Les Nouvelles 33(34) (1984).)

Therefore, the licensee should have a right to participate in the litigation. In case of co-plaintiffs, parties should clarify who has the right to choose counsel and to control the conduct of litigation and how litigation costs and recoveries are to be shared.

A licensor will often be hesitant to let the licensee defend patents by himself if he thinks that the licensee has less experience in patent litigation. He may even fear that the licensee only defends the patent half-heartedly in order to provoke the invalidation of his own patent and thus be released from royalty obligations.

A solution could be the right of the licensee to take action alone, if the licensor does not act within a certain period after notification. The obligation of the licensor to initiate action could be limited to substantial cases.

If the licensee is entitled to pursue the infringer by himself, caution should be taken that this does not affect the licensor's guarantees vis-à-vis the licensee.

The recipient should make sure that the licensor will hold him innocent of damages due to infringements by third parties, at least to the extent that he can recover them from the third party. (See above "Infringement by a third party".)

Separation of responsibilities. As has been pointed out, the protection of validity of patents is the obligation of the licensor, but effective protection will require close co-operation between the parties. This relates particularly to the notification procedures in case of infringement, for support in court proceedings. When the licensee takes over certain tasks from the licensor in litigations with third parties, this should, in principle, not affect the liability of the licensor, except where certain negative results are due to a clear fault of the licensee.

Alternatives. A measure which could complement rather than substitute patent warranties is extensive information on the patent situation. The better the licensee knows the state-of-the-art and the R&D going on in a specific field, the easier is his evaluation of the potential validity of the patents.

Patent warranties can be partially replaced by implied warranties in some national legislations. Caution, however, is necessary, because legislation differs, and even within one country the scope of an implied warranty may differ according to the circumstances of the case.

(d) Checklist

1. Legal title, Ownership

- Ownership or other legal position of licensor with regard to technology;
- State of patent application/registration;
- Type of patent awarding procedure.

2. Validity

- Knowledge of prior publications (countries, time, persons);
- Knowledge of right of the persons;
- Knowledge of public use;
- Degree and kind of activities unfold to discover eventual third party rights.

3. Invalidation

- Reasons:
 - Non-payment of fees;
 - Non-fulfilment of requirements;
 - Third party rights;
 - Contestation by licensees.

4. Corrective action in case of invalidation

- Postponement of contract:
 - Subscription of contract only after filing of patent application;
 - Validity of contract only after patent grant;
 - Pending validity of contract (subject to patent grant);
- Adaptation of contract:
 - Adaptation of technology;
 - Procurement of licenses from third parties;
 - Adaptation of payments;
- Termination of contract:
- Royalties:
 - Retention;
 - Reduction;
 - Termination;
 - Reimbursement;
 - Damages.

5. Litigation with third parties

- Notification:
 - By recipient;
 - By supplier;
- Responsibilities:
 - Of licensor;
 - Of licensee;
 - Co-operation requirements;
- Costs;
- Damage claims.

6. Infringement by a third party (See points under 5.)

7. Separation of responsibilities

- Notification;
- Law suits:
 - Proceedings by licensor;
 - Proceedings by licensee;
 - Joint proceedings;
 - Information requirements;
- Damages;
- Effects on licensor's warranties in case of licensee's procedures.

8. Alternatives

- Information;
- Implied warranties under applicable law.

9. Requirements under applicable law.

SPANISH EXPERIENCE IN REGULATING TECHNOLOGY TRANSFER

This article is abstracted from a paper written by Dr. Cesar Primo, a UNIDO consultant, which was presented at the National Workshop on Technology Transfer held in Athens, Greece, from 21-25 October 1985. Dr. C. Primo was Head of the Spanish Technology Transfer Register from its establishment in 1973 until 1984. The article is complemented with the annual report for 1984 on transfer of technology, prepared by the Directorate General for Industrial and Technical Innovation, Ministry of Industry and Energy.

Introduction

No one disputes the importance of technology and the role it plays in the economic growth of countries. Nevertheless, when technology is studied from different angles, something is lost of the overall view and it may be forgotten that the level of technological achievement is the sum of domestic technology and technology acquired from outside. World-wide studies have shown that this combination gives quite similar results in a large number of countries. For example, in Spain it is estimated that the total expenditure is something of the order of 1 per cent of the gross domestic product. This value is not very dissimilar from that obtained for a wide range of countries.

In comparison with each of the components enormous differences can be noted. There are vast differences between what the most developed countries spend on research and development and what is spent by the least developed countries. In other words, the major difference is in the different proportions of domestic research and acquired technology, given that all countries produce some work of their own and also import technology. In industrialized countries the proportions are at levels of 70/30, 80/20 and above. In medium-level countries the proportion hovers around the 50/50 mark and the least developed countries show a much greater imbalance.

The problem of these proportions or disproportions is not of an economic nature, in terms of the costs of technology, since it is very often preferable to acquire foreign technology than to undertake one's own development. The problem lies in the risk of creating a state of dependence with long-term dangers. This risk takes on greater significance in medium-level countries which do have the possibility of minimizing negative effects or disadvantages which may accompany ill-judged transfer of foreign technology. In other words, the countries at an intermediate stage of development are aware that the transfer of technology is only a part, albeit a very important one, which has to be adequately dealt with in the context of an overall policy for technology.

If one considers and analyses the phenomenon of transfer of technology on a world scale over a long period of time, one discovers coincident events which may be interpreted as a logical process tending to repeat itself in a cyclical fashion, at a number of levels. It would not be over-bold to postulate a theory of the transfer of technology involving four fundamental stages.

These stages might be:

(i) Demand for technology. The prime objective is to obtain foreign technology regardless, to some extent, of terms.

(ii) When there is an infrastructure of scientific and technical capacity, manufacturing activity and a minimum level of consumption, the objective is to improve the manner and conditions in which the technology is transferred. Restrictive or unfair terms are made difficult or suppressed. This could be called the stage of "Registers" of contracts for transfer of technology.

(iii) When the above objective has been wholly or largely achieved, the next objective sought is the stimulation of research and development and the assimilation of the technology acquired. The supervision and control of contracts becomes discriminating, making transfer of technology subject to assimilation programmes and the technological development of the environment of the receiving enterprise.

(iv) The final stage of the cycle would be the liberalizing of the transfer of technology which, for practical reasons, has improved its relevance and adaptation, as well as in regard to contractual conditions. Nevertheless, it seems that this liberalizing of the traditional begins with a reduction of controls to a few cases of serious abuses.

At the same time, governments experience difficulty in obtaining access to certain technologies and involve themselves actively in seeking to obtain "advanced" technologies, granting incentives and allowing certain restrictions or conditions which were previously considered unfair.

Thus it seems that one cycle ends and a new cycle begins, but on a new technological level.

It is clear that the stages are not sharply divided, and that the evolution from stage to stage is a continuous process.

A study of the phenomenon of the transfer of technology world wide shows that each country adopts different measures in the various stages described, according to criteria appropriate to its situation and its needs at the time. There are countries which might appear to have rushed to set up controls while others give the impression of delaying their intervention. However, an outside observer cannot judge the decisions of governments since they are not privy to all the real factors in each of the countries, whose governments undoubtedly know what is appropriate for them and the most fitting moment to intervene or liberalize.

The report on the experience in Spain will be set out along the lines suggested by the Secretariat of UNIDO, with four sections: legislation, registry, operating criteria and follow-up.

Legislation

Before 1972 there was no specific legislation on the transfer of technology. The legislation, in so far as it referred to the import of foreign technology, did so within a more general context or, quite logically, in connection with the subject of foreign investment. It could be said that this corresponded to a period in which the prime objective was to facilitate the entry of technology in order to

permit significant industrial development. A good account of that period of time and the situation in the years 1972 and 1973 can be found in document TD/B/AC.11/17, "Major issues arising from the transfer of technology: A case study of Spain", drafted by Mr. P. O'Brien for the Secretariat of UNCTAD with our assistance. However, there was control of foreign payments through the Bank of Spain (Spanish Foreign Currency Institute), with a consequent control over new contracts to which variable criteria were applied, depending on the greater or lesser availability of foreign exchange. On an irregular basis, this body consulted the Ministry of Industry, which issued a non-binding report, indicating possible defects or the inclusion of terms which in its judgement were prejudicial to the receiver of technology.

In 1973 Decree 2343/1973 was issued, regulating the transfer of foreign technology. Its preamble sets out the objective of acquiring the necessary technology for the development process and on terms which lead to the greatest profit for the national economy. It establishes a Register at the Ministry of Industry for the compulsory registration of contracts, and entrusts the Ministry, in collaboration with other interested ministries, with undertaking the relevant measures to ensure that the transfer takes place under the most favourable terms.

The procedure for the registration of contracts is set out in an Order of the Ministry of Industry of 5 December 1973 which lists the terms or clauses in principle considered unfavourable. It formalizes the control stage with the aim of improving the terms of acquisition of foreign technology. It is interesting to note the level of co-ordination involved and the participation of the sectoral administration in evaluating the contracts, while at the same time there is a centralization of measures and of information which can be used in formulating the Government's policies for technology.

1973 marked the beginning of a seemingly static period, but one in which, as we shall see later, there is a constant evolution through the measures taken by the Registry which, under the Decree, has wide powers of evaluation and interpretation.

The Order of the Ministry of Industry dated 30 July 1981 consolidates the evolution of the measures taken by the Registry and officially endorses a more liberal treatment based on a realistic view of experience acquired; this represents a substantial change in the focus of evaluation of contracts. Restrictive and unfair clauses continue to be considered undesirable, but attention is centred on programmes for the assimilation of foreign technology, and what in the third stage of our theoretical scheme we called the raising of the technological level in the sector of operation and the supplier and consumer sectors, which the Order defines as the "environment".

This significant change becomes very important when the Spanish receiving enterprise is an associate or affiliate of the transferring foreign enterprise. In this case it is possible to question the existence of a genuine transfer of technology, there being simply "use of foreign technology" in an enterprise established in Spain.

If this interpretation is accepted, the only transfer would be through:

(a) Persons working in Spain on programmes of training and technology assimilation.

(b) Transmission of technology to the "environment", generally composed of smaller national enterprises, very often with low technology levels.

A few years later, the evolution of the criteria used by the Registry was legally formalized by the Order of the Ministry of Industry of 22 February 1980

which provides for automatic registration of "lower value" contracts, going so far as to dispense with the procedure of examination by the sectoral Directorates-General of the Ministry of Industry. This Order is also significant in showing a liberalizing position which has no doubt received a certain impetus from the prospect of entry into the European Economic Community (EEC). Recent measures taken by the Government and deductions from economic policies and international relations indicate that Spanish legislation will, in the future, formalize the transition to the fourth phase of the proposed theory.

With regard to the reasons for the establishment of the Register of Contracts and the factors that influenced it, the foregoing explains the circumstances preparing the way, but external influences must also be taken into account. Before the 1970s, officials of the Ministry of Industry took part in studies on the phenomenon of transfer of technology from all angles - industrial development, productivity, industrial property, research and so on - and particularly through meetings and programmes of OECD, UNCTAD, WIPO, and CEPE. Spain was a member of the initial group in UNCTAD to form the Intergovernmental Group on the Transfer of Technology, which tackled the subject of an International Code of Conduct. It was in Madrid (Alcalá de Henares) that a seminar was held in 1972 on incentives and obstacles to the transmission of technology in member countries of the CEPE. The UNCTAD projects were perhaps those which played the most important role in the development of specific legislation for regulating transfer of technology. In the same way, the influence of the UNIDO programme for co-ordinating registries of contracts played a highly significant role in the development of the Spanish Registry, and in the corresponding legislation described in the preceding paragraphs.

The contracts Registry

The co-ordination and centralization of information on transfer of technology was entrusted to a Registry to be set up in a Directorate-General for Industrial Promotion and Technologies of the Ministry of Industry established during the most recent administrative reorganization.

The Registry was located in the Section for Transfer of Technology and International Technical Relations with legal powers to initiate and undertake proceedings acting as a representative of the State Administration. Nevertheless, the registrations had the status of administrative resolutions and had to be signed by the Director-General. Progressively the other responsibilities of the Section were eliminated and finally the administration of the Registry was raised to the level of "service", with several sections being given wider areas of participation, both within the Ministry of Industry and in other ministries concerned with the economy.

The resources provided were initially very meagre but were gradually expanded in an attempt to cover needs. The number of technically qualified staff (lawyers, engineers and economists) was increased and auxiliary facilities were provided including computerization of records.

Operations began with 2,000 contracts already in force which had to be revalidated by registration with the Registry. This process was automatic, with registration being granted for the term approved by the Spanish Foreign Currency Institute; in the case of contracts of unlimited duration, the registration was for five years. The complete approval process comprises two stages. One is evaluation and registration of the contract with the Registry. The second is the final approval of payment, which is the responsibility of the Department of Trade with the co-operation of the Bank of Spain. An inescapable pre-condition for the approval of payment is the prior registration of the contract with the Registry.

The evaluation and registration of the contract is based on information provided by the receiving enterprise and information available in ministerial departments.

The receiving enterprise submits:

1. The contract, signed in Spanish;
2. A memorandum in standardized form;
3. Other documents legally required under Spanish administrative law.

The memorandum comprises:

1. Identification and information on the Spanish enterprise;
2. Identification and summary information on the foreign enterprise;
3. Summary of the contract terms;
4. Description of the technological content;
5. Anticipated advantages or justification of the acquisition of foreign technology;
6. Magnitudes of forecasts for production, imports, exports and payments during the period in which the contract is in force.

The procedure for processing comprises the following steps:

1. Opening of a file, legal-administrative review of the documentation submitted and classification of the contract by the Registry;
2. Referral for a report by the competent authority, depending on the subject matter. This may be a sectoral Directorate-General within the Ministry of Industry or in another ministry;
3. Study and report from the Directorate-General or ministry;
4. Review of the complete procedure by the Contracts Registry;
5. If the review brings to light deficiencies or unfavourable terms in the contract or other unjustifiable circumstances, the deficiencies are notified to the Spanish enterprise for correction or re-negotiation, if it is appropriate. A period of time-limit is allowed;
6. If no unfavourable aspects are noted in the course of the review, or these have been satisfactorily corrected, a positive resolution in favour of registration of the contract is prepared;
7. Once the resolution has been signed, the requesting enterprise and the Ministry of Trade are informed, with a copy of the document, so that payments arising from the contract may be authorized;

During the 12 years in which the Contracts Registry has been in operation, the number of refusals has not exceeded one per cent of cases. This is probably because adequate changes were introduced in contracts to make them acceptable. The percentage of objections to authorization of payment is much less - generally in connection with financial conditions analysed by the Department of Trade (exchange risk insurance, concealed credits, etc.).

The final phase of approval is, therefore, authorization of foreign payments. The above shows the practical importance of the work of the Registry, providing a stimulus to the improvement of terms of acquisition and support for the negotiating capacity of Spanish enterprises in the difficult and ill-regulated technology market.

Operating criteria

Because of our inexperience in controlling the transfer of technology in a regulated, systematic way, our list of objections (unfavourable terms) included an exhaustive catalogue of unfavourable conditions which have been considered in international forums. In the beginning, the Registry was confronted with several dilemmas: for example, whether to strictly apply the conditions provided in the law or to take advantage of the broad interpretative and discretionary powers which the law offered, in order to achieve the same goal over a period of time, convincing both parties: the supplier and the recipient of technology. As was to be expected, the enterprises reacted initially with antagonism, claiming that the process involved "more controls" and "more red tape". These were very delicate months, in view of the significant administrative delays that we caused. Public opinion was receptive, apart from the scepticism always aroused by State interventions.

The problems were overcome by using the following two simultaneous approaches:

(i) Respecting the authorizations or approvals already granted by the Spanish Foreign Exchange Currency Institute for up to five years from their appearance in the Registry.

(ii) Trying to convince everyone involved that the Registry's main function was to bolster the negotiating capacity of the weaker enterprises vis-à-vis suppliers of technology always in a stronger negotiating position.

The liberal attitude represented by the first approach and the proverbial patience of citizens with their government administration did the rest. This liberal philosophy has dominated the Registry's operations, however, and the benefit of the doubt has usually been granted to the extent possible, with the laws requiring that contracts be reviewed after a maximum period of five years. The contracts are reviewed at the time of the renewal of registration. A realistic outlook and the responsibility of promoting the acquisition of appropriate foreign technology have combined to lead the Registry to accept conditions which, although somewhat unfavourable, were in a way necessary to defend the just interests of the enterprises transferring the technology. Some new contracts, on the other hand, have been evaluated with a very strict scrutiny of the circumstances, the technology itself and the contractual conditions.

It should be kept in mind that contracts and their circumstances are always different, although they may be placed in groups or categories in an effort to apply homogenous criteria.

Such groupings may be based on:

1. The links between the contracting enterprises; parent-affiliate relations;
2. Earlier or future relations between the two parties, even if not involving capital;

3. The principal type of service or advantage extended: licenses for the use of patents, licensing of the use of non-patented knowledge, licensing or cessation of the use of trade marks, technical assistance, engineering services, etc.;
4. The technology itself, difficulties in acquiring it; desirability or otherwise of traditional technologies;
5. Other factors.

For simplicity's sake, four groups of contracts have been identified:

1. Contracts between linked enterprises;
2. Contracts between independent enterprises; and within each of these groups;
3. Contracts for licensing, even though they may include technical assistance;
4. Contracts for particular technological services.

Since parent-affiliate contracts may be completely free of limiting or improper clauses, attention has to be given to payments, the balance of trade and effects on the country's economic sector.

Contracts for technical services have an effect limited to the period during which these services are being provided; they are of little importance afterwards, with some exceptions.

Licensing contracts are the most difficult to evaluate properly because of the wide variety of benefits or disadvantages to which they can give rise.

The criteria have evolved over time. Legislation has not so much brought about changes in the criteria as it has adapted itself to the new criteria found desirable, so as legally to permit their application.

We began to operate in a discriminating manner, devoting more attention to major contracts involving large payments and less attention to smaller contracts, with the exception of cases in which the Spanish enterprise clearly seemed to need strong support in negotiation or renegotiation. One important development was the transfer of the "focal point" from the contract to the receiving enterprise. An attempt was made to evaluate the enterprise's performance in technological aspect: R&D technological dependence, trade balance, etc. ... The result of this change of focus was the Order of 30 June 1981 which the change in criteria. Another significant development was the general liberalizing trend which coincided with overtures aimed at joining the EEC, and which was clearly enunciated in the Order of 22 February 1985, although this Order had been prepared several years before and fell somewhat short of the liberalization which would have seemed desirable.

The Registry actually operates more liberally, in respect of the great majority of contracts, than the legal text provides. Results and conclusions arrived at through sincere efforts at evaluation are difficult to quantify. Here again we see that the transfer of technology is an important component of development but not the first or the second factor. Others are more important. And there is a risk of counting as positive or negative results of policies due primarily to other factors: political, economic and social.

To begin with, we can observe that the overall results of Spanish policy applied through the Registry have been positive:

- The flow of foreign technology has not only not diminished, it has increased.
- Spanish R&D and assimilation plans have had an impact on the technology balance of payments, in which exports provide a coverage of near 30 per cent.
- Contracts currently being submitted are relatively free of unfavourable conditions, a fact which also attests to the improved negotiating capacity of Spanish enterprises.
- We note that imports of modern and new technologies are proportionally higher.
- There is no doubt that significant savings have been made in the cost of technology and the associated imports, but in all honesty it is impossible to quantify these savings.

A further and very important result, although its advantages may to some extent be offset by some latest disadvantages, is that a very large proportion of Spain's manufactured exports are produced with the help of imported technology - either technology which has been acquired previously and assimilated or the technology coming into the country each year under contracts in force.

Follow-up of contracts

When the Spanish Registry was set up the original intention was to have a systematic follow-up of contracts. Subsequent experience showed that it would be advisable to limit the follow-up to a certain proportion of contracts which could be considered particularly important.

In fact, "follow-up", like "co-ordination", is something which everyone talks about but which is very difficult to carry out. Twelve years' experience makes us sceptical of claims of follow-up of all or even a substantial proportion of technology contracts. It is rather different when the aim is limited to a small number of cases or enterprises or to what might be called strategic contracts.

The way in which the Registry operates in Spain and the five-year limit on the validity of the registration enable long-term contracts to be reviewed at each renewal or extension of registration, thus providing some follow-up of contracts and of the enterprises which import foreign technology. From this viewpoint follow-up has valuable and tangible results since the review may lead to further improvements in long-term contracts, besides in many cases bringing about a reduction in the contractual price or royalty.

Possible future ideas

In Spain and some other countries at an intermediate stage of development, facts are emerging which clearly indicate that the theory stated in the introduction of this report will be confirmed: liberalizing criteria are likely to be applied more frequently and new objectives are likely to change the Registry so that its main function will be not to act as an intervention instrument but provide advice based on all the accumulated information and experience, such as advice on locating sources of technology, advice on national industry and development activities and advice or information to the Government on scientific and technological policies.

In connection with the foregoing article on the Spanish experience in regulating technology transfer, we are reprinting as a further illustration a part of the 1984 annual report for the Spanish Ministry of Industry and Energy in respect of transfer of technology.

MINISTRY OF INDUSTRY AND ENERGY
Directorate-General for Industrial
and Technological Innovation

ANNUAL REPORT FOR 1984

1. Transfer of technology

1.1 The technological balance and its evolution in recent years

The balance of payments for technology (technical assistance and royalties) for the year 1984, according to information from the Bank of Spain cash account (parts 01.00 and 01.04) showed a marked improvement in the cover ratio compared with the two preceding years. This resulted from a positive movement in the country of the two components of the balance, reduction in imports by four points and an increase in exports by 13 points. Nevertheless there continues to be a large deficit as can be seen from the following figures:

Payments	84,742 million pesetas
Income	20,780 million pesetas
Balance	63,962 million pesetas

The evolution of the technological balance in recent years is shown in the following table:

<u>Year</u>	<u>Payments (millions of pesetas)</u>	<u>Income (millions of pesetas)</u>	<u>Income/ payments %</u>
1979	34,704	7,642	22.0
1980	44,393	10,873	24.5
1981	52,382	16,698	31.9
1982	78,984	15,707	19.9
1983	88,338	18,691	21.1
1984	84,742	20,780	24.5

1.2 Movements in the Registry of technology transfer contracts in 1984

1.2.1 Number of contracts and classification

During the year 1984, 776 contracts were entered in the Registry of Contracts, established by decree 2343/73 of 21 September 1973 to regulate the acquisition of foreign technology. These contracts are classified as follows:

- Licence contracts (including some complementary technical assistance)	
New agreements	321
Extensions and amendments to existing contracts	122
- Technical assistance contracts (including plant, process and product engineering)	
New agreements	306
Amendments to existing contracts	27

1.2.2 Payment forecasts

Contracts so registered, according to forecasts by the receiving enterprises, will give rise to payment liabilities under all headings during the registration period of 56,233 million pesetas, distributed as follows:

- Licence contracts, mainly for periods of five years (millions of pesetas)		30,750
New contracts	20,964	
Extensions and amendments	9,786	
- Contracts for technical assistance and technological services, one-time payments, although these may be made in several instalments (millions of pesetas)		25,483
New contracts	22,270	
Amendments	3,213	

The distribution over time of these payments, according to forecasts of the implementation of the contracts, is as follows:

<u>Year</u>	<u>Millions of pesetas</u>
1984	26,186
1985	11,263
1986	6,843
1987	6,146
1988	5,795
	<u>56,233</u>

1.2.3 Sales, exports and imports associated with the registered contracts

Other statistics related to the above forecasts, such as sales and trade balance, estimated for the total period of registration of the licence contracts, are the following:

	<u>Millions of pesetas</u>
Total sales	1,965,888
Exports	462,178
Imports	239,765
Favourable balance	222,413

Of the forecast imports of 239,765 million, 25,671 million pesetas relate to inputs supplied by enterprises transferring technology.

1.2.4 Related industrial investment

Industrial investment related to the registered contracts amounts to 644,720 million pesetas.

1.2.5 Sectoral distribution

The following table shows contracts registered in 1984 classified by sectors of production, with analysis of payments and number of contracts under the headings licences and technical assistance.

YEAR 1984
CLASSIFICATION BY ECONOMIC SECTORS
(Forecast payments in millions of pesetas)

Sectors	Licences				Technical assistance				Total			
	Number of contracts	%	Contract payments	%	Number of contracts	%	Contract payments	%	Number of contracts	%	Contract payments	%
0. AGRICULTURE	33	7.45	77	0.25	13	3.90	52	0.20	46	5.93	129	0.23
1. MINING & QUARRYING	5	1.13	97	0.31	10	3.00	48	0.19	15	1.93	145	0.26
2. FOOD MANUFACTURING	20	4.51	3,546	11.53	9	2.71	477	1.87	29	3.74	4,023	7.26
3. TEXTILE/ LEATHER	25	5.64	1,464	4.76	9	2.71	63	0.25	34	4.38	1,527	2.72
4. PAPER & PAPER PRODUCTS	6	1.35	825	2.68	3	0.90	18	0.07	9	1.16	843	1.50
5. CHEMICALS	68	15.35	6,730	21.89	30	9.01	752	2.95	98	12.63	7,482	13.32
6. NON-METALLIC MINERALS	14	3.16	743	2.42	10	3.00	253	0.99	24	3.09	996	1.77
7. METALLIC MINERALS	6	1.35	1,502	4.88	35	10.51	1,445	5.67	41	5.28	2,947	5.25
8. MECHANICAL ENGINEERING	89	20.09	4,616	15.01	24	7.21	912	3.58	113	14.56	5,528	9.84
9. ELECTRICAL ENGINEERING	37	8.35	3,376	10.98	16	4.80	1,436	5.64	53	6.83	4,812	8.56
10. MOTOR TRANSPORT	70	15.80	4,807	15.63	32	9.61	11,699	45.91	102	13.16	16,506	29.35
11. OTHER MANUFACTURING INDUSTRIES	28	6.33	965	3.15	4	1.20	100	0.39	32	4.13	1,065	1.90
12. ENERGY/WATER	1	0.23	5	0.02	81	24.32	5,427	21.30	82	10.57	5,432	9.66
13. CONSTRUCTION	4	0.91	31	0.10	5	1.50	113	0.44	9	1.16	144	0.26
14. SERVICES	37	8.35	1,966	6.39	52	15.62	2,688	10.55	89	11.47	4,654	8.28
TOTAL	443	100	30,750	100	333	100	25,483	100	776	100	56,233	100

From an analysis of the above table, it can be inferred that the sectors with the greatest liability for technology transfer payments, that is those which exhibit greater technological dependence on foreign countries, are motor transport, chemicals and mechanical engineering. Those requiring less foreign technological support are the sectors of agriculture, mining and quarrying.

An analysis differentiating payments due to licence contracts and those due to the provision of technical assistance shows that a large proportion of the payments comes under technical assistance (45.32 per cent). However, it should be noted that these figures are distorted by the fact that certain payments between subsidiary and parent, treated as contributions to general technological development expenses and more appropriately considered as coming under the licence heading, are included as services.

For licence contracts in the transport, chemicals and mechanical engineering sectors together with the food manufacturing sector, the total liability for payments is 65 per cent of the total for all sectors. With regard to payments arising from technical assistance contracts, it will be seen that the transport sector, with almost 50 per cent of the payments, is the one which stands out clearly from the rest.

1.2.6 Territorial distribution

The table on the following page shows the territorial classification of contracts registered in 1984 analysed by countries supplying technology, and separating payment liabilities and number of contracts under the headings of licences and technical assistance.

The territorial distribution of payments liabilities arising from purchase of technology is mainly centred on the United States of America (46 per cent of the total) and the countries of the EEC (38 per cent) which make up the main group of our suppliers of technology together with Japan (7 per cent) and Switzerland (5 per cent).

YEAR 1984
CLASSIFICATION BY COUNTRIES
(Payments forecast in millions of pesetas)

Countries	Licences				Technical assistance				Total			
	Number of contracts	%	Contract payments	%	Number of contracts	%	Contract payments	%	Number of contracts	%	Contract payments	%
Federal Republic of Germany	98	22.12	4,052	13.18	87	26.13	4,853	19.04	185	23.84	8,905	15.84
France	103	23.25	3,970	12.91	40	12.01	1,258	4.94	143	18.43	5,228	9.30
Italy	30	6.77	595	1.93	21	6.31	595	2.33	51	6.57	1,190	2.12
Netherlands	8	1.81	1,484	4.83	11	3.30	366	1.44	19	2.45	1,850	3.29
Great Britain	35	7.90	1,988	6.47	39	11.71	1,412	5.54	74	9.54	3,400	6.05
Other EEC	9	2.03	476	1.55	20	6.01	410	1.61	20	3.74	886	1.58
TOTAL EEC	283	63.88	12,565	40.87	218	65.47	8,894	34.90	501	64.57	21,459	38.18
Sweden	8	1.81	249	0.81	1	0.30	144	0.57	9	1.16	393	0.70
Norway	2	0.45	145	0.47	1	0.30	13	0.05	3	0.39	158	0.28
Switzerland	33	7.45	2,277	7.40	25	7.51	772	3.03	58	7.47	3,049	5.41
Austria	1	0.23	25	0.08	1	0.30	10	0.04	2	0.26	35	0.06
Other European (Non EEC)	11	2.48	756	2.46	5	1.30	52	0.20	16	2.06	808	1.44
TOTAL NON EEC	55	12.42	3,452	11.22	33	9.91	991	3.89	88	11.34	4,443	7.89
U.S.A.	77	17.38	11,627	37.81	60	18.02	14,342	56.28	137	17.65	25,969	46.18
Japan	19	4.29	2,708	8.81	13	3.90	1,079	4.23	32	4.12	3,787	6.73
Canada	3	0.68	16	0.05	7	2.10	105	0.42	10	1.29	121	0.22
Other countries	6	1.35	382	1.24	2	0.60	72	0.28	8	1.03	454	0.80
TOTAL REST OF WORLD	105	23.70	14,733	47.91	82	24.62	15,598	61.21	187	24.09	30,331	53.93
WORLD TOTAL	443	100	30,750	100	333	100	25,483	100	776	100	56,233	100

LETTERS TO THE EDITOR

Sir,

With respect to the guide on guarantee and warranty provisions in technology transfer transactions, I was pleased to have the opportunity to read the section on correctness and completeness of the technology.

(I) Purpose and function

The objective of transfer of technology in your view necessarily implies the full and correct communication of the technology to the recipient.

The implementation of such objective requires parties to identify their respective capabilities; the level of development of the recipient (technically, organizational, management) influences the contents and interpretation of the word "complete", and the definition of complete necessarily depends on the purpose of an actual transfer.

The actual and practical situation in transfer of technology shows a broad variety of bridging the "gap" identified. Contractors with experience in translating technology into processing steel structures, develop and elaborate on basic process engineering designs, knowledgeable consultants with similar experience oversee contractors' activities, and recipients themselves try to develop themselves towards such experience.

In my experience a technology under transfer should not leave undefined and open-ended obligations; parties in technology transactions need clearly defined limits to their responsibilities that indicate where the other party's responsibility starts. Such other party should know or be advised as to where its capabilities fall short and it is in need of assistance from third parties.

(II) Present legal situation and contractual practice

The Yugoslavian act in article 24 relates the completeness of the technology to the contractual objectives. In the definition thereof the answer is to be found whether or not the aim of completeness is attained. The Federal Committee (see article 33 and further) requires proof of justification for concluding the contract and on the ability of the organization of associated labour to fulfill the obligations undertaken by it. It just shows that Yugoslavia requires their own nationals to have the ability to receive the technology contracted. Thereby the completeness of technology is identified.

The cited Brazilian Ato Normativo 15 has recently been followed by subsequent ones, subjecting all requirements for foreign technical assistance to a previous search into Brazilian engineering capabilities; if these are present, no foreign technical assistance will be approved (recorded) (Ato Normativo 60, article 2). The completeness consequently is related to the prevailing Brazilian engineering standard (article 7).

UNIDO

In meetings with respect to the fertilizer industry the presence of an experienced contractor was seen as an essential requirement for the benefit of all concerned and for the purpose of detailed engineering, erection and operation of the (fertilizer) plant. The completeness is related to (cap)ability of the experienced contractor [33 of UNIDO PC.73 and also the proposed guidelines on 1.6 (pages 15 and 19)].

The parameter of "comprehensibility for a qualified person in the field" presumes and presupposes a certain level, that at the same time provides the limits to the completeness.

(C) Problems and solutions

The problem necessarily is rotating around the parties' respective levels of (cap)abilities. Once they have identified these (see the Brazilian and Yugoslavian requirements), the problem is defined and the solution for failing abilities has to be found by e.g. introducing third party consultants, training or otherwise.

Disclosure of know-why could be creating more problems than it solves, since know-why does not give the clue to practical operation or application of technology and may even require a more elevated level on the part of the recipient; open-ended obligations are dangerous to all parties concerned, since the licensor might be obliged to supply documentation that may be irrelevant for the purpose of an actual transfer or is not intended to be transferred for a particular purpose at all, giving the licensee the impression that his problems are solved when they are not even identified.

The revised wording of the fertilizer licensing guide on the subject of disclosure reads

3.3 Supply of Technical Documentation and related Services

The LICENSOR shall supply to the LICENSEE sufficient technical information and Know-How related to the Process to enable the LICENSEE to undertake, through his Contractor, the detailed engineering of the Plant, to construct the Plant, to commission the Plant and to operate the Plant. The documentation to be supplied for this purpose shall include

- (a) the Process Engineering Design Package described in Annexure VIII, and
- (b) the other technical information, data and drawings listed in Annexure VI.

unquote
(UNIDO PC/73 presently under revision)

Quality and content of documents

The data on which a licensor has to base its technology for a certain purpose or application normally are to be supplied by the prospective licensee or his consultant.

The responsibility to provide these data should clearly be identified.

Other parties

In the petrochemical area, the identity of the party actually working with the technical data is mainly known and his abilities may then be used as a parameter for "completeness". There should be no actual need or intention to make documents comprehensible for any third party that may or may not be involved. This may be far beyond the purpose of a specific project agreement.

I hope my comments will contribute to a well-balanced and useful "Guide".

Yours sincerely,

Th.C.M. van Kampen

MEETINGS

Date	Title	Place
18-21 Nov.	Investment Promotion Meeting for Ecuador	Quito Ecuador
18-22 Nov.	International Conference on Man-Made Fibres	Beijing China
18-22 Nov.	Round-table Discussions on the Development of Phosphates and the Phosphates Fertilizer Industry in Developing Countries	Gafsa Tunisia
18-22 Nov.	High-level Intergovernmental Meeting on Co-operation among Developing Countries in the Field of Agro-Industry Development	Brasilia Brazil
20-22 Nov.	Eighth Session of the UNIDO Leather and Leather Products Industry Panel	Vienna, VIC Conf.Rm. VII
25-28 Nov.	Expert Group Meeting on Multi-national production Enterprises in Developing Countries	Vienna, VIC Conf.Rm. VII
25-29 Nov.	Technical Workshop on Waste Paper Utilization in Pulp and Paper Making	Bangkok Thailand
25-29 Nov.	Fujian Investment Promotion Meeting	Xiamen China
26-28 Nov.	Preparatory Committee on the Establishment of an International Centre for Genetic Engineering and Biotechnology, Seventh Session	Havana Cuba
2-4 Dec.	Expert Group Meeting on the Preparation of Guidelines for the Establishment of Mini Plants on Iron and Steel with Special Emphasis on Africa	Vienna, VIC Conf.Rm. VII
2-6 Dec.	Third Consultation on the Petrochemicals Industry	Vienna, VIC Boardroom Conf.Rms. I/II
2-6 Dec.	Follow-up subregional meeting for West Africa for the adjustment of the initial integrated industrial promotion programme at the subregional level	Lomé Togo
5-8 Dec.	Industrial Forum for Central Africa	Libreville Gabon

Date	Title	Place
7-11 Dec.	Solidarity Meeting of Ministers of Industry for Co-operation in the Industrial Development of the People's Democratic Republic of Yemen	Aden People's Dem. Rep. of Yemen
9-13 Dec.	Second Regional Consultation on Harmonization of Pesticide Registration Requirements	Seoul Rep. of Korea
9-13 Dec.	Expert Group Meeting on the Appraisal and Identification of Sectoral Development and Strategies in the Fisheries Industries	Vienna, VIC A7
9-14 Dec.	Meeting of the Working Group on Training in Agro-machinery Multipurpose Plants	Rosario Argentina
9-14 Dec.	Expert Group Meeting on Small-scale Boat Building and Boat Repair for East African Developing Countries	Port Louis Mauritius
9-20 Dec.	UNCITRAL - Working Group on International Negotiable Instruments, fourteenth session (UN Meeting)	Vienna, VIC Conf.Rm. III
16-20 Dec.	Follow-up subregional meeting for Central Africa for the adjustment of the initial integrated industrial promotion programme at the subregional level	Bujumbura Burundi
17-18 Dec.	Joint UNIDO/OECD Development Centre/World Bank - IFC Meeting on the Mobilization of domestic financial resources	Vienna, VIC Conf.Rm. VII
<u>1986</u>		
6-17 Jan.	UNCITRAL - Working Group on International Contract Practices, 9th session (UN Meeting)	New York USA
11-14 Jan.	Investment Promotion Meeting for Bangladesh (II)	Dacca Bangladesh
13-16 Jan.	Interregional Expert Group Meeting for preparation of the Second Consultation on Training of Industrial Manpower	Paris France
14-16 Jan.	Joint UNIDO/WHO/UNEP Working Group on Safety Guidelines for the Use of Recombinant DNA Technology in Bioscience Industry	Vienna, VIC
21-24 Jan.	Meeting of African intergovernmental organizations to agree on a common approach to the promotion of subregional industrial co-operation and the IDDA	Yaoundé Cameroon

Date	Title	Place
January (3 days)	ECWA/UNIDO/DIELI/CEN Workshop on "Regional Silicon Foundry and Design Centres"	Sidi Bel Abbas Algeria
4-7 Feb.	Eighth Conference of African Ministers of Industry	Yaoundé Cameroon
17-24 Feb.	Afro-Asian industrial co-operation meeting within the framework of the IDDA	New Delhi India
18 Feb. - 21 March	United Nations Conference on the Law of Treaties between States and International Organizations or between International Organizations (UN Meeting)	Vienna Hofburg
24 Feb. - 7 March	UNCITRAL - Working Group on International Negotiable Instruments, 15th session (UN Meeting)	New York USA
February	Expert Group Meeting on Non-ferrous Metals - Aluminium	Georgetown Guyana
February	Regional Workshop on the application of UNIDO Model Forms of Contract for the construction of a fertilizer plant	Lahore Pakistan
February	Workshop on CORIS implementation	Milan Italy
February (1 week)	Meeting of Consultative Group on Information Technology for Development (COGIT)	New Delhi India
3-7 March	ICGEB - Workshop on Biotechnology and Industrial Commodities	Trieste Italy
10-14 March	Fourth meeting of the Ad Hoc Panel on Contractual Arrangements - Pharmaceutical Industry	Vienna, VIC Conf.Rms. VII C0713/15
March	Meeting of sessional chairmen of the Programme Committee of the Eighth International Conference of Input-Output Techniques	Vienna, VIC
March	Regional Meeting on the Leather and Leather Products Industry in Africa	Alexandria Egypt
March	Regional Preparatory Meeting on the Fisheries Industry in Latin America	Lima Peru (tentative)
March	National Seminar on Technology Transfer	Antananarivo Madagascar

Date	Title	Place
22-25 April	Solidarity Ministerial Meeting for the Co-operation in the Industrial Development of the Republic of Mali	Bamako Mali
April (tentative)	Investment Promotion Meeting for Indonesia	Jakarta Indonesia
5-16 May	First Workshop for Heads of INTIB focal points on utilization of personal computers for INTIB networking	Warsaw Poland
May	Regional Preparatory Meeting on the Fisheries Industry in Africa	to be determined
May	Latin America/Arab Regional Co-operation Seminar	to be determined (Arab country)
9-13 June	Fourth Consultation on the Iron and Steel Industry	Vienna, VIC Boardroom Conf.Rms.I, II
16 June - 11 July	United Nations Commission on International Trade Law, 19th session (UN Meeting)	New York USA
June	Investment Promotion Meeting for Seven Indian Ocean Island Countries	Mauritius
June	Investment Promotion Meeting for Thailand	Bangkok Thailand
June	Workshop on Quality Control of Pesticides	Philippines
June	Workshop on industrial financing activities of Islamic banking	Vienna, VIC
28 July - 6 August	Eighth International Conference of Input-Output Techniques	Sapporo Japan
July	Regional Preparatory Meeting on the Fisheries Industry in Asia	to be determined
July	Expert Group Meeting on Marine Industrial Technologies	to be determined
22-26 Sep.	Third Consultation on the Agricultural Machinery Industry	Yugoslavia
September (1 week)	Negotiation Meeting on Plant-Level Co-operation between Small and Medium Scale Enterprises	The Hague Netherlands

Date	Title	Place
October	Investment Promotion Meeting for Egypt	Cairo
October	Global Preparatory Meeting for the First Consultation on the Fisheries Industry (tentative)	Havana Cuba
24-28 Nov.	Second Advisory Group Meeting of INTIB Users	Seoul Rep. of Korea
November	Meeting of Heads of Transfer of Technology Registries	Warsaw Poland
December (first week)	Investment Promotion Meeting for West Africa	Dakar Senegal
December (tentative)	Investors' Forum for Malaysia	Kuala Lumpur Malaysia

PUBLICATIONS

1. PI/95 Investment promotion information system (IMPRIS)
Regional Meeting for the Initiation of a Regional Network for
Microelectronics in the ECLAC Region (REMLAC)
Caracas, Venezuela, 3-7 June 1985
2. ID/WG.440/12 Report
3. ID/WG.440/6/
Add.1 Report on the UNIDO mission preparatory to the establishment of
a regional system for microelectronics in Latin America. Annexes
4. ID/WG.440/11 Approach to regional microelectronics co-operation programme
Expert Group Meeting on Guidelines for the Import, Assembly
and Manufacture of Agricultural Machinery and Training
Vienna, Austria, 9-13 September 1985
5. ID/WG.443/1 Guidelines to international contracts for the acquisition,
assembly and manufacture of agricultural machinery and spare
parts therefor
6. ID/WG.443/2 Comparison of sample clauses for contracts for the initial
management of a factory for the assembly or manufacture of
agricultural machinery and the rendering of technical
assistance ancillary thereto
7. ID/WG.443/2/
Corr.1 Comparison of sample clauses for contracts for the supply of
spare parts for agricultural machinery. Corrigendum
8. ID/WG.443/3 Comparison of sample clauses for contracts for the supply of
spare parts for agricultural machinery

9. ID/WG.443/3/
Corr.1 Comparison of sample clauses for contracts for the initial management of a factory for the assembly or manufacture of agricultural machinery and the rendering of technical assistance ancillary thereto. Corrigendum
10. ID/WG.443/4 Comparison of sample clauses for contracts for the supply and installation of production equipment for the assembly and manufacture of agricultural machinery
11. ID/WG.443/4/
Corr.1 Comparison of sample clauses for contracts for the supply and installation of production equipment for the assembly and manufacture of agricultural machinery. Corrigendum
12. ID/WG.443/5 Comparison of sample clauses for contracts for the transfer of know-how, grant of patent/trademark licenses, assignment of technical information and the rendering of technical services ancillary thereto for the manufacture of agricultural machinery
13. ID/WG.443/5/
Corr.1 Comparison of sample clauses for contracts for the transfer of know-how, grant of patent/trademark licenses, assignment of technical information and the rendering of technical services ancillary thereto for the manufacture of agricultural machinery. Corrigendum
14. ID/312 Development and Transfer of Technology Series No. 19 Technological perspectives in the machine-tool industry and their implications for developing countries (ISSN 0250-801X)
15. ID/312/Abstract Abstract
16. ID/337
Information
(UNIDO/LIB/
SER.B/58) Industrial Development Abstract. UNIDO Industrial System (INDIS) 14201-14500 (ISSN 0378-2654)
17. ID/338
ID/WG.442/5) Second Consultation on the Capital Goods Industry with special emphasis on energy-related technology and equipment. Stockholm, Sweden, 10-14 June 1985 Report
18. ID/SER.M/14
(85.II.B.3) Industry and Development No. 14 (ISBN 92-1-106202-0) (ISSN 0250-7935)
19. ID/SER.M/14/
Abstract Abstract
20. ID/SER.N/3 Small Hydropower Series No. 3. Chinese experiences in mini-hydropower generation (ISSN 0256-727X)
21. ID/SER.N/3/
Abstract Abstract
22. ID/289 Development and transfer of technology series No. 17. Technology exports from developing countries (1): Argentina and Portugal (ISSN 0252-3531) (French)
23. ID/289 Development and transfer of technology series No. 17. Technology exports from developing countries (1): Argentina and Portugal (ISSN 0252-3523) (Spanish)

24. ID/325 Input-output tables for developing countries. Volume I.
 (84.II.B.6) (ISBN 92-1-106198-9)
25. ID/325/Abstract Abstract

Third Consultation on the Petrochemical Industry
Vienna, Austria, 2-6 December 1985

26. ID/WG.448/1 Issue No. 3. Research and development in the petrochemical
 industry in developing countries. Issue paper
27. ID/WG.448/2 Issue No. 1. Long-term arrangements for the development of
 the petrochemical industry in developing countries. Issue
 paper

Expert Group Meeting on the Development of Multi-purpose
Agriculture Machinery Plants
Guangzhou, P. R. of China, 13-18 November 1984

28. ID/WG.449/1 Conceptual framework and aspects of multi-purpose production
 of engineering and agricultural machinery products: some
 proposals by UNIDO
29. ID/WG.449/2 Design and study of multi-purpose agricultural machinery
 plants
30. ID/WG.449/3 Experiences in the development of multi-purpose agricultural
 machinery plants
31. ID/WG.449/4 Report

Round Table Discussion of an Advisory Group of INTIB Users
Vienna, Austria, 23-27 September 1985

32. ID/WG.450/1 Linking ultimate users of industrial information to sources
 of supply
33. ID/WG.450/2 The development of industrial information systems in the
 Arab region - A review of past experiences, needs and trends
34. ID/WG.450/3 The demand and trends of industrial and technological
 information in China
35. ID/WG.450/4 Demand and trends of industrial and technological
 information in developed and developing countries
36. ID/WG.450/5 Towards a European infrastructure for technology transfer
37. ID/WG.450/6 A new concept of network: The Industrial and Technological
 Information Bank (INTIB) project
38. ID/WG.450/7 Alternative options for information transfer to industry

Meeting of the Working Group on Training in Agro-machinery
and Multi-purpose Plants

39. ID/WG.451/1 Training in agro-machinery industries. Report of a survey
 of training needs and capabilities in selected developing
 countries

40. ID/WG.451/2 Some considerations concerning industrial training

41. PI/98 UNIDO Industrial Training Offer Programme 1986

Second Consultation on the Pharmaceutical Industry
Budapest, Hungary, 21-25 November 1983

42. ID/WG.393/3/ Rev.2 Items which could be included in licensing arrangements for the transfer of technology for the formulation of pharmaceutical dosage forms

Third Consultation on the Petrochemical Industry
Vienna, Austria, 2-6 December 1985

43. ID/WG.448/3 Issue No. 2. The development of downstream petrochemical industries in developing countries. Issue paper

44. ID/WG.448/4 Survey and analysis of joint venture arrangements in the petrochemical industry

