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Interregional consultation on exchange of experience
between developing countries: Formulation and application
of the Mexican law on Licensing and Patents and comparable
comparable experience in other developing countries

Mexico City, Mexico,
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IDENTIFICATION OF LONG TERM NEEDS OF DEVELOPING
COUNTRIES IN TECHNOLOGY LICENSING ✓

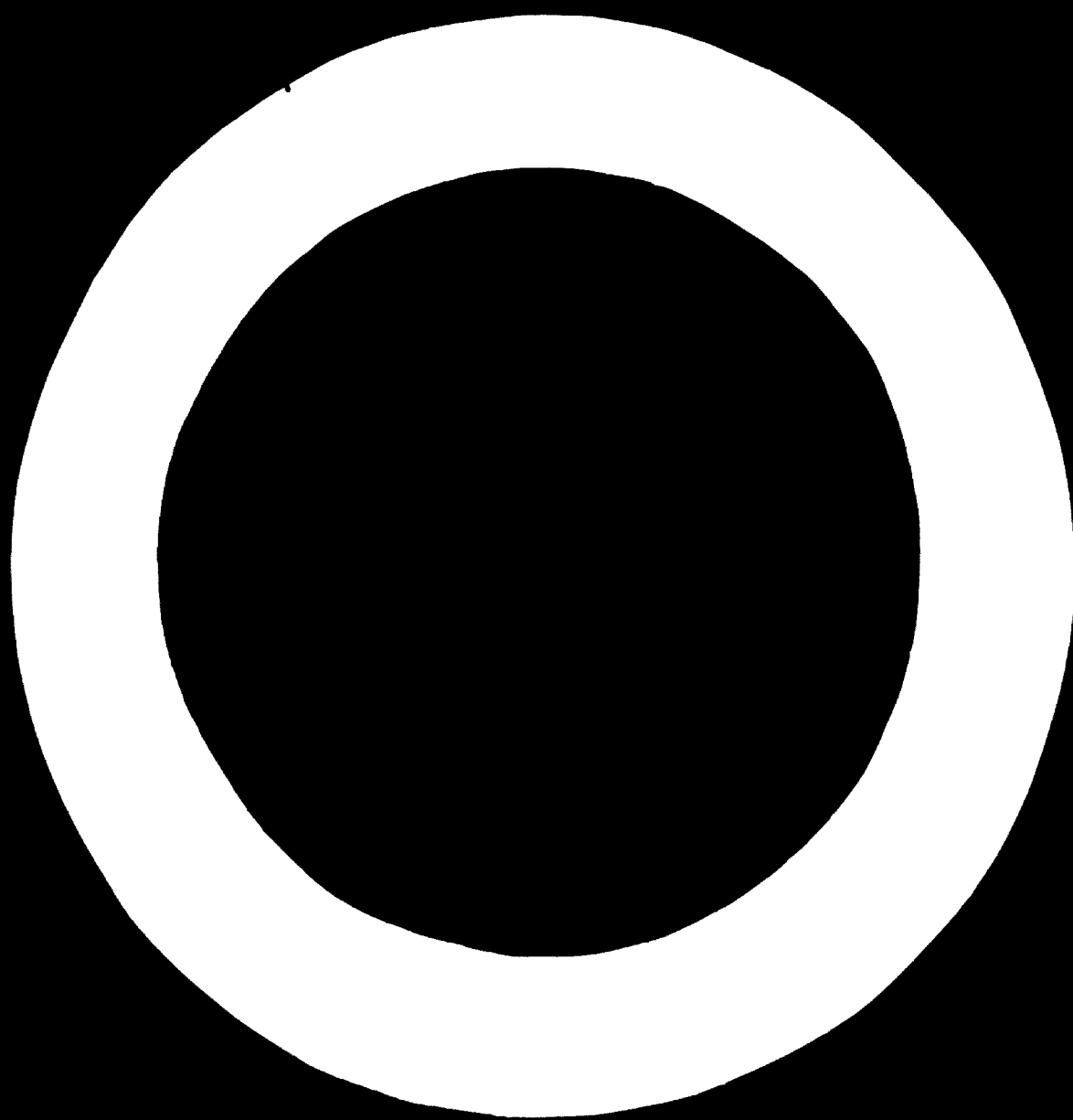
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Considerable attention has been focussed in recent years on various aspects & implications of industrial technology transfer/ & on technology licencing which is increasingly constituting a major vehicle for such transfer. Trade in technology has become a common international phenomena & licencing arrangements are extensively resorted to between enterprises in different countries. The total volume of trade through licencing was over US \$3200 million in 1970 & continues to increase rapidly. The volume of such trade is much greater between enterprises in industrially advanced countries than those in developing countries & an intricate network of licencing & cross-licencing arrangements often links a number of major enterprises in particular sectors in different countries. In 1970, while the earnings of U.S. companies was \$2460 million on this account, expenditure by companies in the USA, Japan, UK, France, Germany & Italy on licencing amounted to US \$1840 million.* For developing countries, trade in technology is of particular significance, not only because inflow of technology & know-how is an essential pre-requisite for industrial growth in most priority sectors but because the commercial acquisition of technology poses certain special problems in these countries. Past experience of licencing, arising out of historical & socio-economic factor-circumstances, has often proved unsatisfactory particularly from an overall national viewpoint, resulting in considerable doubt & distrust in many of these countries of the terms & conditions under which such commercial transfer is effected. There has been a growing trend towards confrontation at policy level between governments in certain semi-industrialised developing countries & multi-national enterprises who constitute the majority of suppliers of technology. The recent preparation of a draft "Code of Conduct" by a group of distinguished academicians, which is under discussion at inter-governmental level at present, reflects the increasing concern & at the same time, the widening gap on this issue. In this growing controversy, there is a danger that the basic issue, that acquisition of technology & know-how in a number of production sectors is an essential requirement in most developing countries, may get sidetracked. In a complex industrial society, marked by growing economic

* Source U.S. Dept. of Commerce

and technological interdependence, developing countries cannot afford to cut themselves off from the mainstream of international technological progress. This necessarily implies that inflow of technology & know-how to enterprises in these countries must be allowed & encouraged to take place from enterprises possessing such technology. Whether such inflow should indiscriminately take place in all industrial sectors or whether a selective approach should be adopted is a separate issue which is considered subsequently.

2. - The question of long-term needs of developing countries in respect of technology licensing can be viewed under three broad heads. Firstly, the distinct features & problems of acquisition of technology in these countries need to be re-stated & considered. These stem partly from historical factors but largely as overall technological background is quite different. Secondly, the aims & objectives of technological policy should be defined in the context of the role that foreign technological inputs are expected to play. With the wide diversity in factor endowments & growth stages, no set of objectives can be universally applicable at any particular stage of time, but long-term goals can and need to be prescribed. Thirdly, it is necessary to consider the principal policy instruments that can assist in the achievement of the long-term objectives. The nature & magnitude of the problems are such that they cannot be effectively tackled at the enterprise level & national approach, through institutional & other means, becomes necessary.

3. - The technology acquisition function varies considerably in scope & magnitude in the case of developing countries. These aspects can be considered under the following sub-heads: (i) source of technological decisions (ii) nature of the technology package & market for technology (iii) terms & conditions of technology agreements & (iv) socio-economic impact of technology imports.

4. - The first issue focusses on the close linkage that exists, for principally historical reasons, between foreign investment in these countries & technology inflow. With foreign branches, subsidiaries & affiliates occupying a pivotal role in major production sectors in most countries of Latin America, Asia & Africa, technology has usually served as a hand-maiden to foreign investment & the introduction of innovations & new techniques has been largely incidental to the interests of such investments. Since decisions in respect of such investments and consequent technological inputs are usually taken at distant headquarters of parent companies & are part of an overall global or multinational strategy, these can be totally unrelated to the technological needs & potential of particular subsidiaries or affiliates. The transfer of obsolescent techniques,

often accompanied by second-hand plant & equipment for assembly or semi-assembly operations to affiliates in developing countries has been fairly common. While these may serve a useful purpose in the very short run, they may constitute a major obstacle to technological progress in the future. In recent years, the concept of the joint venture, with minority foreign holdings, has developed into a popular corporate tool. This, however, provides only a partial solution. Where national equity holdings are diffused between two or more shareholders & the foreign holding constitutes a substantial minority (40-49%), the decision-making authority regarding new techniques & processes still largely rests with the latter. The institution of name-lenders or "prestia-nombres" which is common in many Latin American countries, has its local counterpart in most developing countries, where majority foreign holdings are discouraged or where there is insistence on indigenisation of majority foreign equity over a period of time. However, as a result of national policies & growing industrialization, technology acquisition by enterprisers where decision making authority rests with national entrepreneurs is increasingly rapidly &, in these cases, the principal problems posed to the prospective licensee are the nature of the technology cum know-how package & his effective knowledge of the market for the particular technology. Where the investment & technological decisions are taken by a foreign investor/technology supplier, technology acquisition is governed by considerations other than national or even pertaining to the firm in question. Apart from the nature & context of technology in such cases, payment & pricing of technology assumes a different role & can take various forms. There is no simple solution to this question & the only answer lies in such entities gradually developing their own distinct & national character. Where there is not possible, this should be recognised as such.

5. - Industrial technological know-how is a composite of knowledge & expertise covering all aspects of production & marketing of a particular product. While the related patent rights are a basic feature of any license, the more significant element is that of knowledge which is unpatented but which may cover critical aspects of manufacture & sales. For licensees from developed countries, a license comprises user rights for a specific product or production techniques, accompanied by the related specialised know-how. In the case of developing countries, the technology package tends to be much larger & usually includes a wide range of technological services such as pre-investment studies, detailed & plant engineering, machinery purchase & installation, training, plant operation, marketing & general management. The nature of technical service varies considerably, ranging from turnkey projects with management contracts for 5 to 10 years to straight patent or trademark licenses with little or no know-how support. By & large, however, the size & nature of the know-how package is more comprehensive. This is partly because of inadequate homework by the prospective licensee in many cases but largely because there is a significant gap in the availability of national technological services, particularly in respect of engineering, marketing & other services & it is easier for the licensee to entrust these services to the foreign licensor,

particularly where the latter also has investment participation. Since it is often difficult to disaggregate various technical services from the know-how element, the evaluation of technology costs also becomes correspondingly more difficult. Apart from the fact that a licensee may be paying much higher costs for such technological services, the national growth of such technological services facilities can also get retarded. For example, the engineering of chemical & petrochemical plants in oil-producing Latin countries should, over a period of time, be undertaken almost entirely by national entities. In other countries, there is no reason why engineering & technological services cannot be developed both generally & for specific sectors, so that gradually the size & nature of the technology package becomes similar to that for licensees from industrialised nations.

6. - The acquisition of technological know-how has become a fairly intricate process & prospective licensees from developing countries find themselves in a much weaker bargaining position because of (a) inadequate knowledge of the technology market (b) inadequate experience in negotiating technology agreements. It is a truism to say that the technology market is highly imperfect for most sectors. However, alternative technologies are available from different sources, or are in the process of becoming available, in most production sectors. At the same time, a great deal of technological knowledge is gradually entering the "public domain". However, while licensors usually have fairly intimate knowledge of the extent & nature of licensing possibilities & arrangements being entered into in different countries, the prospective licensee from a developing country does not have access to such information. The awareness & knowledge of such licensees is usually very limited & inadequate, which greatly weakens their bargaining position. This becomes reflected in a series of onerous & restrictive provisions in the technology agreements. Such provision can take a number of forms & relate to about every clause of such agreements. Principally, the cost of the technology may be unduly high, either in terms of lumpsum fees or royalties & in the method of computation of royalties. A provision for an unduly high lumpsum fee or a minimum royalty may well prove a disastrous liability to a licensee enterprise entering a new field. The duration of the license may be indefinite or at least far beyond the period within the technology can be effectively absorbed by the licensee. Severe territorial restrictions have proved to be a common feature of a large proportion of licenses to developing countries. Tie-in clauses for purchase of intermediate products & components, & even machinery & equipment from the licensor, are another common feature. Lack of access to technological improvements made by the licensor during the duration of agreement, accompanied by "grantback" clauses binding the licensee to supply all such improvements free of cost are also commonly incorporated. In many cases, restrictions are imposed on the licensee's option to deal in other products & services or to obtain competitive technology. Package licensing, including payments for patents not required

by a licensee, is often imposed. In many instances, the governing law incorporated is that of the licensor's country. The technology agreement, in general, tends to be heavily oriented in favour of the licensor. To an extent, this is a reflection of the imperfections of the technology market for a particular process or product. The greater the imperfection & the greater the monopolistic situation enjoyed by the licensor, either because of the specialised nature of the technology or due to the ignorance of the licensee as to alternatives, the more onerous would tend to be the terms & conditions. What is most significant in this context is that contractual provisions which would be illegal if imposed on licensees in the country of the licensor are commonly incorporated in licensee agreements with licensees in developing countries. The trend of recent juridical interpretations of anti-trust legislation in the USA has generally favoured the licensee & a substantial body of case-law has developed in recent years which militates strongly against licensing provisions which result in reduction of competition or bringing unfair means of competition into operation. In the case of EFC countries also, the approach to licensing has undergone considerable change in the context of Articles 85 & 86 of the Treaty of Rome which, inter alia, prohibit the prevention or restriction of competition within the EFC together with the improper exploitation of a "dominant" position in the Common Market or a substantial part thereof. The Fair Trade Commission of Japan also has imposed guidelines for licensing agreements which inter alia prohibit restrictions on exports, restrictions on acquisition of competitive techniques, tie-in restrictions & the like. Thus, in the industrially advanced countries, the rights of licensees are gradually being sought to be effectively protected through anti-trust measures & restricting unfair trade practices in the field of technology transfer. In the developing countries, however, there has been comparatively little regulatory control except in certain countries, such as Argentina, Mexico, Brazil & the Andean Group in Latin America & in India, Malaysia & some other countries of Asia.

7. - The socio-economic impact of technology imports in developing countries tends, in general, to create a strong bias in favour of foreign techniques & processes and, at the enterprise level, a continuing dependence on the licensor. The effect of powerful media advertising, combined with a strong consumer preference for foreign goods & services in these countries, often results in the inflow of technology at high cost for relatively simple products & processes in the consumption goods & services sector. At the enterprise level, with rare exceptions, the tendency is to depend unduly on the foreign licensor, particularly when even a small element of foreign equity participation is involved. Even for simple technological services, recourse is usually taken to the licensor, rather than the develop such services in the enterprise itself or obtain these from national entities. In the field of R & D, the perpetuation of

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dependance on the foreign licensor is particularly marked. Speedy absorption & gradual adaptation to local factor situations should be the objective, as has been so successfully demonstrated by Japanese experience in the post-war decade. Instead, most licensees are content with very slow & gradual absorption, so that technology contracts are extended over unduly long periods & adaptation becomes an even more distant prospect.

8. - It is against the above background that the long-term needs & objectives of technology licensing for developing countries should be considered. Such objectives must be part & parcel of the overall policy & programme of scientific & technological development that developing countries need to evolve. Technology licensing is an important tool & vehicle for technological progress but must necessarily be dove-tailed within such an overall programme. It is, however, possible to identify some of the principal needs & objectives of technological licensing in these countries. Some of the principal objectives can be defined as being to ensure that

- (i) enterprise-level decisions as to technological needs & inputs should, as far as possible, be independent of decisions & considerations of multinational or transnational groups with which the enterprise may have licensee-licensor relations or of which it may be an affiliate
- (ii) inflow of foreign technology takes place adequately in selected, priority sectors of production & that such positive & promotional measures as are necessary are taken to effect this purpose.
- (iii) the technology imported is consistent with other basic objectives, particularly increased employment and is suitable & appropriate to conditions & factor-endowments in the country, enabling production at internationally competitive levels & development of exports over a period of time
- (iv) the technology selected is based on as adequate a knowledge as possible of the market for such technology
- (v) the terms & conditions in the technology contract, including payment provisions, are reviewed & are not unduly harsh, onerous or restrictive for the licensee & that such terms & conditions are consistent with general guidelines which may be prescribed for the purpose, either through legislation or executive measures
- (vi) the technology & knowhow supplied is full & complete & is absorbed by the licensee enterprise as speedily as possible &, in any event, within the duration of the agreement,
- (vii) the national infra-structure in terms of engineering & technological services is strengthened & that such national infra-structure is taken into full account in technology agreements &
- (viii) a base for indigenous R & D is created in the licensee enterprises, which in turn is inter-related with broader R & D activities in the country & for the sector in question.

9. - The above objectives are, in no sense, exhaustive but are intended primarily to illustrate the comprehensive impact & coverage of technology inflow & consequently the aspects and implications that have to be taken into account. The growing technological gap between industrialised & developing countries cannot be covered by the latter perpetually following in the footsteps of the former & picking up technological crumbs that may be available in return for the protected & insulated markets in these countries. Rather, developing countries must look upon technological licensing as a positive & dynamic instrument of overall technological change, an instrument that must be used hand-in-hand with other policy instruments, so that the technological gap in sectors critical to particular economies, is substantially reduced over a period of time. In its very nature, this responsibility cannot be left to enterprises alone & must be part & parcel of overall national policy. This raises the question of the institutional & other mechanisms through which these objectives can be sought to be realised.

10. - In order to ensure appropriate decision-making authority at the enterprise level in respect of technological inputs & development, it is necessary to consider the role of foreign subsidiaries and affiliates & issues relating to foreign investment. This is beyond the scope of this paper and it is only necessary to highlight the close inter-action between foreign investment & technology. A direct relationship exists between the two principally in cases where certain types of "high" technology such as sophisticated electronics or chemical processes may not be available without majority foreign investment to the extent of 100% foreign holdings. In most other cases, however, technology can be obtained either with partial foreign control or without foreign equity participation. The pros & cons of a sizeable percentage of foreign investment being allowed in particular cases have to be carefully weighed. In Japan, severe restrictions prevailed till fairly recently in respect of foreign investment in most sectors, though the policy in respect of technology imports was liberal though regulated, and about 14,000 license agreements were entered into between 1950 & 1970. However, most developing countries do not possess the strong industrial infra-structure existing in Japan, when this policy was put into effect. In most such countries, varying degrees of foreign investment may be necessary, both to cover internal or external resource gaps & to bring sophisticated technology adequately in its wake. The question must be posed, however, whether foreign investment needs to be permitted in non-essential sectors relating, for example, to luxury goods or to service sectors, including trade & merchandising. There is comparatively limited technological impact of, for example, foreign-controlled supermarkets or chain department stores or rental firms or even hotel chains though, in this era of specialised expertise, such service sectors may be

considered in certain circles as being fields where domestic entrepreneurship cannot function efficiently without foreign knowhow or investment participation. A degree of selectivity needs undoubtedly to be introduced within a framework of pragmatism & flexibility. Even in a number of developed countries such as Australia & Canada, there has been considerable re-thinking on the question of relatively unrestricted inflow of foreign capital. In developing countries, where this is further aggravated by the existence of a large number of foreign branches & subsidiaries, many of whom are engaged in non-manufacturing activities or are occupying a dominant position in the consumption sector, a good hard look is necessary at the impact & implications of foreign capital. This is already taking place in many countries & a policy of gradual indigenisation is being put into effect. This is easier in countries with a system of industrial licensing such as India, where majority foreign holdings are generally sought to be reduced with every major expansion in a company's activities till the foreign holdings reach an acceptable level. A similar result is sought to be achieved in Mexico through a policy of discriminatory incentives. The essential need for pragmatism & selectivity arises, however, from the fact that no single approach may be appropriate for different sectors. While even minority foreign investment may not be desirable in certain purely consumption sectors, a degree of foreign participation may be very necessary in sectors involving "medium" or "high" technology. For example, in the capital-goods manufacturing sectors, minority foreign participation would be very desirable even over a long period to ensure that technology supply & absorption by the licensee enterprise is full & complete & that future adaptation can take place.

11. - Some form of institutional mechanism has been set up in many developing countries for prior approval of foreign capital investment. In countries where foreign exchange is a major constraint & foreign remittance is controlled, this in any cases necessitates previous governmental approval for capital inflow. An institutional mechanism which is becoming increasingly popular is a form of Foreign Investment Board or Commission, on which the concerned departments of government are usually represented. Such a mechanism serves a very useful purpose in that the various aspects of a particular investment proposal are brought out in clear focus. It is of course essential that such a Commission should evolve guidelines over a period of time on investment aspects such as (i) definition of sectors where foreign investment is particularly desired for resource or technological considerations (ii) prescribing fields where foreign investment should not be encouraged or approved even in the form of minority holdings such as certain non-manufacturing activities or production of non-essential consumption goods. (iii) the pattern of joint venture holdings & the role of local entrepreneurial groups as well as banking & institutional investors

(vi) the pattern of gradual indigenisation, both of existing foreign majority holdings or new investments where majority foreign shareholdings are to be reduced over a period of time (v) pattern of shareholding in the case of export-oriented enterprises, & the like. It is more important, however, that the technological aspects of foreign investment propositions are taken into consideration, when evaluating such proposals. These are often ignored in many developing countries. In some countries such as Mexico, a separate agency has been set up for the regulation of technology agreements. Whether one institution examines both of the investment & technological aspects or whether this is done by two or more institutions working in close co-ordination, it is essential that the close links between investment & technology are fully recognised & acted upon. It may be preferable perhaps to have one institution discharging the regulatory function for both foreign investment & technology so that there is no danger of two institutions pulling in different directions. In such a case, however, there should be provision for feedback of information, & opinion from other concerned institutions such as those relating to science & technology and patents & trademarks, in respect of particular proposals. The bureaucratic problems that such an institution may generate need to be carefully guarded against and a specific time-limit needs to be observed within which such proposal should be normally decided upon. The need for such institutional review of foreign investment in these countries has been generally recognised & such regulation has become an important factor in many countries.

12. Together with regulation, however, it is necessary to evolve a strong promotional mechanism to ensure that investment inflows together with technology can be channelised in sectors of priority. Too often, efforts in this regard are diffused & unco-ordinated. While certain agencies are seeking to introduce an element of selectivity in foreign investment, other institutions are keen to promote such investment in general and initiate promotional activities on that basis. This not only leads to confusion on the part of investor interests, both foreign & domestic, but often leads to investment decisions which are inconsistent with stated objectives. The elements of pragmatism & flexibility should be viewed in the context that no set of guidelines can really be universally applied in all cases. At the same time, the "rules of the game" do need to be set out fairly clearly so that potential investors are aware of the overall framework within which they are required to operate. The promotional role needs also to be viewed in a positive & dynamic manner. It is not enough to define the fields in which foreign investment is welcome in the identified sectors. The manufacturing sector in most developing countries is still in early stages of growth & some institutional agency should play a catalytic role. This could be

done either through an investment planning & promotion agency, as in certain countries of Asia or by a financial institution as in the case of Nacional Financiera in Mexico or directly by certain governmental departments. The promotional role, however, needs to be carefully defined & followed up and the responsible institutions have a vital responsibility in this field. The relationship between promotional & regulatory agencies also needs to be determined with care as close co-ordination between the two is an essential pre-requisite for effective implementation.

13. - The pattern of experience of most developing countries in the field of foreign investment & related technological inflow is so similar that there is considerable scope for pooling of ideas & information at the international level as to the problems & experiences in this field. Seminars provide a good source of exchange of ideas from time to time but it would be very useful if an international agency such as UNIDO could serve as the fulcrum for a continuing flow of information regarding the development of regulatory, as well as promotional, agencies in different countries, the number & nature of proposals of foreign investment & technology that have been submitted & considered & the nature of technical & administrative problems that have been encountered. There has been a tendency on the part of some international institutions also to dissociate problems of technology from those of foreign investment. Such dissociation can tend to be highly unrealistic in the context of developing countries, at least till such time as licensee enterprises in those countries are in a position to take fully independent decisions regarding their technological development.

14. - The appropriateness of particular technology in relation to the factor - circumstances of each country is a judgment that needs to be exercised with considerable care. The primary responsibility for such determination is that of the licensee enterprises but national considerations also have to be taken into account. Considerable literature has emerged on the question of capital-intensive and labour-intensive techniques. It is vital, however, that the production processes & techniques adopted in developing countries are those which can bring about efficient and internationally competitive production. In many production sectors such as chemicals or electronics or capital-goods production, alternatives may not really exist between capital and labour intensive techniques as such. Certain technologies are of course related to larger scales of production while others may be principally oriented towards small-scale production but this may bear no relation to capital or labour intensity. The handloom textile industry of India during the period of 1920 to 1950 which developed under the inspiration of Mahatma Gandhi was a case where a labour-intensive process was deliberately adopted but this has not been able to withstand the competition of mill-made cloth adequately in recent decades. Such techniques can be adopted only as

part & parcel of a wider control over people's consumption habits & decisions. Even where this is possible, the distinction between such techniques often tends to become blurred, or even academic. Developing countries need to adopt such techniques as are the most efficient in respect of the factor-endowments of the country & particularly so in sectors where products have to be internationally competitive. In some production operations, however, such as material handling and certain services, labour-savings techniques can be adopted only with limited advantage in these countries but the impact may tend to be mixed in many such cases. The advantages, for example, of using computer programming in various railway operations have to be set off against the workers that may be displaced through such an operation. In the manufacturing sector in particular, the determination of appropriate techniques is directly linked to the availability & knowledge of alternatives. Here again, prospective licensees from developing countries are at a great disadvantage. By & large, they are knowledgeable about particular techniques which are more popular in their respective markets. In many cases, licensees do make considerable efforts to locate alternative technologies but their efforts in this regard can, however, be strongly supplemented by institutional support in these countries. Centres for technological information, which have been set up in various developing countries have initiated valuable work in this connection & are discharging an increasing role in advising & assisting potential licensees. With much greater industrial specialisation, however, the gamut of manufacturing activity has already become so large that no Centre, however well-manned, can really provide detailed knowledge of possible alternatives in various manufacturing branches & at various stages of time. This can be done for selected manufacturing sectors but, for other sectors, links will need to be established with other centres & organization, so that the information required can be collected adequately & speedily.

15. - In the field of technological information also, international agencies can perform a very useful role in providing a continuing flow of information regarding new techniques & processes. While the basic features of new processes & techniques can be collected & disseminated for certain sub-sectors, it would suffice in other subsectors to furnish sources where the required information can be obtained. This is a field where again the UNIDO could play a very useful role.

16. - It is in respect of the terms and conditions of technology contracts that licensees from developing countries face serious difficulty. Both due to lack of knowledge of alternative technology & their availability and costs, and because of inexperience in negotiating such agreements, licensees from these countries are

prone to accept a number of harsh and restrictive clauses in technology contracts. This aspect has been dealt with in much great detail in some of the other papers presented in this Seminar & it would suffice to say that, in most clauses of a technology agreement, there is a licensor's viewpoint and a licensee's viewpoint and a license agreement should essentially represent an effective compromise between the two viewpoints & to mutual advantage. The bargaining position of the licensor is, in its nature, somewhat stronger & all the more so where a licensee from a developing country is involved because of the inadequate knowledge & inexperience of the latter. It is principally in order to redress the balance that, in many developing countries, institutional regulation of technology contracts has been introduced. In Mexico and Argentina, this has been effected through specific legislation for this purpose, as also in the Andean group of countries. In Brazil, such control is exercised through the institutions dealing with industrial properties. In India, such regulatory authority is exercised through the Foreign Investment Board on which the various concerned governmental departments are represented. The institutional mechanism that needs to be set up has to be determined in the context of each country & should, as mentioned earlier, be closely related to overall policies & procedures relating to foreign investment. It is important, however, that such an agency, which for purposes of convenience is called a Bureau in subsequent paragraphs, should not be viewed as having only "watchdog" functions but should be an integral part of the technological growth process. The role of the Bureau should be three-fold in concept: (i) to ensure that the legislative or executive guidelines that may be prescribed to govern technology agreements, are observed (ii) to analyse the impact of technological inflow in various sectors & in the light of such analysis, relate future technological inflow to long-term technological objectives for each growth sector & (iii) to ensure that technology inflow is linked with the availability & growth of indigenous technological services within the country.

17. - The nature of the technology acquisition function suggests that whatever guidelines are prescribed these should involve the use of discretionary judgment to a considerable extent. Wherever the guidelines are rigid & specific, there is a tendency to by-pass the rules in one way or another. The prescription of a fixed rate of royalty in general or for particular branches often tends to result in higher lump-sum fees or built-in costs of machinery or components. A rigid approach on the question of unrealistic export rights may well result in certain technologies not being available, as the licensor may be legally restricted from giving such rights, over certain areas. Guidelines are necessary but the exercise of suitable discretion & judgment is even more important on the part of the Bureau. The determination of a suitable lump-sum

payment or royalty rate, the duration of agreement, territorial sales restrictions, tie-in provisions in whatever form, provisions relating to patents & trade-marks & the like are all issues where varying degrees of discretionary judgment have to be exercised. While this is a point of second check in that the prospective licensee has already exercised his judgment on these matters, such second check may be of vital significance, both from a national & from a long-term viewpoint of the licensee enterprise. Experience in most developing countries has shown that the exercise of such regulatory control has almost invariably been in the long-term interests of licensee enterprises. The more fact that the technology agreement is subject to scrutiny & approval itself has a salutary effect in favour of the licensee.

18.- The dovetailing of a specific license contract with long-term technological objectives necessitates a continuing review of the impact of various licence contracts. Such follow-up should also constitute the responsibility of the Bureau. It is in the light of such assessment that a view can be taken regarding the need for restricting technology inflow in certain cases & making positive efforts to obtain technology in the case of others. Over a period of time, the Bureau should exercise its discretion negatively in not permitting technology inflow which is either (a) non-essential or (b) adequately available within the country or (c) which would hamper the growth of indigenous technology in certain fields. The preference for foreign knowhow & foreign brand names needs to be curbed in non-essential sectors as these unnecessarily involve technology imports, often at high cost. Payments for brand names & marks are cases in point. The Bureau needs to exercise judgment in the matter of use of foreign brand names in the domestic consumption sector & payments that mere use of such names may involve. The overall relationship between technology policy & that relating to industrial patents needs to be considered in this context. While this is a major subject itself & will not be gone into in this paper, it is difficult to cite more than a few instances where the existing international patent system has not worked to the disadvantage of developing countries. A review of the patent system is consequently an essential aspect of long-term technology policy in developing countries. On the positive side, the institutional agency should participate in the acquisition of required technology. Though this is a function which may be discharged by other agencies concerned with scientific & technological growth or by enterprises themselves, the securing of such technology on acceptable conditions could be an important function which could be jointly discharged by the Bureau & the enterprise concerned.

19.- It is important that technological inflow should be closely linked with the availability & growth of indigenous

technological services. It should be the responsibility of the Bureau to ensure that technological services which are adequately available in the country are not imported as part of the technology package. Such services often add considerably to the cost of technology & also constitute a strong disincentive to the growth of indigenous engineering & technological services. A country intending to build a chain of refineries, fertilizer & petrochemical plants over, say, a five year period, should be able to progressively provide the technological services, including plant engineering & even process knowhow for such plants by the end of such a period. In order to discharge its role in this field, the Bureau would not only need to be fully abreast of contemporary developments in the country but would have to work in close collaboration with other national agencies & entities engaged in the development of national technological services.

20. - The role of the Bureau dealing with technology inflow & agreements should, therefore, be conceived in dynamic terms & beyond the mere scrutiny of license contracts. Such a role cannot, however, be discharged in isolation of other national agencies & institutions. The priority sectors will need to be defined, presumably by the governmental department dealing with planning or industrial development, in assessing the suitability of a particular technology in a country's context, the Bureau should draw on the technical advice of the institution dealing with science & technology, which may even need to be specially equipped for giving such advice. An alternative is to build up a strong technical advisory agency within the government which can advise both governmental agencies & domestic enterprises on technological matters. The manning of such technical agencies, whether in the form mentioned above or as a Centre for Technical Information is difficult in most developing countries but such an institution must be developed gradually as an upto date source of technical information & guidance. In matters relating to industrial properties viz patent & trademarks, the Bureau must work in close collaboration with the national agency responsible. The Bureau should serve as a feedback of data regarding the actual utilisation of various patents & trade-marks through license contracts & the impact of such utilisation on the concerned sector. Finally, the determination of overall policies not only in terms of the foreign investment pattern but over a wide range of policy instruments, such as protection & tax & export incentives should bear close relationship with the pattern of technology inflow. All these aspects should be designed as part & parcel of the overall industrial policy package for every developing country.

21. - The similar pattern of experience undergone by most developing countries underscores the need for much closer collaboration between these countries not only in the sharing of experience & pooling of information but in framing technological

policies & procedures which follow a fairly uniform pattern. A multi-national corporation views the global market as one overall market to be penetrated through various manufacturing & trading mechanisms. Developing countries cannot adopt a similar position at this stage, though the Andean Group have given a strong lead towards inter-regional co-ordination. Nevertheless, the pooling of information & knowledge would itself constitute an important step forward. The UNIDO could play a very useful role in this context. It is suggested that a Centre for Technology Licensing should be set up by UNIDO, which would serve as a focal point for collecting & disseminating information regarding technology agreements entered into by developing countries. Such a Centre could be responsible for (i) collection & processing of information regarding all technology contracts in developing countries (ii) disseminating salient features of such contracts, including the names of licensors & licensees & the principal terms & conditions, but excluding any confidential technical data (which are not, in any case, included in almost all such contracts) (iii) assisting in determination of alternative technologies, in consultation with the centre of technical information, (iv) assisting in the negotiation of specific technology contracts & (v) generally assisting the national Bureau in their work. Developing countries could be offered this facility & those who would be willing to furnish the required information on a continuing basis should have access to all information, assistance & guidance from Centre. Such a Centre could, over a period of time, develop into a major advisory body for technology licensing, both in terms of policies & in implementation.

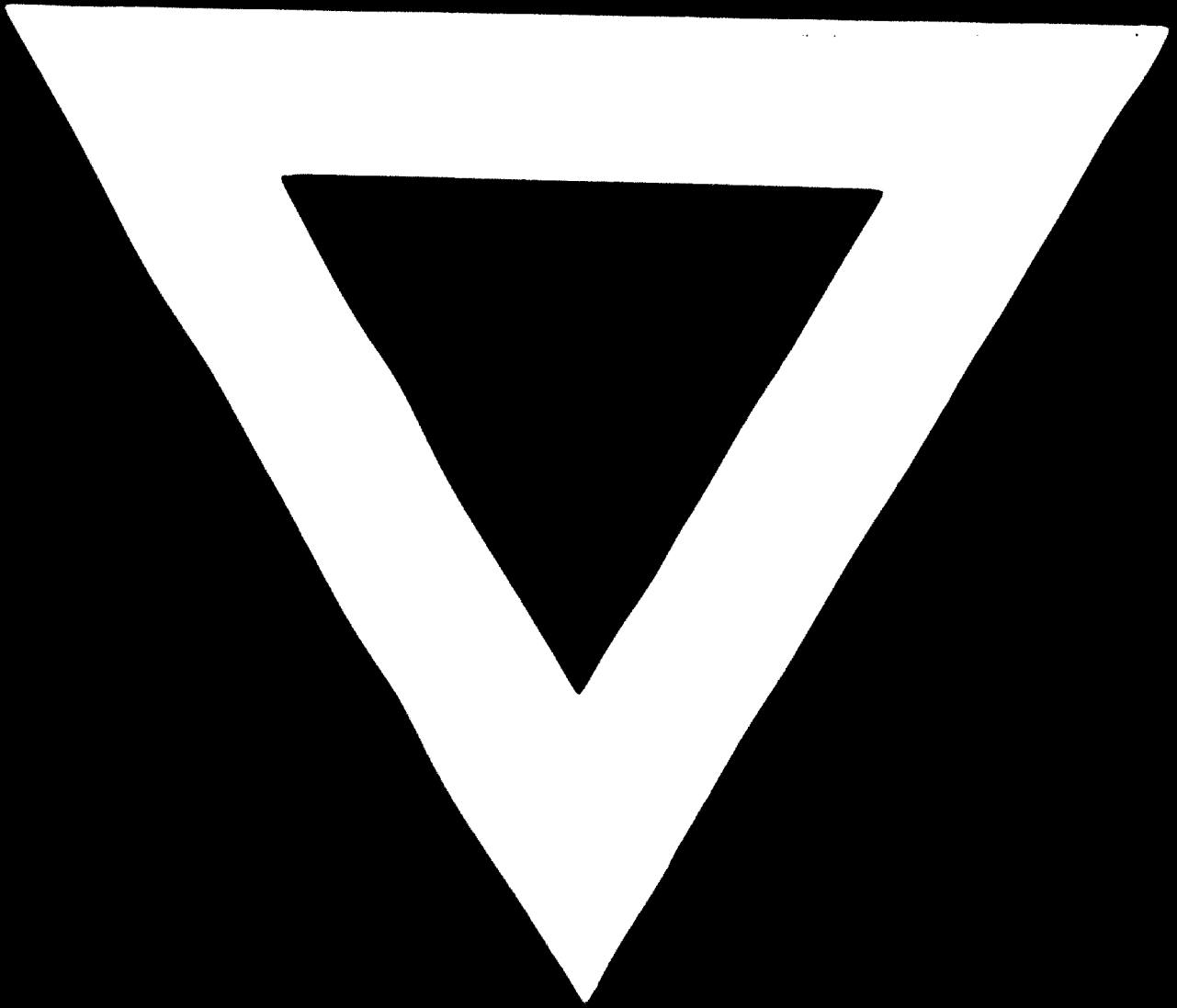
22. - Having elaborated briefly the role of national institutions and international agencies, it is necessary however to stress that technology licensing is essentially an enterprise to enterprise transaction. The role of national institutional agencies in developing countries assumes importance only because prospective licensee enterprises face special problems & difficulties & because technology inflow has repercussions in this countries beyond the parameters of particular enterprises. Nevertheless, it is important to be fully cognisant of how far regulatory control should go. A national Bureau cannot substitute itself for the licensee enterprise as this would wholly detract from the basic nature of licensing. The Bureau can indirectly assist the licensee enterprise in obtaining terms & conditions which are less onerous & can negatively prevent a particular technology from being imported, after determining the full implications of such decisions. It should not, however, detract from the basic licensee-licensor relationship which is the basic element of any license agreement. Thus, technology licensing has to viewed in developing countries from a dual viewpoint, that of the licensee enterprise & of the national economy. These viewpoints should normally tend to be complementary though there may be a conflict in approach such as when the licensee's interests

are essentially short-term, or when the Licensee's views are coloured by the interests of the multi-national entity of which he may be an affiliate. In such cases, the wider interests of the community must prevail but, by & large, licensing is the primary responsibility of the enterprise concerned & should be clearly recognised as such, with the Bureau playing an indirect & supporting role.

25. - In this paper, some of the objectives & implications of technology licensing have been sought to be highlighted. It is clear that the subject is complex & intricate & licensing can take a bewildering number of forms. Any simplistic solutions can be dangerous & developing countries must guard against taking steps which result in the freezing of technology inflow in desired sectors. While it is essential to be aware of the various implications, it is even more necessary to recognise that technological inflow in critical sectors of such economy is imperative & that this would require a pragmatic & flexible approach. In the process of bargaining for technology, if a restriction is applied which is totally unrelated to the Licensee's bargaining position, the result may well be that no bargain takes place at all. If this situation extends itself over the overall range of licensing, it may well prove disastrous, or certainly detrimental, to the interests of the developing country.

26. - It is in the above context & background, that the formulation of any detailed & binding international code could be considered. While the concept is laudable if it is internationally accepted & if it is conceived in terms of certain general principles, it needs to be very carefully considered if such a code should be couched in terms even more detailed than most guidelines prescribed by governments with years of practical experience in this field. What is perhaps far more significant than any code is a thorough awareness on the part of developing countries of the full implications of licensing so that each country can develop its own mechanism for dealing appropriately with this vital question. Such awareness is growing rapidly in these countries & a growing body of knowledge & experience is emerging which, if pooled & shared, can have far more practical & beneficial results.





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