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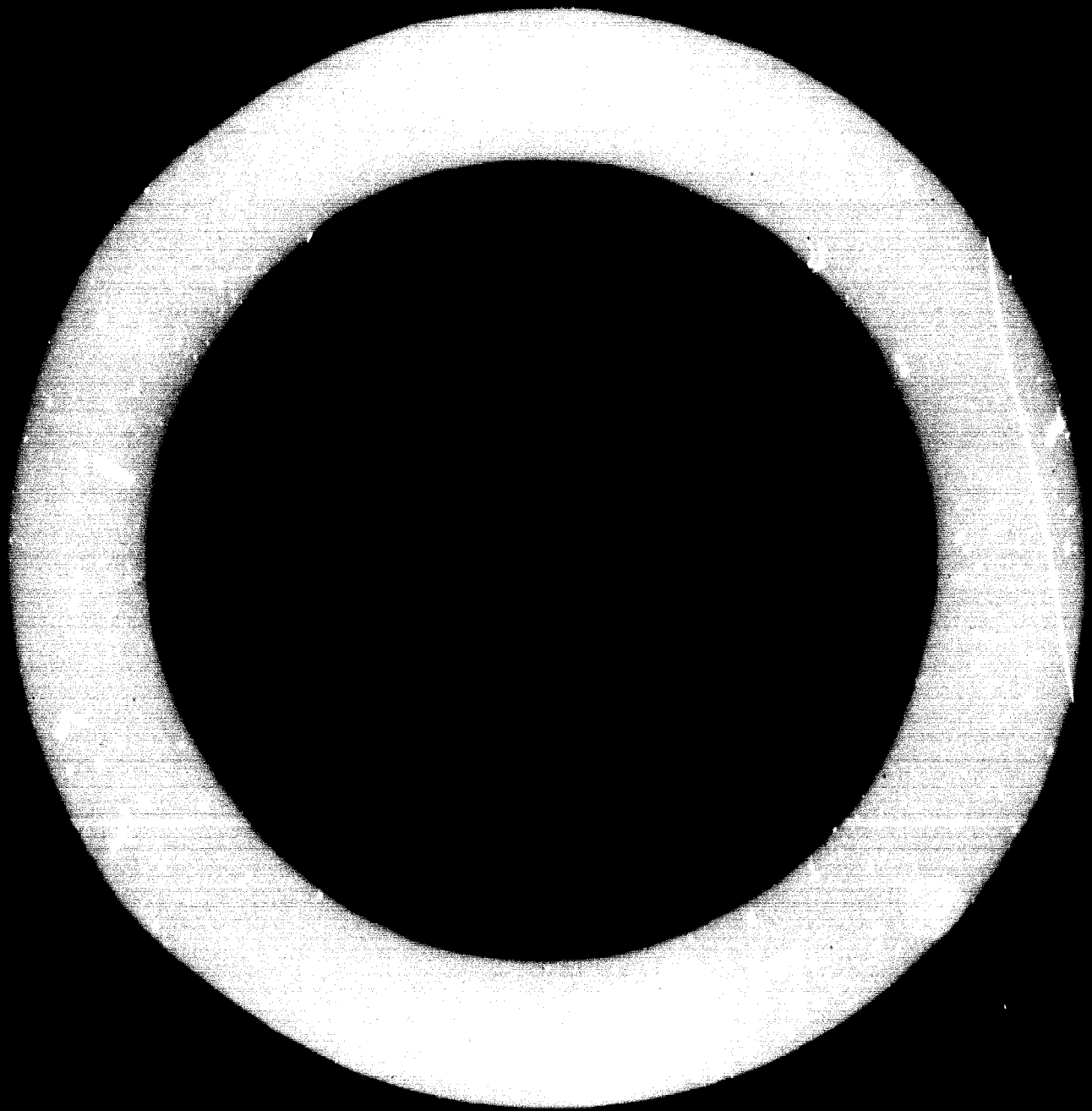
LICENSING OF TECHNOLOGY INTO THE
DEVELOPING COUNTRIES ✓

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LICENSING OF TECHNOLOGY INTO THE DEVELOPING COUNTRIES

A significant feature of the current international economic scene is the extensive flow of technology between nations. The transfer of technology has been very extensive and is rapidly increasing among corporations in industrialized countries, but such transfer is also taking place between the industrial enterprises of developed and developing countries. Technological development often accompanies new investment opportunities in developing countries but the form of technology transfer that is assuming much greater significance is the mechanism of licensing.

A careful study of the experiences of developing countries in recent years shows that certain basic changes are taking place in the approach of these countries towards licensing of foreign technology. Widespread fear of foreign economic domination, which marked the 1950s and the 1960s, has diminished appreciably; the role that foreign investment and technology can play in the industrial growth of developing nations is now generally recognized. At the same time, there is a definite trend towards greater economic independence, a trend that is reflected in the increasing number of regulations affecting the extent of foreign investment permitted in various industrial sectors.

Traditionally, the inflow of technology in developing countries has been an integral part of direct foreign investment. Considerable capital has been invested, largely by multi-national corporations, and together with this capital came a significant flow of technology.

During the last decade, however, many developing countries have become increasingly concerned about the inherent costs of such investments, not only in terms of outflow of profits and dividends, but also in the form of royalties, know-how fees and payments for goods and components imported from parent companies. This concern has given rise in many developing countries to a feeling that ownership and control should rest with local nationals as far as possible. This feeling is reflected in the growth of joint ventures with minority foreign participation. Accordingly, there is a trend towards a change in the form of foreign investment in these countries. It appears that foreign investment, in the next decade, will increasingly have to be in the form of joint participation in local industrial enterprises.

Another trend with regard to foreign investment is the greater selectivity being exercised by most developing nations, particularly those that have achieved a higher level of industrial development.

All these considerations may result in a percentage limitation of foreign holdings in new projects or in a gradual reduction in the foreign equity holdings of existing foreign subsidiaries.

In several developing countries such as Mexico, Iran and India, majority foreign ownership is not normally permitted with respect to new investments. In India, for example, there is also a list of industrial projects where foreign technology would be welcome but where no foreign capital participation is allowed. It should be noted, that the permissible pattern for foreign investment varies from country to country.

On this occasion it is not our intent to consider the qualitative implications of foreign investments in developing countries. However, it should be emphasized that a country's policy with regard to foreign investment is bound to have considerable impact on the manner in which foreign technology will be acquired in the future.

In respect of technology agreements that are not linked to foreign investment, developing countries tend to exercise a higher degree of selectivity. For these countries, it is important to define how technology and know-how can best be acquired, absorbed and adapted to local conditions.

In this connection, UNIDO is making great efforts to assist developing countries in establishing the necessary conditions and institutional framework needed for the acquisition of foreign technology. More specifically, UNIDO's assistance in this field is oriented towards the creation of a mechanism to perform both a regulatory and a promotional function in the procurement of foreign technology through licensing. In this context, UNIDO has been requested to assist in a case-by-case evaluation and scrutiny of proposed license agreements.

In all of UNIDO's technical assistance projects in this field, a careful analysis of prevailing conditions and technological requirements have to be determined in advance. The spectrum of

technological requirements naturally varies greatly from country to country, depending to a considerable extent on the stage and level of industrial growth.

The technological requirements of developing countries generally involve the acquisition of composite or packaged technology. The scope and nature of technological requirements of developing countries demand a wider approach that extends far beyond the direct transfer of patented or unpatented know-how. Accordingly, in the transfer of technology and know-how to the developing countries, various technical requirements for the establishment as well as for the operation of industrial enterprises should be taken into account.

The technological requirements for manufacturing enterprises in developing countries include some or all of the following points:

- (a) Pre-investment studies including preparation of a detailed project report (DPR);
- (b) Basic and detailed engineering including preparation of machinery specifications, plant design, factory layout, etc.;
- (c) Selection of equipment, plant construction, erection and installation of machinery and a start-up of plant;
- (d) Process technology; and
- (e) Technical assistance during the post-installation period, including training programmes and various forms of management assistance.

Through a well-oriented approach to the acquisition of foreign technology, the developing countries can ensure that the flow of technology is adequate to meet their basic needs for industrialization and can direct this flow to cover their major technological and production gaps. Moreover, they would be able to be more selective, choosing technologies that are appropriate to the needs of their economies and seeing that such technologies are acquired at a reasonable cost and on terms and conditions.

At the same time, the degree of technological dependence of developing countries has to be gradually reduced. Greater efforts will have to be made towards adaptation and development of acquired technology as well as towards the creation of a base for indigenous research and development activities.

All these objectives are difficult to meet, and some of them can be realized only after a long period of time. To attain these goals, even partially, a co-ordinated approach must be adopted by the governments of the developing countries. It is the responsibility of such governments to design a policy framework sufficiently comprehensive to cover all aspects of the acquisition of foreign technology.

In most developing countries, the commercial considerations for the acquisition of foreign technology play only a secondary role to policy issues relating to foreign investments or general contractual arrangements for the establishment of individual enterprises. Nonetheless, foreign technology as well as the mechanism through which it is transferred are issues of sufficient significance to merit a knowledge of the principal aspects involved.

In many instances licensing agreements in developing countries are conducted on an enterprise-to-enterprise basis. The prospective licensees, who are anxious to obtain modern technology on the most favourable terms, are more often than not quite knowledgeable about their market and its potential. However, the cost-benefit analysis applied by the local entrepreneur relates primarily to the economics of a particular enterprise, and the decision to finalize an agreement is naturally based on the expected degree of profitability. These considerations are essential for the successful outcome of any business venture, but from the point of view of a government of a developing country, it is important that wider socio-economic considerations be taken into account. This leads to a degree of regulatory control so that the acquisition of a particular technology, at a given cost and under certain terms and conditions, is in conformity to the overall interest of the national economy. It is therefore necessary that the government of a developing country adopt a co-ordinated approach to this question so that it can first identify certain technological gaps and then formulate a policy framework within which individual technology contracts can be negotiated.

In countries where there are considerable limitations on foreign exchange, the regulatory function should be exercised in such a way as to ensure that the technology to be acquired would be based largely

on local input. From the developing country's point of view, the objective is to maximize the local content of manufacture within the shortest period of time, and in some cases this aspect tends to be over-emphasized. However, foreign licensors should take into account the fact that the technology to be transferred should preferably be related to an increase in local manufacture. On numerous occasions, government officials of developing countries have expressed their concern about the unfavourable conditions they have to meet to obtain foreign technology and about the limited possibilities of selecting technologies that are well adapted to their local needs and conditions. Furthermore, they are troubled over various provisions such as restrictive and tie-in clauses regarding manufacture or sales that are normally incorporated in licensing agreements. A number of developing countries have requested the advice and assistance of UNIDO on these subjects.

A contractual provision that probably concerns most is the one that prohibits, limits or conditions the export of products manufactured under licence; and although it is difficult to draw general guidelines in this respect, it is essential that the owners of technology adopt a more flexible attitude on these matters.

Summary.

To summarize, the developing countries' past experience with regard to technology licensing will have a definite bearing on the future pattern of international licensing. Through careful studies conducted by UNIDO and other UN organizations, we have observed that certain basic changes are taking place in the approach of developing countries to licensing of foreign technology.

Apart from the increasing awareness of the role of foreign technology and investment, many developing countries are examining the implications of the acquisition of foreign technology much more thoroughly than in the past. The primary matters of concern to the developing countries are the issues which have an effect on their national economy.

It is important for foreign companies interested in licensing their technology to be aware of the significance of these changes and to understand the points of view of the developing countries. To the extent that potential licensors are aware of such issues, license agreements are not only more practicable to enter into, but are also far easier to implement.


Although the flow of technology to developing countries can take place on an enterprise-to-enterprise basis through various means, it will still depend largely on the overall climate and policy framework for foreign investment, on the one hand, and on the nature of the technical knowledge required, on the other.

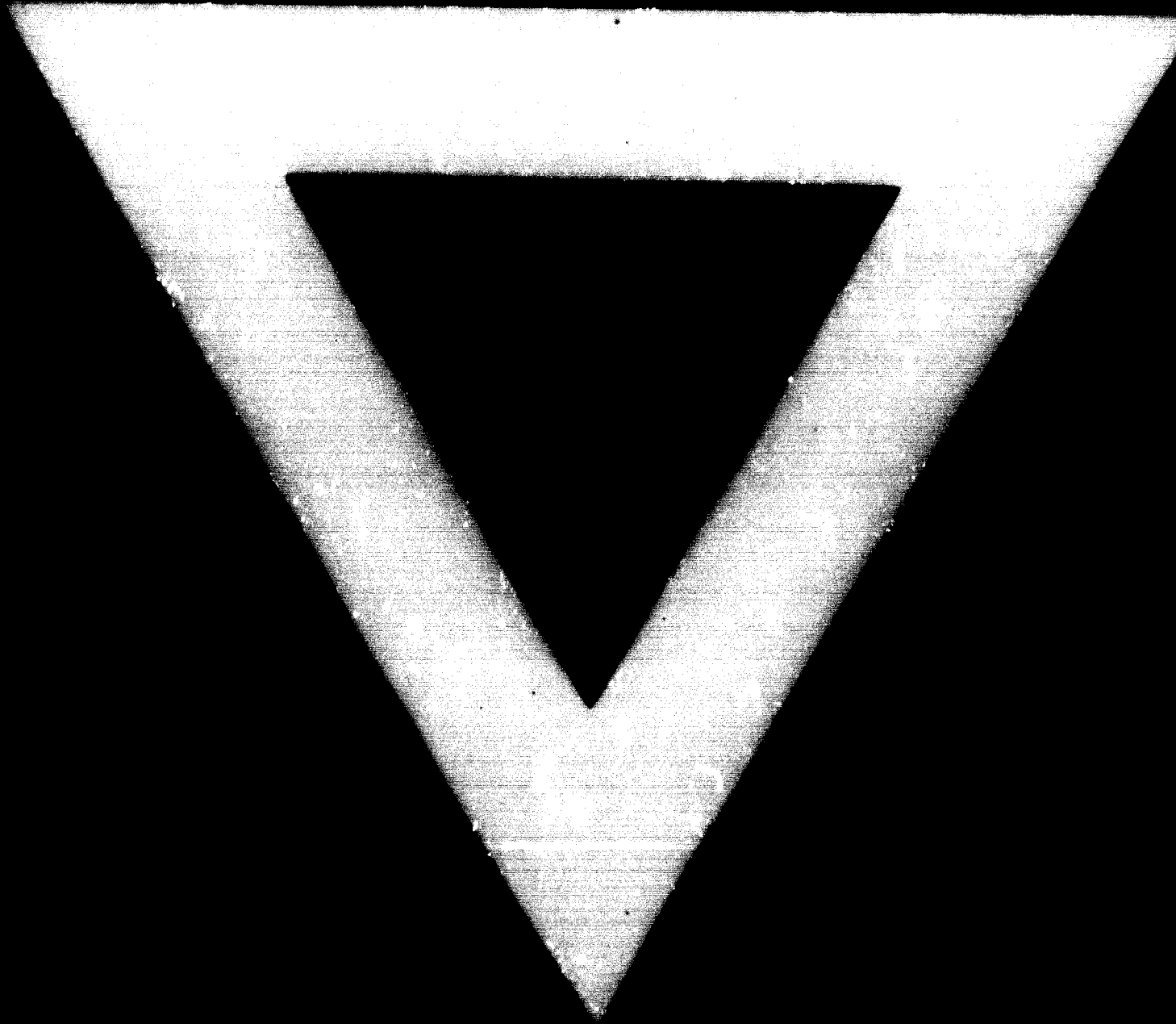
For the developing countries, a market for technology which is protected by patents, trademarks or any other form of semi-monopolistic control, is at present far from ideal. The relatively weaker position of prospective licensees is accentuated by the composite nature of the technology that is normally required.

In respect of the acquisition of foreign technology, the role of the governments of the developing countries will be a determining factor in licensing transactions in the years ahead. Most likely institutional agencies will be created specifically to deal with this question. UNIDO's efforts are geared to assist the developing countries in the establishment of such agencies and to help them to obtain a balance between their regulatory and their promotional functions. More specifically, we think that the inflow of technology should be encouraged and promoted so as to cover the gaps existing in the technological field in developing countries.

In fact that selectivity is called for in respect of the nature and cost of such transfer should not detract from the basic principle that developing countries urgently need technological know-how in various sectors of industrial activity and that adequate measures should be taken to create a receptive atmosphere for potential licensors and investors.

We are convinced that the inflow of technology will play an important role in an accelerated growth of various industrial sectors. We recognize that the transfer of know-how and technology through licensing will be one of the determining factors for the industrialization of developing countries.





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