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REPUBLIC OF IRAQ

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TRANSFER OF TECHNOLOGY  
FOR ARAB STATES

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the Government of Iraq

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FUNCTIONS AND ORGANIZATION OF NATIONAL OFFICES FOR TRANSFER  
OF TECHNOLOGY\*

prepared by  
the secretariat of UNIDO

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## INTRODUCTION

Government regulation of the transfer of technology is receiving increasing attention as awareness of the complexities of transferring technology growth in the developing countries.

National offices for the transfer of technology occupy a key position within the governmental framework established for regulating the acquisition of technology, since they implement national technological policies. Such offices may bear a variety of names. For example, in Latin American countries they are often called national registries for transfer of technology. In recent years, the creation of "centres for transfer of technology" has been subject to considerable attention in various international forums. Centres for transfer of technology, however, play a more promotional than executive role in implementing technological policies.

Regardless of whether special legislation regulating inflow of technology has been introduced or not, national offices for transfer of technology have been created or are going to be created in several developing countries : Argentina, Brazil Colombia, Ethiopia, Guatemala, Malaysia, Mexico, Peru, Philippines and Turkey, among others.

Up to now little literature exists on this subject, and the present paper is a first attempt to make up for this lack. The information presented is based on the extensive experience UNIDO has gained in advising countries on the establishment of national offices for the transfer of technology and in drawing up guidelines for legislation regulating the inflow.<sup>1/</sup>

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1/ The following countries received UNIDO assistance : 1972: Argentina; 1974 Ethiopia; 1973-76: Mexico; 1975: Uruguay; 1975: Guatemala; 1975: Turkey; 1975: Costa Rica; 1976: Philippines; 1976: Malaysia. Two United Nations publications that relate to acquisition of technology are : "Guidelines for the Acquisition of Foreign Technology in Developing Countries"(Sales No. 73.II.B1) and "Manual on the Establishment of Industrial Joint-Venture Agreements in Developing Countries" (Sales No. 71.II.B.23).

Basic Functions of a National Office for the Transfer of Technology

A national office for the transfer of technology executes government technological policies. It can also stimulate and influence, on the basis of its experience, the direction of those policies. It is advised that governments will consider granting a central position to such offices within the bodies of government that are concerned with technology and that such offices possibly be accorded the highest possible status if it is to perform its functions effectively.

In some developing countries it may be desirable for the national office also to provide information and advisory services to industry, both public and private.

The objectives of policy concerned with the acquisition of foreign technology may include for illustrative purposes the following :

- (a) To establish the most efficient means of selecting technology;
- (b) To ensure that technology shall be obtained on the best possible terms, which means that negotiating skills must be developed;
- (c) To ensure that the technology acquired shall flow into the essential sectors of industry;
- (d) To improve the process of adapting and absorbing technology;
- (e) To create and develop local technological capabilities.

In executing technological policies, the national office performs regulatory, coordinatory and promotional functions. In some circumstances the regulatory functions may predominate, while in others the coordinating or promotional functions may be more important. There is no single pattern that can be applied extensively in organizing a national office. Each developing country, after carefully analysing its own needs and specific conditions, must develop its own model once it recognizes the necessity for such an office.

Regulatory Functions : One of the key functions of the national office is to regulate the flow of imported technology. Government policy may be incorporated in legislation or decrees that state the explicit or implicit conditions under which technology may be imported. In carrying out policy, the national office evaluates agreements involving the transfer of technology, services and other kinds of intellectual and industrial property, including those involving foreign equity participation. It then registers the agreements approved. It is noted, however, that some national offices give an unofficial opinion on agreements before they are submitted formally for registration. Although such a procedure will give the office a great deal of work, it contributes to improving the functions of these offices.

In addition, the national office, along with other government agencies, establishes the priority areas of the economy into which the technology flow should be directed. The national office may endeavour to establish criteria for evaluating foreign technology that take into account the country's needs and those of the specific industrial sectors.

Most common technology agreements cover the following :

- Use or exploitation of trade marks, patents and secret non-patented know-how;
- Technical information in the form of plans, diagrams, models, operating manuals, formulae, specifications and training of persons in computer-based systems;
- Consulting agreements of any type;
- Supply of basic or detailed engineering;
- Management or administrative systems;
- Franchising agreements.

The evaluation process, on the basis of which the decision to approve or deny the agreement is made, usually involves three aspects :

- (a) Legal - conformity with prescribed national legislation and generally acknowledged rules for international transfer of technology;

- (b) Technical - possibility of adapting and utilizing technology, proper selection of technology to meet the requirements of the recipient enterprise as well as encouragement for local research and development;
- (c) Economic - analysis of the project's commercial viability, conformity to foreign exchange controls (if any), comparative analysis.

The national office may also pay attention to agreements providing for equity participation with capitalization of intangible rights.

From the experience of some developing countries where national offices have been established and operating for some time, the conclusion may be drawn that the national office in order to perform its role effectively may be considered to be granted direct responsibility for deciding all matters related to the transfer of technology, as an important element in the national technological policies. Attempts have been made in some countries to assign responsibility of decisions to a designated group, usually consisting of high government officials (ministers or deputy ministers). However, experience has shown that this approach poses certain difficulties in reaching decisions quickly. It may be advisable whenever possible to assign the responsibility of decision to the national office.

Coordinating Functions : The transfer of technology affects many areas of the economy, i.e. balance of payments and trade, domestic and foreign investment, fiscal policies, industry as a whole and its specific branches, research and development, and employment.

For the proper coordination of all aspects related to technology transfer, the national office may endeavour to establish direct contact with agencies in relevant areas of the national economy, from which data could be obtained and effectively used in the proper implementation of technological policies. The office may as well obtain access to other agencies of government that have also responsibility in deciding on matters of technology.

Promotional Functions : An important function of a national office is to promote better understanding on government policies and directives by the foreign suppliers of technology and the domestic business community.

The national office could assist in carrying out direct and indirect promotional efforts in foreign business circles through both official and unofficial channels.

Promotional efforts in the domestic business community are equally important. In developing countries, government regulatory policies are not always well understood. If these policies are to be executed efficiently, the cooperation of the domestic business community is considered essential. Such cooperation will be established if the business community understands and supports the government's goals.

The national office may endeavour to advise domestic businessmen on issues related to the transfer of technology, starting with the selection and evaluation of the technology and ending with the negotiation of the agreements. It could collect and analyze information on alternative sources of technology and on the most convenient terms of the agreements and by disseminating this information among businessmen. The advisory services of the national office could demonstrate its usefulness in the early stages of its operation.

Governments interested in establishing a national office of this kind may wish to consider the introduction of training courses for government officials and businessmen dealing with key issues of government policies and issues related to transfer-of-technology agreements. In this way the national office could improve its skills in this specialized field.

#### The Organization of the National Office

With due consideration to the fact that the national office normally engages in a substantial amount of effort of analysis and evaluation, three different units responsible for legal, economic and technical evaluation, respectively, may be incorporated in its structure. They



could in fact, form the core of the structure, and through them the office will carry out its regulatory, coordinating and promotional functions.

In addition to the the evaluation units, it would be advisable to establish an information unit to carry on the supporting activities described above. In addition, this unit could help to increase the efficiency of the office by seeing that agreements under review are processed promptly.

It may also be advisable to establish a unit within the national office responsible for coordinating the office's activities with those of other administrative units of the government (for instance, Central Bank, Ministry of Trade, Ministry of Foreign Affairs and Ministry of Finance).

Figure I gives the organisation chart of the National Registry for the Transfer of Technology in Mexico established by the Law for the Registration of the Transfer of Technology of December 1972.

As may be seen, the organisation of the Mexican National Registry reflects its basic regulatory functions. Such a structure shows that the final responsibility for making decisions rests with the director general, who by law is empowered to do so.

This type of organization, which has proved efficient in the Mexican context, allows as well for the functions of promotion and coordination. The National Registry in Mexico is attached to the Ministry of Industry and Trade, since technology transfer affects in particular those sectors of the economy; and the director general reports directly to the minister. Figure II gives the flow sheet for processing contracts submitted to the National Registry for registration (i.e. approval). It shows that agreements that are rejected after evaluation may be renegotiated. At this stage the Government may take a direct part in the negotiations to ensure that the agreements shall conform with its policies.

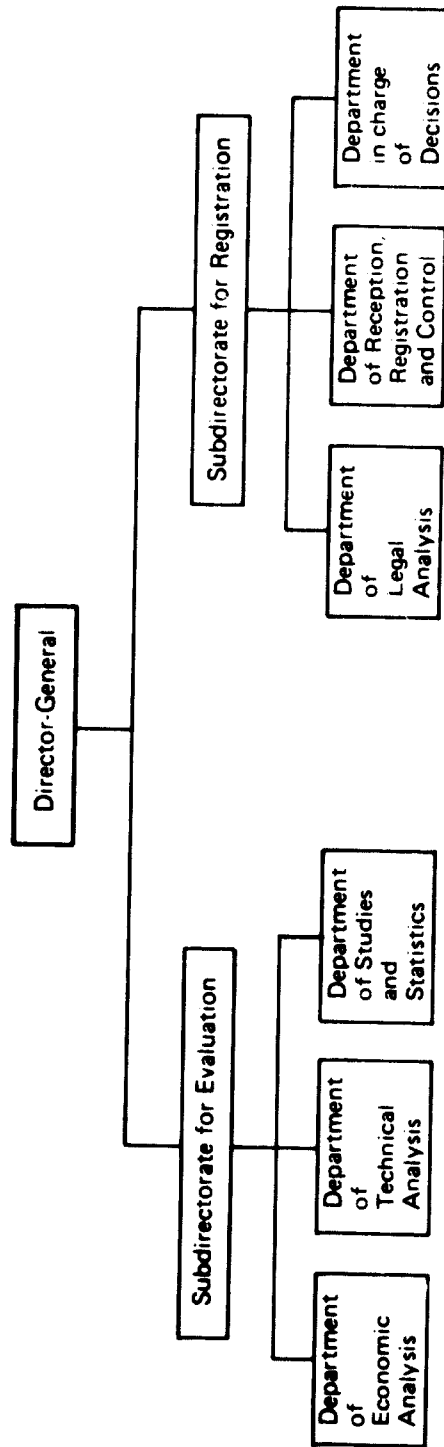


Figure I. Organization chart of the National Registry for Transfer of Technology in Mexico

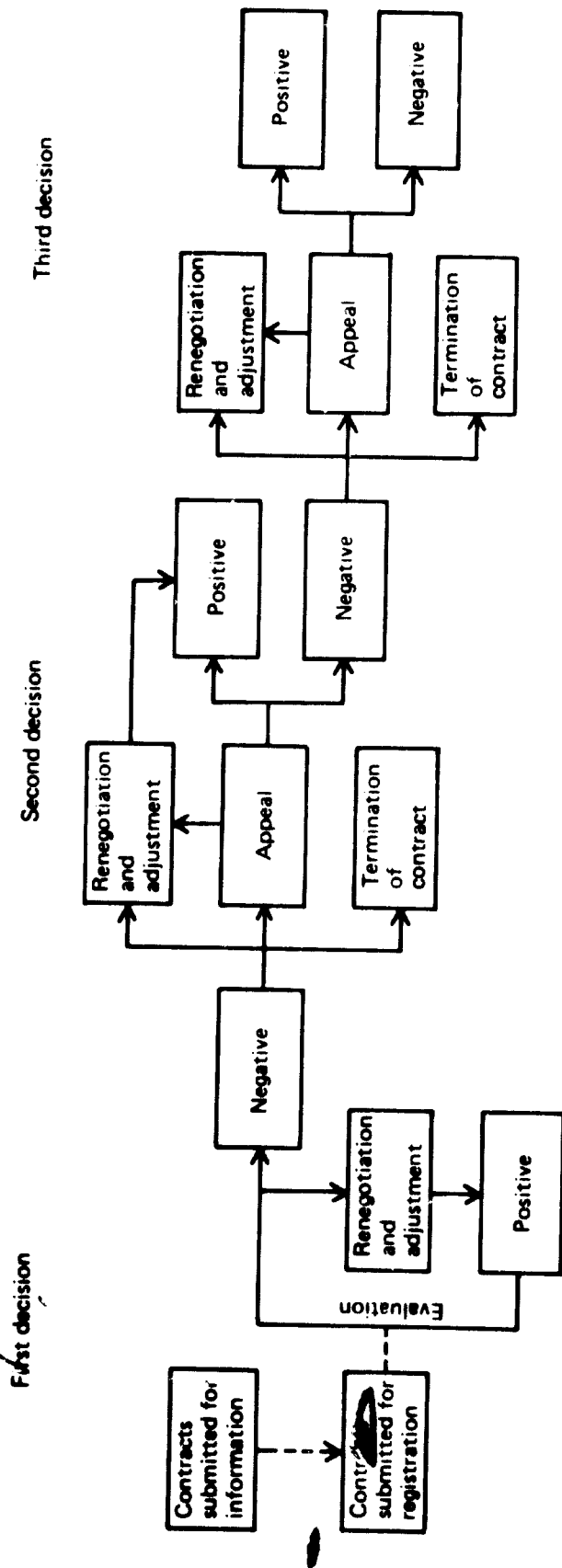


Figure II. Flowsheet of the process for approving or rejecting agreements presented to the Mexican National Registry of Technology Transfer

The Mexican law on technology transfer also provides that contracts may be submitted for "information". This provision was included because the Mexican law applied to all technology contracts signed before the law. Over 4,000 existing agreements were submitted for information. Those that did not conform to the provisions of the law had to be modified within a period of two years. The submission-for-information procedure also permits parties intending to enter into an agreement to ascertain the Registry's position before a final decision has been reached.

In Argentina, the national office is called the National Registry of Contracts for Licences and Transfer of Technology and is under the National Institute of Industrial Technology. The decisions of the National Registry are reviewed by an advisory committee composed of officials of the Secretariat of Industrial Development, the Secretariat of Science and Technology and the National Development Bank before they are submitted to the Secretary of State for Industrial Development for final approval or rejection. Thus, in Argentina the national office does not occupy as important a position as it does in Mexico. It evaluates and advises but does not make decisions.

In Sri Lanka, the evaluation of licence agreements is the responsibility of the Ministry of Industry. The agreements are then submitted to the Advisory Committee on Foreign Investment, composed of representatives of the Ministries of Planning, Industry, Finance, Trade and Exchange Control, for the final decision.

As a matter of information, in contrast to other countries, does not have foreign exchange controls, since Mexico has been able to maintain its currency freely convertible: no restriction is therefore imposed on foreign currency transactions.

The close link between the treatment of licence agreements and policies on patents has led some countries to assign the registration and evaluation of such agreements to bodies responsible for implementing the regulations governing industrial property. In Brazil, this duty is discharged by the National Institute of Industrial Property. In Peru, such duties are given to the Industrial Property Office under the Ministry of Industry and Tourism, which as well has the responsibility to evaluate contracts related to imported technology.

Since over 80 per cent of the trade in technology concerns know-how arrangements and only 15 to 20 percent of the agreements involved patents, the national office may not per necessity be attached to an industrial property office or a patent office. The long-term trends would seem to indicate that patent protection and patent policy, in particular from the point of view of developing countries, will possibly occupy a less significant position in a transfer-of-technology agreement. It should also be noted that industrial property offices do not perform those functions of national officers for the technology transfer described earlier in this paper.

Figure III includes another alternative of an organisation chart for a national office covering the functions described above; it follows the existing structure of national offices in Argentina, Brazil and Mexico and takes into account information obtained from officials in Malaysia, the Philippines and Turkey. The structure shown is only presented as a matter of example.

The evaluation carried on by the three key divisions (legal, economic and technical) forms the basis for the decisions the office takes concerning particular agreements. The information office lends its support by providing necessary data and information from both domestic and outside sources.

The office of the director maintains working contacts with other government institutions and with the domestic and foreign business communities.

Depending on the volume of work and the scope of responsibilities, the staffing of the national office could vary substantially. Experience shows that countries where the average number of agreements per year does not exceed 100, the staff should not be more than 20 professionals. Some activities (information, coordination etc.) may in such cases be performed by other agencies. Where the number of new agreements per year reaches 250 to 350 or more, a professional staff of 50 to 60 persons

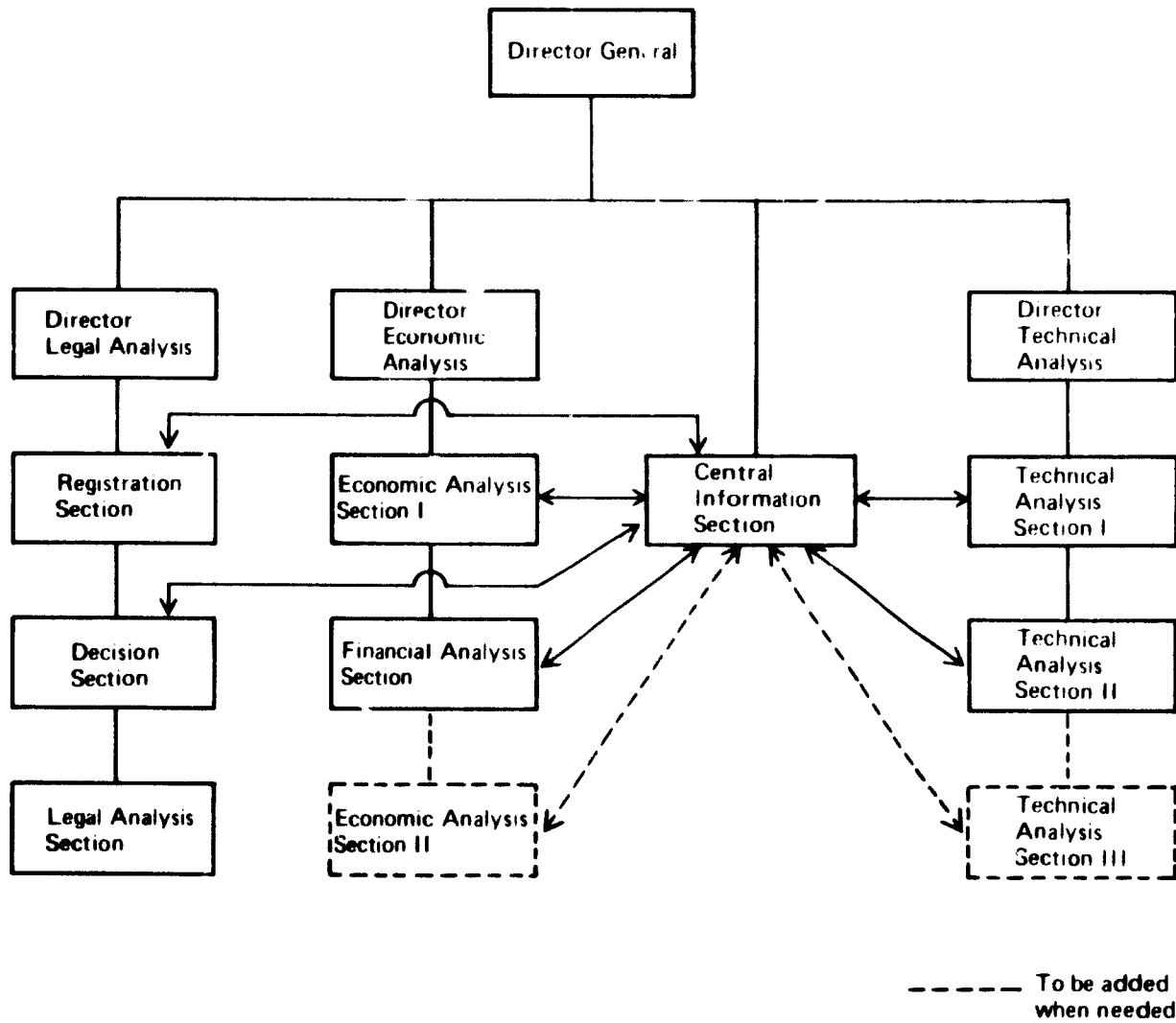


Figure III. Organization chart for a national office for transfer of technology

may be needed.

The cost of running a large office is high; but as analyses have shown in Mexico, the total savings on payments of technology in the course of two years have been 20 times as great as operating costs. An office carefully designed according to the actual needs of the country concerned, is no doubt justified.

The staff employed in the national office should be of the highest possible calibre. Some of the staff should be well acquainted with all aspects of technology transfer, finance and fiscal policies and possibly have had some experience in private or public enterprises.

### Evaluation Activities

The national office decides itself the number and type of documents that must be submitted with agreements that are to be evaluated and registered. The documents and agreements should be evaluated simultaneously by the legal, technical and economic units. Internal guidelines for evaluation should be continuously improved and updated for the purpose of reviewing the evaluation process itself and for analysing the effect on the flow of technology into the economy.

Guidelines for evaluation may well be used for purposes of comparative analysis and for renegotiation of agreements. The results of such analyses could lead to modifications of national technology policies and to improvements in existing or planned legislation.

For the purpose of this example it is recommended that guidelines for evaluation and internal check lists be drawn up according to various sectors whenever possible since the technology flow and the terms of technology agreements would vary considerably from sector to sector. Here, in particular, adequate information facilities closely associated with the office could play a very useful role.

In evaluating agreements, not only their terms should be examined but also their wider implications. Some basic points to be considered are listed below :

- (a) The transfer of know-how or technical knowledge acquired from the licensor is to remain within the control of the licensee;
- (b) The licensee acquiring technology is fully aware of all its

- (c) "Know-how", "technical information" etc. is clearly defined in the agreement;
- (d) The licensor is to be compensated on the basis of the principal elements that constitute the subject of the agreement (know-how, patents);
- (e) Compensation and the form of payments take into account the nature of the technology transferred;
- (f) The licensee is adequately protected in terms of the technical performance of the process or production scheme through appropriate process guarantees and warranties;
- (g) The agreement specified the responsibility of the licensee and of the licensor in achieving performance of the technology;
- (h) When applicable, the licensor provides information on marketing techniques so that the licensee will be able to operate effectively in the market place;
- (i) When applicable, information on process improvements will flow steadily;
- (j) Provisions are made for the speedy settlement of disputes on technical matters;
- (k) The licensee is given a reasonable period in which to absorb the technology;
- (l) The licensee should be able to operate his plant efficiently after the agreement formally expires.

Three steps can be taken to facilitate the smooth operation of the evaluation process. First, a deadline can be set for handing down decisions on agreements submitted for evaluation, which might be 60 to 90 days after the date of submission. Secondly, either party (domestic or foreign) to an agreement can be required to submit it for evaluation within a stipulated period (15-30 days after signature of the agreement). Thirdly, the national office can establish a system of fees (paid by the parties to the agreement) for evaluation and registration of agreements.



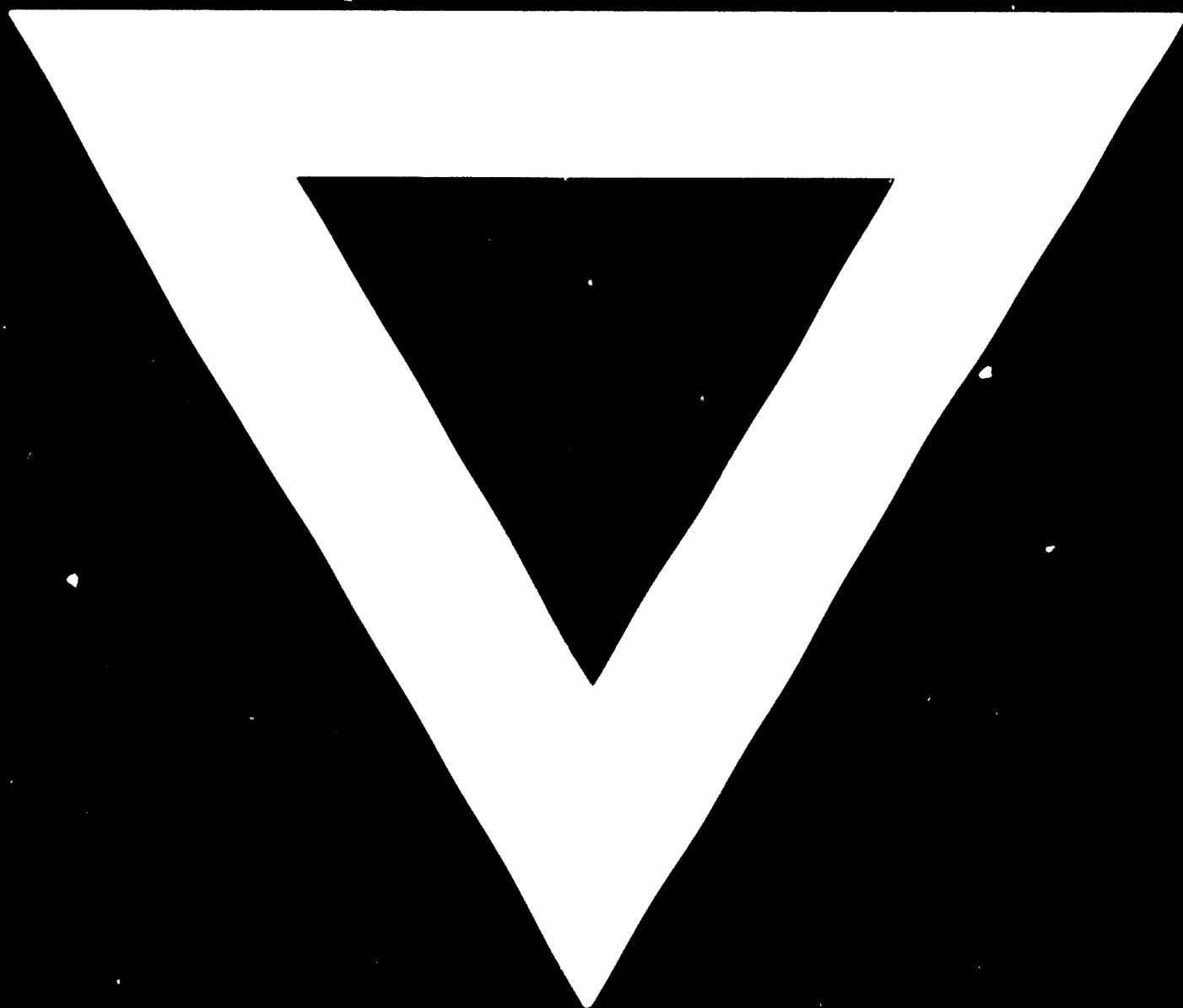
It should again be stressed that a national office for the transfer of technology may be established in countries where industrial development plays or is going to play an important role in overall development and where the existing system for the flow of technology does not function efficiently.

If the national office is to play a positive role in industrial development in general and in the technology transfer in particular, it would be advisable that a specific government framework be created and support and understanding won from businessmen, both private and public.

Finally, it must be considered that while the national office for the transfer of technology appears to be the most efficient means of protecting the legitimate interest of developing countries and of contributing to the increase of the flow of technology on better terms than would be the case without it, its organization and functions, should be continuously evaluated and modified so that the office will perform efficiently as conditions change.



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