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INSTITUTIONAL REGULATION OF ACQUISITION OF TECHNOLOGY IN DEVELOPING COUNTRIES [1]

by

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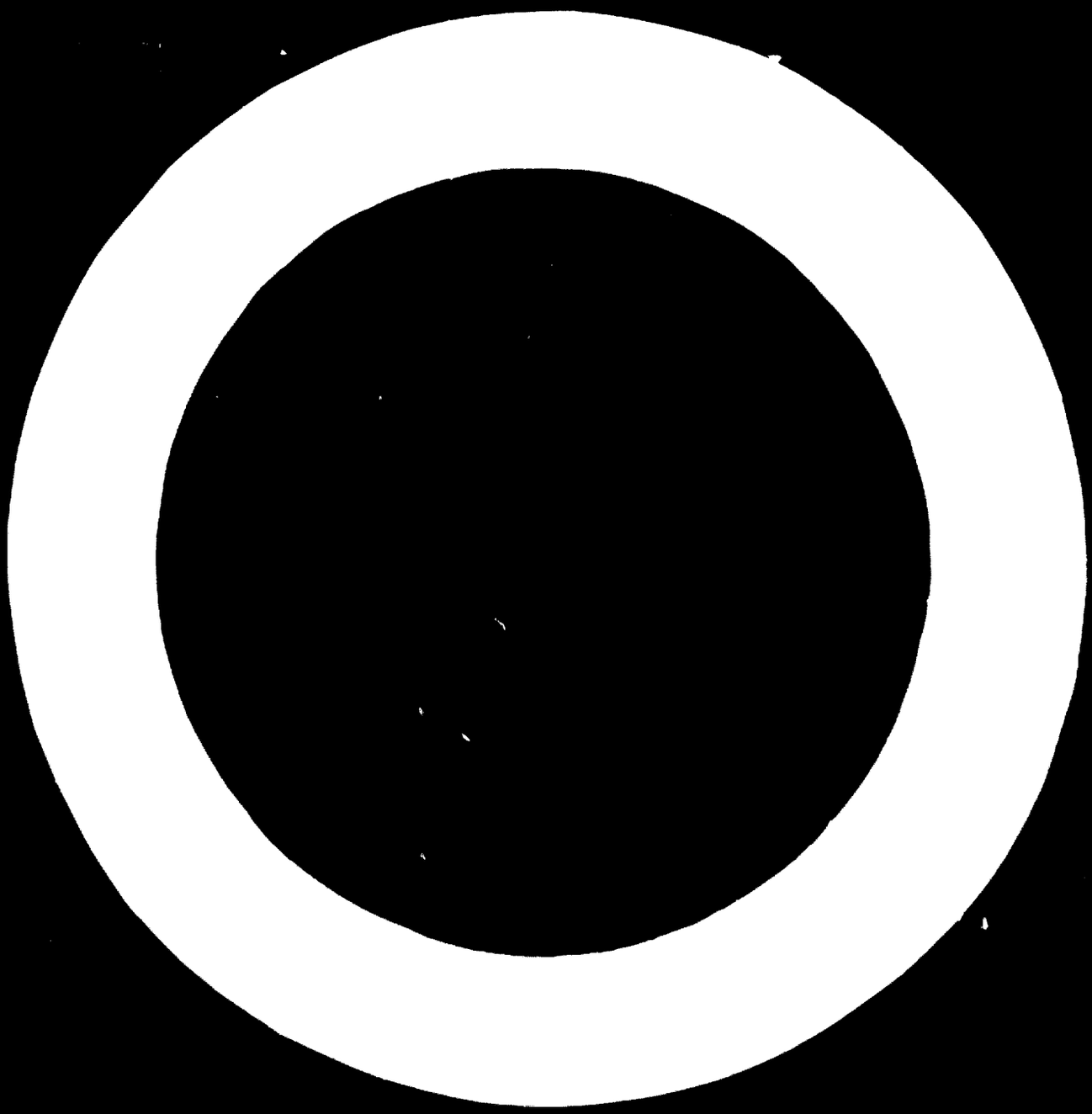


Institutional regulation of acquisition of technology in developing countries.

The rapid growth of technology licensing has been a significant feature in the growing international links and relationships between manufacturing enterprises in different countires. Both in developed and developing countries, licensing has emerged as a principal instrument for acquisition, pooling and transfer of technological knowledge. In developing countries, where emphasis and discussion in the past has largely revolved around the role of direct foreign investment, there is increasing realization that inflow of technology through licensing arrangements has a major impact of its own. While there is fairly universal recognition of the growing technological gap and the need for technological inflow from industrially-advanced countries, there is also nevertheless a degree of uneasiness regarding the impact of unrestricted technological inflow and the overall price that the economy has to pay in this regard. As developing nations move up the ladder of industrial progress, the implications of such unrestricted inflow may become more pronounced and a gradual dichotomy in approach tends to develop. While the essential need for foreign technology continues to be recognised and accepted, and increasingly so where local products have to face international competition, there is greater emphasis both regarding the nature of technology to be acquired and the terms and conditions on which such techniques and processes are secured. It is this exercise in selectivity and closer consideration of the terms and conditions of technology licensing agreements that emerges in the form of institutional regulation of technology transfer in many developing countries. Such regulation is still a relatively new concept, but in the last few years, it has

received greatly increased attention, particularly in many Latin American and Asian countries. With wide differences in economic conditions and in the stage of industrial development, the approach to this question is also inevitably widely divergent and there are still many developing countries where there is no significant regulatory control over technology agreements. Yet, the pattern appears to be gradually changing and a new trend is clearly discernible, a trend towards greater exercise of selectivity and varying degrees of regulatory control regarding the terms and conditions under which technology is supplied to licensees in developing countries. The regulatory role and functions need, however, to be carefully defined, so that a suitable institutional framework can be created and the complex issues involved can be considered in clear perspective.

2. The need for a degree of regulatory control has to be viewed against the overall impact of unrestricted technology inflow in each country and the specific impact on the industrial sectors and enterprises directly concerned.+ While technology licensing undoubtedly introduces modern and sophisticated production techniques and plays a vital role in the growth of particular sectors and enterprises in developing countries, it is also necessary to consider the repercussions on indigenous technological growth, together with the direct economic implications of unrestricted inflow. Licensing arrangements between enterprises in developed countries, operating from a similar technical base, are more in the nature of transfer of special technical information, usually patented. In the case of enterprises in developing countries, the flow is not only one-way, but tends to be of a much more comprehensive and composite nature, involving much higher costs and resulting in undue dependance on foreign technological support, if care and selectivity is not exercised.

+For a fuller discussion of these aspects, reference is invited to "Guidelines for the acquisition of foreign technology with special reference to licensing agreements", an UNIDO study with which the author was closely associated.

3. In respect of indigenous technological growth, the impact of foreign technology on the licensee enterprise and on indigenous research and development in the industrial sector concerned depends largely on the capacity for absorption and adaptation. Where this is feasible and receives emphasis, as in Japan during the post-war period, the results are very beneficial. On the other hand, most enterprises in developing countries have a tendency for undue and continuing dependance on the foreign licensor. Relatively little attention is paid by the licensee to adaptation, or even rapid absorption, of the technology unless the technology agreement is limited to a particular duration. The insistence in this regard in some Latin American countries and in India is largely due to the need for local enterprises to absorb the acquired techniques and to stand technologically on their own feet as rapidly as possible. The impact of foreign technology and the utilization of foreign technical service facilities, such as engineering consultancy, marketing arrangements and the like, may also have an adverse impact on the use of indigenous technical service facilities unless care is taken in this regard at the stage of licensing agreements. The import of technology and the use of a foreign brand name by a particular manufacturer tends to have a "multiplier" effect in so far as other manufacturers in the same field are concerned. This, in turn, has corresponding impact on both the growth of indigenous research and service facilities and the utilization of such research and technical services by local enterprises. The exercise of selectivity in respect of technology imports, which is a basic feature of any regulatory approach, has necessarily to be related to the growth and utilization of indigenous technology and technical service facilities in the related field of manufacture. This is of even greater significance in manufacturing fields intended primarily to meet domestic-market requirements.

4. The economic aspects, which necessitate a degree of regulatory control, stem largely from the direct financial implications of acquisition of foreign technology over a wide range of industries and the problems and weaknesses that enterprises in developing countries face in selecting appropriate technology and in negotiating suitable licensing agreements. The technology bill tends to increase rapidly with the expansion of the industrial base and a stage is soon reached when a good, hard look is necessary from the viewpoint of overall costs of technology in terms of fees, interest, royalties and increased maintenance imports. As regards the cost of particular technology, the market is usually protected by patents and trademarks and tends to be semi-monopolistic in most cases. The more composite nature of technological assistance and services required by enterprises in developing countries, together with the relative lack of knowledge regarding alternative technology sources and inexperience in negotiating technology agreements also places the prospective licensee from the developing country at a considerable disadvantage. The regulatory function is often sought to be exercised, both in order to reduce the overall bill for technology through greater selectivity and to redress the balance to some extent in so far as negotiations for specific technology licenses are concerned.

5. Any regulatory approach must, in the first instance, be based on adequate knowledge of the prevailing position regarding domestic availability of technology in various sectors and the terms on which existing technology arrangements are being operated. In many developing countries, there is no system even of registering technology agreements and little information is available in this regard. This becomes all the more pronounced in the case of foreign subsidiaries and affiliates, where the foreign partner who

is often a multinational corporation regulates the inflow of technology far more from the viewpoint of multinational operations than from the needs of the particular local enterprise. The introduction of a system of registration of all technology agreements would bring various aspects of existing agreements into sharper focus and constitutes an essential starting-point for the implementation of any purposive regulatory control. Together with this, it is also necessary to broadly identify the major production and technological gaps in any economy, so that certain priorities can be prescribed regarding the principal fields in which foreign technological inflow is considered particularly necessary.

6. The most important issue is to define the scope and role of regulatory control, as there is considerable danger either of over-regulation or of exercising inadequate regulatory control. While the detailed situation in this regard would differ from country to country, it is possible to conceive of certain broad norms that can be followed. It is essential, in the first instance to recognise that the principal parties must obviously be the enterprises concerned. The success or otherwise of a technology agreements depends largely on the mutual goodwill and working relationship established between the licensor and the licensee and this presupposes that the responsibility for detailed negotiations and finalisation of the technology agreement must rest primarily with the enterprises concerned. This is also necessary in order to develop domestic entrepreneurial initiative and expertise in this increasingly complex field. From a practical viewpoint also, it is neither possible or desirable for a regulatory institution to go into the detailed intricacies and negotiations relating to each technology agreement. At the same time, to leave the technology agreement

entirely to the discretion of the licensee may well result in a heavy burden on the economy in terms of acquisition of processes and techniques which are unnecessary or inappropriate or which impose unduly high costs by way of royalty and other payments or which tend to retard indigenous technological development. For the licensee enterprise also, its weaker bargaining position could result in the imposition of undesirable and restrictive conditions by the licensor, which has been the fairly common experience in most developing countries.

7. Technology agreements have, therefore, to be considered both in respect of their macro-implications pertaining to the economy as a whole and with regard to their micro-impact on the individual licensee enterprise. The regulatory function has to be suitably evolved to cover both these aspects in a purposive and balanced manner. While these features overlap to a considerable extent, there are certain aspects where the narrower interests of the licensee enterprise may not necessarily coincide with the wider social interests of the economy. These aspects need to be carefully defined for the exercise of an appropriate regulatory role. There are also many aspects of licensing agreements which are legitimately and appropriately within the purview of licensee enterprises and where the exercise of regulatory control may be undesirable beyond the prescription of certain broad norms for the guidance and protection of licensee enterprises. It is important to achieve a harmonious balance in defining the regulatory function so that while the wider interests of the economy are protected, licensee enterprises still have enough latitude in negotiating technology agreements in accordance with their specific needs. A brief examination of some of the principal features of licensing agreements would bring this issue in clearer perspective.

8. A basic aspect of any technology agreement is the appropriateness of the particular technology. Here, the regulatory function may prove to be of considerable importance. In a number of cases, imported technological processes have involved unduly high costs, have tended to be highly capital-intensive and have necessitated a large percentage of maintenance imports for many years, whereas more simple manufacturing techniques based on a greater degree of labour-orientation could have equally served the purpose. On the other hand, there have also been numerous cases where imported technology, sometimes linked with the transfer of used capital equipment, have tended to be obsolescent and unsuitable. The prospective licensee often finds it extremely difficult to achieve a correct balance between the two and a competent regulatory agency could perform a vital advisory role in the selection of appropriate technology, leaving the details to be worked out by the licensee enterprise. A more direct regulatory role may need to be exercised in determining the areas where technology inflow is not really necessary. There is, for example, a tendency in developing countries towards indiscriminate acquisition of foreign processes and trade marks for various consumer non-durables. While this may be desirable for certain items, particularly where exports and foreign exchange earnings are involved, any indiscriminate inflow tends to retard local inventiveness, apart from the direct and indirect costs involved. It would be useful to consider whether it is really necessary for developing countries to import foreign processes for the manufacture, for example, of certain beverages or biscuits or brands of ice cream.

9. An important related question is the extent of direct foreign investment accompanying the inflow of technology. While

the role of foreign investment receives considerable attention in most developing countries, the inter-relationship of such investments with technology transfer arrangements is given much less emphasis. This is, however, an extremely important aspect and the nature of the technological relationship between a foreign company and its subsidiary or affiliate and particularly in the case of joint ventures, needs to be clearly defined. The increasing trend towards joint ventures with foreign capital participation of less than 51%, because of the insistence in developing countries on majority local ownership, is of considerable significance in the determination of technology transfer arrangements in such cases. The fact of foreign investment participation does ensure, up to a point, that the process of transfer of technology is full and complete but it is nevertheless desirable that the nature, contents and terms of such transfer are clearly defined. The extent of direct foreign investment in a joint venture should also find reflection in the terms and payments for technology. This is a more detailed aspect, which is primarily for the domestic partner to negotiate, but where the position of the latter is weak, it may be necessary for the regulatory agency to ensure that the terms of technology transfer are satisfactory, apart from determining the extent of foreign investment participation in a particular case.

10. A feature of licensing agreements with enterprises in developing countries is the comparatively greater extent of foreign technical services that are provided for, apart from transfer of manufacturing processes. In many cases, there is also a close link between licensing arrangements and supply of machinery and equipment. On both these counts, it is necessary to take into full consideration the level of local technical expertise and domestic

manufacturing capacity. In many cases, engineering and other technical services are built into the technology agreement and constitute a high proportion of the costs. To the extent that local technical services are adequately available, these should be fully availed of, and should be insisted upon as there may even be a preference on the part of the licensee for foreign technical services. The same holds good for domestic machinery and equipment, though the system of import controls in many developing countries gives considerable protection to locally manufactured equipment and largely takes care of this aspect.

11. In many developing countries, considerable stress is being given to the domestic content of manufacture in proposals involving foreign technology. This aspect can be best considered along with the licensing agreement itself. There is often a tendency on the part of licensors to regulate technology inflow so as to increase the proportion of local content only in easy stages and so that an assured market for components and sub-assemblies can continue for as long as possible. The exercise of the regulatory function is important in determining a suitable phased programing of domestic manufacture in proposals involving foreign technology.

12. In so far as payments for technology by way of fees and royalties are concerned, the primary responsibility must rest with the licensee, though a regulatory agency could usefully prescribe certain broad norms and assist prospective licensees in assessing whether the payments asked for are reasonable. The norms could, for example, prescribe that the base for royalty calculations should normally be the ex-factory value of sales minus the landed costs of components imported from the licensor.

These could also provide for avoidance of minimum royalty payments, as far as possible. At the same time, insistence on royalty being limited to any particular percentage as is prescribed in India and Mexico often results in the licensor insisting on a higher lump-sum fee or other forms of payment. Intervention by a regulatory agency may become necessary only if the royalty and other payments appear disproportionately high as compared to payments for other comparable processes in the same country or other countries. A degree of flexibility has to be maintained on this question as the price for a particular technology may differ considerably over a period of time and is dependant on various factors. It should be primarily for the prospective licensee to ensure that the price for a particular technology at a point of time is fair and reasonable and the regulatory role should largely be one of guidance, rather than interference, except where intervention is clearly called for.

13. The duration of licensing agreements is an aspect where the regulatory function assumes considerable importance. In cases involving running royalties, the licenser would normally prefer as long a period as possible. In many cases, the licensee also tends to accept a longer duration as this ensures access to the technology for a longer period and involves lesser efforts for absorption and adaptation. From the viewpoint of the economy, however, the life of a licensing agreement should be limited to such period as is necessary for its effective absorption and to the life of such patents as are covered by the license. In many cases, a period of 5 years is quite adequate, though in cases of more advanced processes and techniques, the period could go up to 10 years or even more in very exceptional circumstances.

What is necessary to ensure is that the period is adequate for absorption of the knowhow, provided genuine efforts are made by the licensee in this regard. This aspect assumes increased significance at the time of renewals of licensing agreements and the regulatory role has to be carefully considered at this stage.

14. An important field of regulatory consideration relates to various restrictive and tie-in clauses in licensing agreements. These include restrictions on sales territories and provisions for compulsory purchase of components and intermediate products from the licensor. While an inflexible attitude should not be adopted by any regulatory institution in respect of such provisions, there is often need for assisting the licensee in securing provisions which are not detrimental or unreasonable, but are nevertheless quite pragmatic.

15. Institutional guidance and the prescription of broad norms can also be usefully extended to prospective licensees in developing countries in respect of other important provisions in any license agreement. Norms would be useful, for example, in respect of license provisions relating to sublicensing and confidentiality, guarantees, termination and arbitration and the governing law relating to the technology agreement. It is equally, if not more important, to provide guidance and assistance to licensees on various other provisions such as the content of technology to be acquired, access to improvements, and clauses relating to the use of patents and trademarks. Apart from assistance on the contractual aspects of license agreements, institutional guidance could also usefully be provided in many developing countries regarding alternative sources of technology, the latest innovations in the sectors concerned and the likely costs that may have to be paid. Institutional support should,

however, stop well short of replacing the licensee in negotiating specific license agreements, as this could otherwise detract from the basic nature of a license agreement. Even where a regulatory agency considers certain proposals in a licensing provision as being unsuitable or inappropriate, it would be desirable that responsibility for re-negotiations should be left to the licensee and not be arrogated by the regulatory institution.

16. The emphasis given to broad norms and institutional guidance for licensees in developing countries as against detailed regulatory rules covering the various aspects of a license agreement is primarily to stress the need for a considerable degree of flexibility in dealing with technology license proposals. Such proposals, particularly when they relate to enterprises in developing countries, differ widely in their scope and content and any rigid and inflexible set of rules covering all aspects of a license agreement may well result in either hampering the flow of necessary technology or in circumventing of the rules by one means or another. A similar situation can arise in respect of legislation for governing technology agreements, as has been introduced in some countries. While the rationale behind such legislation is valid and understandable and while such legislation may well be necessary for the introduction of the regulatory mechanism itself, any legislative approach which seeks to cover the details of licensing agreements introduces an element of inflexibility, which may not be desirable. What is perhaps far more necessary is full awareness and knowledge of the implications of each proposal, on the one hand, and measure of overall regulatory scrutiny on the other, so as to ensure that the overall interests of the economy and the specific interests of the concerned industrial sector are adequately safeguarded.

17. The above two-fold approach needs to be reflected in the structure and functions of any regulatory institution in

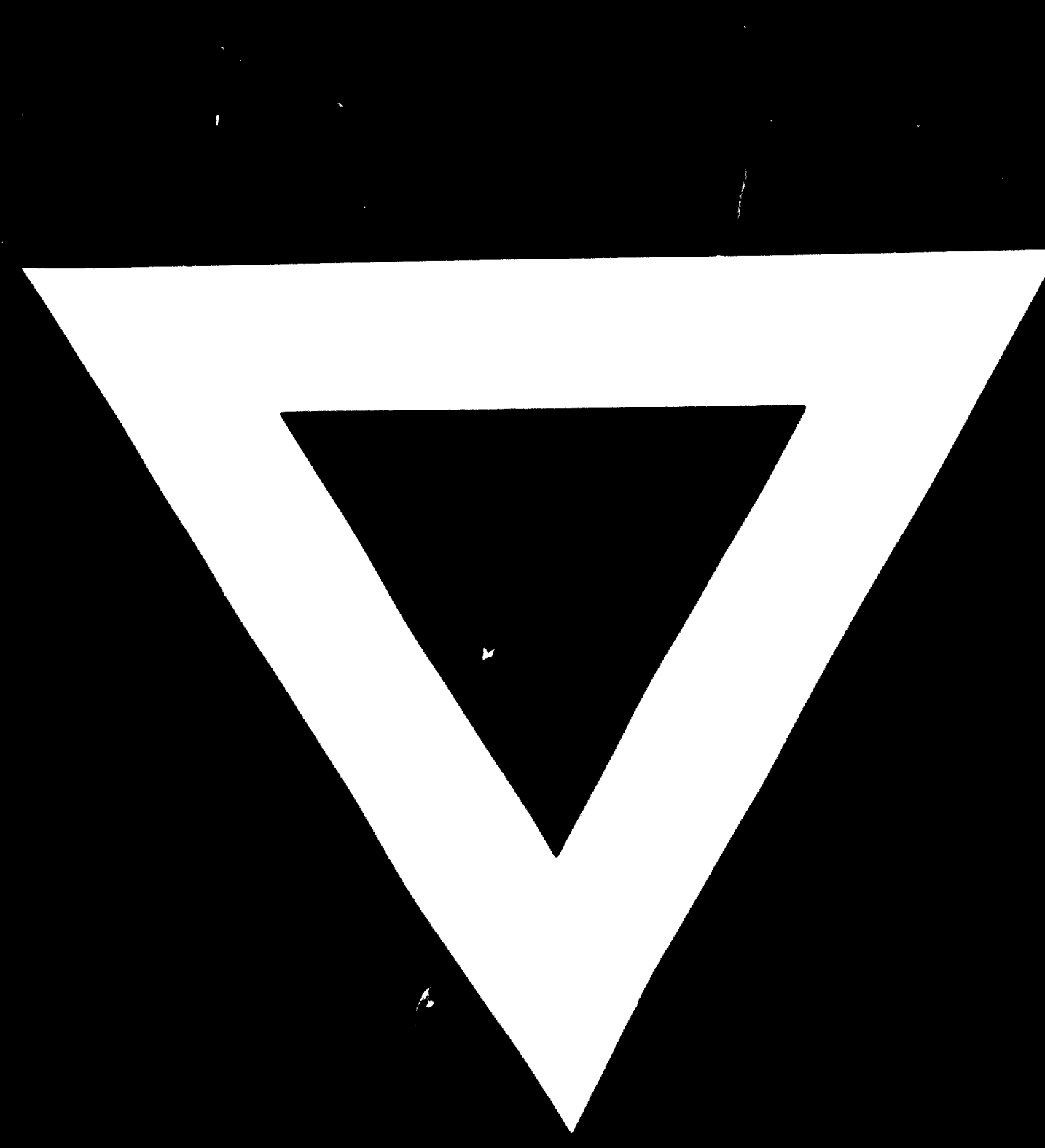
this field. On the one hand, such an institution should possess detailed information regarding technology-supply arrangements and developments within the country and should also gradually become a repository of knowledge regarding technological innovations and developments in other countries, together with trends in licensing in various sectors. This is necessary in order that the institution can provide effective guidance and assistance to prospective licensees and can draw up broad norms and guidelines. The organization would necessarily require to have both technical experts and persons having knowledge and experience of technology contracts. On the other hand, such an organization could then constitute the necessary administrative and technical agency for examining various technology-supply proposals and to submit its views on such proposals to the decision-making regulatory body of the institution. In view of the extensive coverage of technology agreements and their impact on industrial growth, it would be desirable if the decision-making body, which could be called the Board of Technology, should comprise of senior representatives of the concerned governmental departments and technical and industrial research organisations and distinguished public representatives having extensive knowledge of local industry.

18. The procedural mechanism should provide, firstly, for registration of all existing technology agreements with this body within a specified period and, secondly, for submission by licensees of all proposed technology agreements for approval by this body before these are acted upon. For the latter purpose, a suitable application form could be prescribed covering details of the proposal. This could be examined and submitted to the Board, which would meet periodically to consider such cases. In the event of the Board considering any modifications as being necessary, the

licensee should be advised to re-negotiate the agreement suitably and to resubmit the proposal after such re-negotiations. A suitable time-limit of 4 to 6 weeks should be prescribed for detailed scrutiny of any proposal and its submission to the Board, as it is essential that there should be no undue delay in the processing and approval of such cases.

19. An important function of the regulatory institution would be to ensure adequate follow-up in respect of technology agreements that are approved. It is only through regular flow of information regarding such cases that the approach adopted in various cases can be tested and evaluated in the light of actual experience. There continues to be a substantial information gap regarding the actual working and experience of technology agreements in developing countries, which increases the difficulty of framing a coordinated policy approach in this regard.

20. It is necessary to reiterate the need for an effective balance being achieved between regulatory control over technology licensing in any country and the initiative and latitude which must be allowed to licensee enterprises in negotiating licensing agreements. Such a balance is often not easy to achieve and the role of an international agency, particularly the UNIDO, could be very significant in this regard. The UNIDO could not only provide objective and pragmatic guidance in prescribing the role and functions of institutional agencies set up in developing countries for this purpose but could play a vital part in the establishment and growth of these institutions as expert organizations which would ensure that technology inflow is channelized fully according to the needs and best interests of the developing country concerned.



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