

An Overview: Practices in Third World

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A survey showing ways developing countries have formulated technology transfer policies

The issue of technology transfer and its role in overcoming the backwardness of developing nations in Africa, Asia and Latin America has dominated international political debates since the mid-60s. Contrary to some expectations of a gradualist discerning interest on the part of the international community, the issue regained importance in the 1980s, with a clear perspective of remaining a subject of top priority throughout the next decade. Such a revival may be principally linked to the recent surge of technological revolution which brought about a widespread diffusion of the so-called new technologies which show enormous potential of being effectively implemented not only in developed but also in developing regions.

In view of the unsatisfactory and quite often harmful effects of international technology transfer, which were accomplished through multilateral market channels, many developing countries have formulated their own national (and sometimes also regional) technology transfer policies, as well as established legal and institutional mechanisms for their implementation. As a result, a valuable experience has been accumulated in technology transfer regulation since the last 20 years.

What is more important, one can identify unique characteristics of regulatory practices in this field, i.e. the ways in which a government can affect operating business environment that which are not found elsewhere. These were reflected, *inter alia*, in a very broad scope of government involvement, which in some cases played the role of a "third party" in international tech-

nology transactions. From the institutional perspective, the establishment of specialized government agencies which have very broad prerogatives and deal specifically with technology transfer regulation should be mentioned.

The main objective of this study is to evaluate the regulatory practices in the field of technology transfer within the North-South context. Unlike typical approaches prevalent in the literature on the subject (which concentrate on the formal aspects, i.e. existing laws, official policy declarations and prerogatives of institutions involved), we shall primarily deal with regulatory practices which are often related to its implementation.

Henceforth, we generally have in mind the ways in which the laws are interpreted and effectively applied. More specifically, we shall be dealing with the functional rules and procedures of the respective government agencies and their operating practices, ways of handling detailed issues, etc. Although existing laws provide a basis for regulatory actions, such practices are primarily reflected in the day-to-day activities of specialized government agencies, eventually to be sanctioned in the latter ranking normative acts. More than 30,000 technology transfer contracts being maintained by the National Office of Industrial Property (ONPI) of Brazil during last 10 years may well exemplify the volume of practical knowledge and experience available, at least in some developing countries.

Despite a growing recognition of the need for evaluating actual practices rather than the concentration on the formal regulatory framework, the former approach has not received adequate attention within the context of general debates on

the scope, directions and effectiveness of technology transfer policies in developing countries. This might be viewed as a serious shortcoming of such debates, bearing in mind the following:

1. Technology transfer has proved to be a very complex and multi-dimensional process so that many essential modalities were not able to be accommodated in the formal regulatory framework. Consequently, the transformation of the existing laws into regulatory practices — especially in those countries, where broad discretion was granted to the relevant government bodies — has to be interpreted in the actual shaping of the relevant policies. Such assessment seems to be fully justified, if the government intervention is being perceived from the perspective of the microeconomic agents, i.e. foreign supplier and local recipient of technology.

2. In many circumstances the changes in regulatory practices are used by the recipient governments as a substitute for a more fundamental adjustment of the legal and institutional framework. Despite some obvious shortcomings, this method has proved to be more practical, allowing for a more flexible reaction to external and internal challenges.

The study does not attempt to provide a comprehensive overview of the regulatory practices of developing countries on technology transfer. It concentrates rather on key problems in the regulatory process and alternative institutions. As a general rule a pragmatic approach has been adopted throughout the

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study. Specific regulatory measures are always discussed in the context of their real effects rather than formal declarations and intentions. The analysis relies predominantly on the experience of those developing countries which actively participate in the UNCTAD TIES (Technology Information Exchange System) co-operative network.

TECHNOLOGY TRANSFER AS A SUBJECT OF REGULATORY PRACTICES

Main Categories of Technology Transfer Transactions

Previously defining the subject of regulation has become one of the most crucial and probably most difficult problems in formulating and implementing technology transfer policies in developing countries. The reason is quite obvious. For all parties involved (i.e. relevant government bodies, recipient and supplying firms) it was of the utmost importance to clearly establish the rules in order to elicit benefits and forms of economic activity not to be regulated. Thus, despite the inherent complexity and diversity of forms and channels of technology transfer, extensively debated by the academic community, the policy-makers had to introduce precise definitions relating to categories of transactions which were subject of screening and regulation under the technology transfer laws.

Initially, the question of controlling the technology-transfer process from the recipient country's perspective was points, by related to licensing agreements. In a narrow sense, the term "license" implies transmission of industrial property rights, i.e. the right to use a certain expert knowledge or know-how. In the context of international technology transfer, the licensing contract is interpreted more broadly so as to cover the transmission of a certain expert knowledge and the right to use it. Thus, the license for the transmission of property rights is not only considered as being of lesser importance to developing countries, although to quantitative issues their relative share is quite substantial (e.g. trademark licenses). The concentration of government inter-

vention on licensing agreements can be attributed to the fact that under imposed conditions within the international technology market, such agreements were seen as a major instrument for the imposition of exchange fees by the suppliers as well as the imposition of various restrictive measures which bore negative consequences for technology recipients.

On the other hand, in the 1970s, when the implementation of technology transfer legislation in developing countries gained momentum, there was a clear understanding that technology was transferred through various channels and its impact was much broader than the transmission of property rights only. Thus, in fact, resulted in various attempts to cover a wider spectrum of technology transfer transactions.

Although some developing countries adhered principally to the narrow approach (i.e. the concentration on licensing contracts only), the prevailing trend was to achieve a "right" combination of two approaches. Under the latter concept, licensing agreements were always seen as the most essential technology transactions. As a result, detailed regulatory principles and jurisprudence were primarily developed with a view to licensing agreements. Consequently, comprehensive experience has been accumulated in this field. At the same time, attempts were made, usually with some delays, to extend the scope of regulation to service contracts and other transactions as well.

Regulating Embedded Technology Inflows

So far, the acquisition of machinery and equipment still represents the most important channel of technology transfer into developing countries. However, the attempts at extending regulatory procedures to cover the so-called "embedded" transfers are very limited and rather discouraging. For example, the Nigerian Law of 1999 explicitly identified the arrangement for the purchase of plant and machinery as being subject to technology transfer regulations. Early attempts at im-

plementation of the said Law by the National Office of Industrial Property (NAOIP) helped to reveal major problems and bottlenecks in this respect. Those originated, inter alia, from the evident overlapping of regulatory responsibilities of several government bodies dealing with the same issue and especially with the agency issuing import licenses. Consequently, NAOIP adopted a revised interpretation of the Law of 1999, whereby purchase agreements involving the import of machinery and equipment against import licenses need not be submitted to the office unless the contract involves the employment of foreign personnel.

Regulating Technological Service Transactions

Unlike raw attempts to cover purchases of machinery and equipment, the extension of technology transfer regulations so as to cover various foreign inputs such as training, engineering, provision of documentation, management, consultations, etc. (which are generally covered by the term "technical assistance") has been widely accepted by a great number of developing countries, especially in Latin America. Superficially, this may be considered as a slight modification of the license-focused procedures. It brought far-reaching consequences in terms of day-to-day operations of the government regulatory bodies. First, even in the case of the broad meaning of the term "licensing agreement," the principal elements of such contracts were clearly defined and, accordingly, standard rules and procedures of evaluation, registration and monitoring could be adopted. This was not the case with the so-called technical assistance agreements.

Second, there is a full range of arrangements falling within that group and despite various efforts, no widely accepted classification of service agreements has yet been developed. Third, the formulation of the principal elements of such contracts differed substantially from licensing agreements. Taking payment conditions as an example, the fee structure is either substantially

modified management agreement or based on an entirely different concept (e.g., potential loss in consultancy agreements). Fourth, the inclusion of technical services substantially broadened the number of contracts subject to registration procedures, which imposed additional requirements as to the experience and qualifications of government staff involved in the valuation, registration and monitoring of technology inflows.

Thus, by adding technological services, government regulatory bodies were confronted with serious problems. They lacked adequate procedures as well as additional professional staff to deal effectively with such agreements. Moreover, it was practically impossible to avoid loopholes in the regulatory framework so that firms could easily avoid direct intervention by those government agencies responsible for controlling technology inflows while concluding technical service agreements.

• Response •

The practical responses undertaken by various regulatory agencies in developing countries can be divided into two major groups. First, the most experienced technology transfer registries which handle a large number of service contracts, have embarked on devising detailed domestic rules and procedures in order to deal with specific technical service agreements (e.g. management and training) as its principal elements (e.g. level of professional fees).

Second, an attempt was made to more precisely define the scope of regulation so as to eliminate those agreements of minor importance where government approval was deemed to be unnecessary or even detrimental (e.g. in the case of ad hoc troubleshooting services, repair of machinery, etc.). For example, the Peruvian regulations clearly stipulate that any sporadic and short-term services which do not constitute a supply of technical data and which are paid for with a fee or tariff independent of the volume of production or sales, are not subject to registration. Alternative

ways of narrowing the scope of registration are reflected in the establishment of a minimum ceiling for the value of technology payments (20 million pesetas in the case of Spain) or contract duration (18 months in the case of Ghana).

Despite above-mentioned efforts, the extension of regulatory procedures towards technical service transactions is far from being fully accomplished even by the most experienced technology transfer agencies. Licensing contracts still dominate as a distinct category in which relevant procedures are predominantly addressed. The technical service transactions remain in a "grey area" of technology transfer regulation, where the lack of experience and well established procedures coincide with some doubts raised by the business community as well as by government officers, as to the stability and meaningful effects of government controls in this field.

Dealing With "Package" Transactions

In addition to the previously mentioned difficulties in defining the subject (scope) of regulation, another serious problem is day-to-day regulatory practice results from the fact that technologies are often transferred under various "packages," combining tangible and intangible assets, equity, external financing, etc. Let us first consider the arrangements exclusively covering the transfer of intangible assets. Here, one may point out the wide application of composite agreements for the supply of various technological inputs, such as "licensing and technical service agreements." On the other hand, such "packages" are often split into separate but interlinked agreements. For example, know-how and trademark licenses combined with management and technical services. Under such contractual setups, the regulatory agency may not be able to adequately evaluate the combined effects of all agreements in the package, especially if these are deliberately submitted for registration over various intervals of time.

So far, the procedures for dealing with such combined "packages" or combinations have not been clearly

defined. However, the more experienced registries require inference data on all related agreements for crosschecking and evaluation of combined effects.

A more complicated problem of regulatory practice arises when diversified technologies represent only a small portion of the large investment package combined with asset arrangements and/or with foreign equity participation. As a rule, host government bodies (those dealing with the industrial development programs, direct foreign investment, external financing, etc.) are already involved in the decision-making process at the preparatory stage. Under such circumstances, the intervention of the technology transfer registry at a later stage, when the relevant contracts are being negotiated, is rather impractical due to the fact that before the final acceptance of the deal by the foreign partner, financing of the project, etc., the preliminary clearance of all value-related contracts is usually required. An analysis of the accumulated experience in this field points to the incidence of alternative arrangements, under which — in the case of complex deals — standard regulatory procedures are substituted by informal intra-governmental consultations with all agencies responsible for various aspects, starting from the pre-investment stage of the project cycle.

FUNCTIONAL AND INSTITUTIONAL ASPECTS OF TECHNOLOGY TRANSFER REGULATION

Forms, Objectives and Scope of Government Intervention in Technology Acquisition Phases

Government actions affect technology transfer in a variety of ways. Since technology becomes an indispensable component of the industrialization program, the role of the long-term development and industrialization strategies should be mentioned in the first place. A great many developing countries have implemented detailed policies which directly affect technology development and transfer. In the present study, we shall concentrate primar-

ity on direct and practical ways of legislation which are taking place in many developing countries through the actions of specific government agencies by means of the following major regulatory functions:

— Evaluation and negotiation of technology transfer agreements.

— Financing and advisory services for local enterprises in the acquisition of technology.

— Monitoring the implementation of technology policies and formulating proposals for necessary policy adjustments.

The scope of regulation, i.e. the degree of government involvement in the decision-making process of technology transfer, varies considerably among developing countries. This could principally be attributed to fundamental philosophical differences of strategy for development, organization of economic activities and the role of government in general. These are also reflected in the overall orientation of regulatory actions. In some countries, the major emphasis is laid on adequate controls of technology inflows, whereas others concentrate on promotion and assistance to the local companies acquiring technology.

Studies are given country, the regulation practices are substantially diversified as well. In the analysis conducted so far, we have clearly demonstrated that the scope of regulation is greatly differentiated, depending on the type of contractual arrangement covering technology transfer, the economic sector or industry framework represented another differentiating factor in the regulatory practices of technology transfer in developing countries. As a rule, the relevant laws have been applied to all sectors, but in some countries, specific sectors have been excluded (e.g. extractive industries and agriculture).

For obvious reasons, the attention of the regulatory agencies is concentrated on the manufacturing sector. The relevant procedures have attempted to reflect the development priorities established in individual countries with respect to specific sectors and industry branches. In recent years, a growing number of developing countries have been including

the so-called new technologies in their priorities generally concentrated on a few high technology industries, and finding widespread applications throughout the economy. In the latter case, the regulatory practices are aimed at ensuring a wider access to and fast assimilation of such technologies.

Finally, we should point out another aspect affecting the scope of regulation, namely the incidence of equity relationships between the supplier and recipient of technology. In the case of inter-length transactions, government involvement has been typified by a much stronger and indeed dominant position of the supplier on international technology markets. In equity-linked contracts, government intervention has to be more intense as market forces are practically nonexistent. This line of thinking has been reflected in more rigid procedures and policies, either clearly prescribed by law or demonstrated in the regulatory practices implemented by technology transfer agencies.

Performing Major Regulatory Functions

Registration of technology transfer elements — This function definitely represents the cornerstone of the regulatory process in the field of technology transfer. Although other functions are sometimes performed without registration, the administrative authority and resulting leverage of government agencies vis-à-vis foreign and local business partners, can in principle be combined with an obligatory compliance to the registration procedure.

The analysis of relevant experience of a number of developing countries again shows a great diversity of existing arrangements as to the scope and orientation of the evaluation and registration process. For the purpose of a systematic analysis only, three types of registration can be distinguished, starting from the lowest to the most comprehensive scope of government intervention.

Registration for recording purposes only — In this instance, companies

entering into technology transfer agreements with foreign parties are requested to submit copies of the contract together with additional basic information. Except for the formal registration (which, however, gives the local company the right to seek payments), there is no intervention on the part of the government. The Argentine regulations on agreements concluded by foreign affiliated parties might well serve as an example of registration for information purposes only.

In view of the extremely limited scope of government intervention, the direct effects of such recording (e.g. in improving contract conditions) are practically negligible. However, it does provide a background for the performance, on a limited scale, of other functions such as selection consisting of payments of licensing fees as well as the analysis of main trends or annual trends in technology transfer. It should be emphasized that recording only requires a limited number of clerical staff to process the relevant documents and issue registration certificates.

Contract-based registration — Hence, the agency evaluates the agreement in order to establish whether the relevant clauses comply with existing laws and/or have legal normative acts and guidelines issued by the registry itself. Although companies are expected to submit a questionnaire containing information on project data in addition to the contract documentation, the analysis concentrates predominantly on the contract clauses. The registries in the first place look into the clauses defining payments, duration, governing law, clauses of a restrictive character, clauses necessary to protect the interest of the recipient, etc. In most cases, contracts which do not comply with the existing regulations are not rejected but are sent back to the recipient for renegotiation.

With a view to organizing the registration process, it is essential that the evaluation is standardized and accomplished in a relatively short period of time by a small group of people, e.g. three to seven professional staff.

Project-focused registration — Here, the evaluation goes much beyond the contract itself and concentrates on the implementation of the investment project; a particular contract is linked to it. The underlying idea for such an approach is that the planned efforts to be achieved through contract implementation will constitute the principal background for evaluation instead of the formal clauses themselves. As a result, registries look very closely into the technological aspects, economic and financial results, and finally into the strictly legal aspects.

Undoubtedly, the project-focused evaluation provides the most comprehensive framework for a clear decision, as seen from the overall development perspective. However, registries embarking on the project-oriented evaluation have been confronted with many problems of an organizational and functional character. First, a comprehensive set of project data abstracted from the feasibility study is required from the technology recipient. This immediately poses serious problems, as the latter is quite often not prepared to supply such data. His experience has also shown, the quality of project data contained in the background documentation leaves much to be desired.

Second, unlike the previous types of registration, the project-focused analysis requires functional and/or sectoral specialization of the inquiry staff. In most cases, functional specialization prevails and the technical, economic, financial and legal aspects are evaluated by separate registry units. On the other hand, the technical and economic issues in technology agreements as well as relevant development policies are very much industry- or sector-specific, which calls for some degree of sectoral specialization in the registration process. So far, the functional specialization has definitely prevailed among registries, but in some cases, for instance, in Nigeria, a matrix pattern has been adopted, where each of the functional departments is assigned a particular industrial sector.

Last but not the least, the project-

oriented evaluation becomes a time-consuming and skill-intensive operation. Obviously, this contradicts a general trend towards simplification and speeding up of all administrative procedures in the host developing countries.

While investigating the experience of individual developing countries, one can easily identify those which generally conform with one of the types of registration mentioned above. Others, however, may be placed somewhere between these basic categories, e.g. between simple recording and contract-focused as well as between contract- and project-focused registration.

Relationship with the local business community — The relationship between firms recipients of technology and the regulatory agencies has undergone a major transformation over the last twenty years. While evaluating the experience of the early 1970s, reference should be made to the overall conditions for North-South technology transfer prevailing at that time. These were characterized by the widespread evidence of the excessive payments and restrictive practices as a result of at least partially, the fact that in the majority of cases, the technology transactions were concluded between parent and subsidiary companies. Although not always explicitly formulated in national laws and regulations the regulatory agencies for obvious reasons, differentiated their attitudes toward technology recipients, depending on whether they were independent local firms or subsidiaries of transnational corporations. Originally, with respect to the latter category, government interventions was justified by the apparent non-existence of a truly local party in the intra-firm technology transfers. As a result, the government had to assume the role of the "third party" to serve three national interests, both at the micro and macroeconomic levels. Thus, relations between the local subsidiary acquiring technology and the government agency were determined by an apparent conflict of interests.

However, in the course of time

such attitudes have gradually changed. Technology transfer registries realized that the interests of the parent and subsidiary companies need not be identical, especially as decentralized corporations. The latter have shown a much greater flexibility and responsiveness to the host country's requirements in recent years. Moreover, despite obvious conflicting positions, the areas of convergent interests have widened. For instance, the placing of nationals in key operative posts or implementing comprehensive training programs in subsidiary companies in developing countries. No-wadays, while striving to protect national interests, government agencies are more and more inclined to look for common goals and promote activities which offer long-term benefits to all parties involved in the technology transfer process. The results of such policies, which proliferated in the 1980s are rather promising, especially in expanding exports of manufactures and stabilizing R&D activities in subsidiaries in developing countries.

◆ Background Assumptions ◆

With respect to relationships with independent local recipients of technology, the background assumption has always been that local firms are weaker partners when dealing with foreign technology suppliers. Consequently, government intervention becomes indispensable to strengthening bargaining power and protecting the interests of the local party as well as the interests of the country as a whole. On the surface, this would imply a far-reaching convergence of interests and result in a close cooperation between the government and the local business community.

Unfortunately, this has not always been the case. It quite often happens that rigid administrative procedures and control mechanisms were imposed by the local business community as additional red tape, delaying the acquisition process. Inexpensive technology buyers tended to underestimate the negative implications of some re-

strictive clauses on payment conditions and did not support the requirements imposed by government agencies. In the most extreme cases, local buyers secretly collaborated with the suppliers in order to win final approval of the contract.

In the 1980s, a gradual shift in the relationship between government agencies and local buyers can be observed. This coincided with the emphasis being placed by many countries on promotion, information and advisory services as well as the training of local businessmen. An attempt was made to equip local partners with the necessary experience and techniques so that they could better absorb their interests. As a result, the cooperation and mutual understanding between the respective government agencies and the business community have improved substantially.

The contacts of technology transfer agencies with the state-controlled companies were generally of a more complex nature. As a rule, the latter intervened in the acquisition of technology in connection with the implementation of major investment projects in the extractive industries, agriculture, infrastructure, public utilities, etc. In such cases, various government agencies were involved in the decision-making process already at the early stages of the project cycle. Technology transfer agencies usually made their recommendations on the technological aspects, but the negotiation procedure was modified to allow consultations with other government agencies.

Monitoring. — For the sake of clarity, monitoring will be defined as a set of measures undertaken by the respective government bodies aimed at controlling and evaluating the effects of implementing a technology transfer. While assessing the monitoring functions, governments attempted to move from static legislation to a dynamic intervention in the technology transfer process. The scope and complexity of the monitoring activities are closely related to the type of legislation adopted in a given

country. On the other hand, a clear distinction has to be made between the so-called micro-monitoring and macro-monitoring.

Micro-monitoring. — Here we have in mind the control over the implementation of individual agreements. In the simplest form, micro-monitoring is conducted by the central bank or other financial authority which controls the remittance of technology payments. Ad hoc monitoring relating to specific contracts is often conducted on a case-by-case basis. More formal procedures have been introduced in some countries. Firms applying for extension or amendment of existing agreements have to submit data on the effects of technology acquisition during the initial period. Very few countries, especially those conducting project-financed negotiation, imposed general requirements on submission of monitoring reports from all technology recipients on a regular basis. Here, then, evaluation is usually limited to a sample of the contracts.

Macro-monitoring. — Macro-monitoring relates principally to the evaluation of general trends and aggregated effects of technology acquisitions over a longer period of time. Even with the simple recording of contracts it is possible to identify the total number of contracts required, their sectoral and geographic distribution, total payments, etc. For policy formulation and/or adjustment it is of the utmost importance to evaluate aggregated effects of technology acquisition on employment, exports, imports, manpower development, R&D, etc. However, technology transfer registries have been confronted with major barriers. First, the staff, being usually preoccupied with the day-to-day negotiations, are not able to conduct a statistical analysis based on individual monitoring reports. Second, the quality of data submitted by technology recipients leaves much to be desired and cannot be used without further verification. A viable alternative, irregular and/or seasonal surveys are being conducted in order to meet specific requests.

It should be emphasized, however, that the recent progress in

computerization of registry information systems could greatly facilitate the performance of the monitoring function. This has already been reflected in some countries which have begun to publish official registry reports presenting aggregated figures on technology inflows and their effects on a regular basis.

Institutional Set-up and Coordination

The establishment of an adequate institutional framework for regulating technology transfer represents one of the most difficult problems governments in developing countries have been confronted with. Two conflicting directions may be herewith identified. First, technology acquisition represents a very complex process and has to be seen within the broader framework of development policies. This calls for close coordination of technology regulators with:

1. Industrialization programs in general. In this connection, here with, the broad industrialization objectives and priorities with respect to specific industries and over periods have to be taken into consideration while regulating technology inflows.

2. Technology development policies. It is obvious that technology acquisition has to be well coordinated with the national effort.

3. Foreign economic policies. Technology acquisition in the narrow sense, i.e. covered by technology transfer agreements, has always to be viewed in connection with other foreign inputs such as external financing, direct foreign investment, imports of machinery and equipment, etc., as well as take into consideration such issues as expansion of exports and foreign debt.

On the other hand, it has become obvious that the functional and organizational arrangements should facilitate efficient handling of negotiation, and more specifically, registration procedures without excessive red tape. In this context, it is worth mentioning that several countries have introduced "one-window" policies whereby foreign investors can obtain all necessary government approvals in one place.

So far, no real trend has emerged

as to the institutional arrangements for technology transfer regulation in developing countries. As a result, there is a great variety of regulatory agencies, which might be qualified as "technology transfer agencies." They differ as to the level of placement within the government hierarchy, size, scope of responsibilities, links with other government bodies, etc. It is therefore impossible to offer a comprehensive and systematic analysis of institutional arrangements for technology transfer regulations in developing countries. Two aspects should be pointed out which, in the author's opinion, could gain wider application in the future.

First, for registries entailing on comprehensive, project-focused monitoring, there are substantial benefits in combining the evaluation of two clearly identified foreign inputs, i.e. direct investment and technology transfer. In fact, in a number of developing countries foreign investment proposals and technology contracts are reviewed and approved by one government office.

Second, the apparent conflict between the efficient evaluation and registration, on the one hand, and the need for implementation coordination, on the other, might be at least partially resolved by a dual arrangement whereby the relevant procedures are conducted by the technical secretariat attached to one of the ministries, whereas final approvals, policy formulation and adjustments are made by an inter-ministerial board composed of the representatives of various government agencies.

REGULATORY PRACTICES AFFECTING THE CONTRACTUAL CONDITIONS FOR TECHNOLOGY TRANSFER

As has been said, regulatory practices differ substantially between developing countries and this has been particularly expressed by the diversified approach to specific contractual provisions affecting commercial conditions for technology imports. In this section two issues will be taken into consideration, i.e. payments and restrictive practices in technology transac-

tions. The reason for selecting these two issues seems to be rather obvious. They are widely recognized as being the most controversial, not only in business negotiations but also in international debates on the patterns and principles of North-South relations. It is worth remembering that drastic changes in these areas were actually a trigger factor for the establishment of a legal and institutional framework for regulating technology transfer flows, especially in Latin America.

Payment Conditions

Historical background — The empirical surveys conducted in the late 1960s, and 1970s revealed numerous cases of licensing fees being as high as 10% or even 20% of the sales value, often without effective transmission of know-how. Such unfavorable agreements were mostly concluded between joint and subsidiary companies. Although the restrictive payments were mainly identified in the licensing fees, they were also found, at the later stage, in other contractual arrangements and payment methods.

Structure of licensing fees — Licensing fees are usually expressed in the form of lump-sum, royalty or a combination of both. As a rule, technology transfer registries attempted to discourage the lump-sum type, while favoring the royalty results concept. It was believed that the lump-sum or "discount-for" permitted payments for technology which could not yet be implemented, whereas the royalty is based on the idea of sharing the gains from manufacturing operations based on imported technology with the licensor.

With respect to the basis for calculating royalties, there was a widespread uncertainty of using the net sales volume. The major advantage of this formula is that it allows for easy auditing and is not open to deliberate distortions. The incidence of alternative methods was quite limited. Sometimes registries insisted on using as a basis the value-added figure or export sales only. A standard practice adopted in Nigeria required that royalties should be based on net sales, ex-

cluding landed cost of imported raw materials and components. This was made in order to encourage both partners to raise the level of local value added by making more use of local inputs.

While generally preferring royalty payments, technology transfer registries, as a rule, strongly discouraged fixing minimum royalty levels as this contradicted the principle of sharing the gains from effective manufacturing operations.

Defining the "adequate" level of royalty payments — The analysis of historical experience helps to identify two major stages in the relevant regulatory practices:

— the initial stage, characterized by the prevailing use of a 5% ceiling for royalty rates;

— the mature stage, characterized by the application of more sophisticated methods.

The newly established regulatory bodies were usually confronted with excessive royalties in contracts concluded in the past. In order to achieve a major breakthrough in eliminating the most abusive fees, they attempted to introduce a general limit on percentage royalty rates. The 5% ceiling has emerged as a widely accepted standard. In fact, it was not defined by a specific legal provision but emerged rather as an informal principle of internal rule, sometimes identified in the official documents published by the government agency regulating technology imports.

In addition to the 5% rule, applicable to full-value licensing agreements, some registries applied somewhat lower ceilings for agreements granting rights only, e.g. trademark licenses, franchises, etc. In such cases, although no unified clearest patterns emerged, the "adequate" level ranged from 2% to 3%.

► Effect ►

The effect of the widespread application of the 5% rule has been enormous. The empirical surveys, conducted in a number of developing countries, have shown a substantial drop in royalty levels during the last 25 years. At present,

regimes exceeding 7% are quite exceptional in the North-South context and are generally compatible to those applied among developed countries. Indeedly, the 7% ceiling has greatly facilitated negotiations and approval procedures, due to the fact that the excessive demands of suppliers were measured prior to submission of agreements for negotiation.

A word of caution must be added here. It seems quite obvious that suppliers of technology seem able to partially compensate "lost" revenues by overpricing equipment, or increasing inputs and raising technical fees, especially in the case of intra-company transactions.

In the course of time, the apparent benefits of using standard 7% rules have turned out to be its principal shortcomings. This has been especially reflected when a country attempted to stimulate the development of modern industry branches through acquisition of sophisticated technologies. The use of standard royalty ceilings obviously contradicted the implementation of such selective policies. As a result, there was a need to identify alternative ways of evaluating payments in technology transfer agreements. Although an impressive number of such methods could be found in the literature on the subject, only five of them proved their way to actual practice.

Among these, the income-sharing concept should be mentioned as the first phase. The relatively widespread use of this concept must be attributed to the influence of UNIDO, which has popularized it in its numerous publications: Royalty on sales = Licensee's share of licensee's profit + Licensee's profit on sales.

This allowed for the adoption of more thorough and flexible evaluation procedures for defining the acceptable level of payments. It clearly demonstrates that a very high royalty may not be viewed as excessive and abusive when the licensee achieves a healthy profit margin from its operations. It is therefore important, in the course of evaluation and approval, to look not only at the royalty level but also at the distribution of profits be-

tween the parties, i.e. the licensee's share of licensee's profit (LILP).

Although the profit-sharing concept has been used by a number of technology transfer treaties, no standard concept with respect to LILP has emerged so far. In fact, LILP analysis played an auxiliary role allowing, e.g. for approving contracts with high royalty rates in highly profitable operations or rejecting contracts with standard rates but yielding low profit margins.

What is even more important, however, the profit-sharing analysis represented a radical shift from contract-focused towards comprehensive project-oriented evaluation. While the royalty rate was clearly stipulated in the contract, in order to calculate LILP the royalty had to identify the estimated sales and profits of the planned investment project. The need for obtaining additional information seriously complicated the negotiation procedure and represented a major obstacle in applying the formula.

The indirect implications of the income-sharing concept on the proliferation of more flexible attitudes with respect to royalty rates should be mentioned as well. First, since the average profit margins were mainly industry-specific, this actually led to the acceptance of different royalty levels for different industries. It coincided with the re-introduction of industrialization policies initiated in a number of developing countries in the late 1970s and 1980s. They were reflected in various efforts aimed at attracting foreign equity and technology necessary for the development of modern industrial branches such as electronic and electrical industries, chemical, automotive equipment, heavy machinery, etc. As a result, in the evaluation of licensing agreements it was essential to conduct international comparisons and identify worldwide trends in the royalty levels for specific industries and technologies. In the simplest form, the new approach required that in the labor-intensive, low-technology industries royalty levels had to be set much below the 7% ceiling, at the same time allowing rates exceeding

5% in case of high-technology industries.

Further diversification of regulatory practices became necessary in the 1980s, especially in the most advanced LDCs which embarked on developing a sector assimilating firms around the so-called new technologies. In this case, it was not only the question of modern industries, but rather of specific sophisticated technologies, for which a set of favorable conditions and incentives was offered to attract them, including the acceptance of very high royalty rates.

Level of technical fees — Except for royalties, technical fees represent the most typical form of technology payments. This is due to the fact that in standard technology transfer agreements, covering both the right to use and the know-how itself, additional services are often required to effectively transfer the given technology. As a result, the overwhelming majority of such contracts might be classified as "licensing and technical assistance agreements." On the other hand, if no proprietary technology is involved, the pure technical service agreements are predominantly used.

Despite the variety of pricing methods used for calculating the value of payment for technical services, the potential fees applied on a time basis constitute its basic component. Here, two basic approaches adopted by the regulator can be distinguished. The first method was based principally on international comparisons as a result of which minimum fee levels were defined for internal use or were published in the form of guidelines by the given regulatory body. The second method relied on a detailed evaluation of the cost structure of technical fees, thus requiring the submission of detailed cost breakdowns by the suppliers of services.

The advantage of the first method lies basically in its simplicity. Experience has shown, however, that the second approach could lead to a substantial decrease of fees by eliminating excessive profits "holders" in the inflated cost elements. Obviously, this requires a compre-

bersome and lengthy evaluation process, and it has, therefore, been used rarely.

The advantage of the first method lies basically in its simplicity. Experience has shown, however, that the second approach could lead to a substantial decrease of fees by eliminating excessive profits "hidden" in the inflated cost elements. Obviously, this requires a comprehensive and lengthy evaluation process and it has, therefore, been used rather rarely.

Sometimes a thorough analysis was replaced by a simple rule-of-thumb. For example, since it was relatively easy to establish direct payroll costs of expatriate personnel, the "adequate" personnel fee including overhead and net profit was defined as that not exceeding 25% of direct costs.

Payment for technology between equity-related parties — As has been emphasized earlier, equity-linked technology transfer transactions have always been under close surveillance by the regulatory bodies in developing countries due to the overwhelming use of transfer payments to share profits from the host countries. The most rigid attitude was adopted by the Andean Pact countries in the famous Decision 24, which prohibited payments of licensing fees in countries concluded between parent and subsidiary companies, controlled in over 50%. The major argument used in this context was that the supplier is remunerated in the form of additional profits as a result of the efficient use of technology. Such a rigid approach was recently modified by Decision 25B of the Andean Pact which left the issue of equity-linked technology transactions to national regulations of individual countries.

Despite the obvious advantages of prohibiting technology payments between equity-linked parties, the recent liberalization of regional regulations adopted by the Andean Group should be viewed as a reflection of major obstacles as well as evident shortcomings, resulting from the rigid implementation of such regulatory practices. This manifested, for example, with the

functional principles of major technology suppliers from industrialized countries. Large transnational corporations viewed licensing fees as a form of regaining substantial R&D expenditures. The straightforward prohibition of such payments often conflicted with the growing interest of the host-developing countries in attracting sophisticated technologies.

The modified approach of technology transfer regulates with respect to payments between equity-linked parties rather basically on two principles. Firstly, such payments are generally allowed, basically, in this case the evaluation is much more comprehensive, as compared to the anti-trust transactions. Regulatory, as a rule, make additional efforts to ensure that relevant payments reflect the real contribution of the supplier and that they match the worldwide trends.

RESTRICTIVE PRACTICES

Evaluation of regulatory approaches: An overview — In general terms, restrictive clauses may be defined as legal provisions which directly or indirectly limit the use of acquired technology in a broad sense, i.e. in production, marketing, R&D, etc., thus eroding effective control of productivity and marketing by the supplier. The relatively high share of such provisions in licensing agreements, as compared to other business transactions, results from the fact that unlike goods — which are sold — technology is "rented" and the licensee retains the respective property rights of the know-how. As a result, there is a clear conflict of interests between the supplier and the recipient as the latter attempts to have unrestricted use of the acquired technology.

The experience of many developing countries has demonstrated that the inclusion of restrictive provisions in licensing contracts became a standard and widespread practice of technology suppliers. Moreover, it was also revealed that such clauses not only reflect the weak bargaining power of local recipients but also their indifference as to the

incidence of the relevant clauses. Local buyers usually concentrated their attention on the immediate effects of accelerating imported technology while neglecting mid-term or long-term implications of clauses which, for multiple, tied imports from specific sources or banned exports. Under such circumstances, it was considered necessary in a number of developing countries, especially in Latin America, to impose rigid regulatory rules. This was done by providing in the respective laws and regulations a detailed list of restrictive clauses which were outrightly prohibited.

Without going into details it may be said that in many host countries impressive efforts have been achieved with respect to the elimination of restrictive business provisions. At the same time, however, the experience so far accumulated calls for more flexible attitudes of technology transfer regulators in this connection. The main arguments in favor of such flexibility are the following:

— Under certain circumstances the clauses deemed "restrictive" could be beneficial for the local recipient and the host country in general.

— The prohibition of specific clauses often conflicts with the well-founded interest of the supplier without bringing essential benefits to the recipient.

— The formal restrictive clauses could easily be substituted by alternative arrangements by the supplier which bring similar results. As a result, the effects of the regulatory intervention were partially counteracting.

The flexible framework in dealing with restrictive clauses has been facilitated by diversified regulatory arrangements including the following:

— In addition to the detailed list of unacceptable provisions, there was a general clause granting the regulatory discretion to approve agreements with restrictive clauses when it would be in the national interest to do so.

— Supplementing existing laws with detailed internal guidelines specifying situations and conditions under which certain restrictive

classes could be accepted.

— **Listing the most important classes within a broader policy framework under which any provisions which unfairly restrict the local licensee should be abandoned.**

Regulatory practices relating to selected restrictive provisions —

The problems and dilemmas faced by the regulatory bodies from the host developing countries as well as alternative solutions will be briefly set out below concerning with major restrictive classes found in licensing contracts.

tying classes — Classes imposing obligatory acquisition of raw materials, intermediate products, machinery, etc. are generally prohibited as they perpetuate import dependency and enable the charging of excessive prices. However, in some industries (e.g. pharmaceuticals, the regular and continuous access to intermediate goods is one of the objectives of the licensor, *inter alia*, in order to maintain high standards of quality. Thus, rather than eliminating such provisions, registries of less intent on an explicit statement in the contract that raw materials and intermediate products have to be supplied at international prices or at the lowest price already applied to other licensees.

Export restrictions — As a rule, restrictions on exports imposed by technology suppliers are rarely contested by recipients in developing countries due to a predominant orientation toward satisfying local markets. Regimes attempting to eliminate such clauses usually make exceptions for those markets where exclusive licenses to use a given technology were granted in the past. A more flexible approach is based on a realistic analysis of export opportunities in specific markets and granting export rights for those markets. This is reflected, for example, in the regional policies of Andean Pact countries which prohibit export restrictions within their region. An alternative solution relies on tying exports to a future consultation with technology suppliers.

Restrictions as to the use of technology by the recipient — In general

provisions limiting the rights to use a technology by the recipient (e.g. those limiting the volume of production, pricing, R&D) have detrimental effect on the process of assimilation and are most often discouraged. In the case of some provisions, however, the overall picture becomes somewhat complicated. Let us consider those contractual clauses which impose detailed conditions on the production process. It is true that alterations to the original process and product design are indispensable for their adaptation to local conditions. Quite often, however, they result in a lower quality of product manufactured under license. Under such circumstances, adherence to the rigid quality standards could play a positive role, especially with a view to expanding exports of manufactured goods. Such dilemmas have usually been resolved within the scope of discretion granted to the regulatory agency.

Post-royalty restrictions — The narrow interpretation of a license contract (limited to the property rights component) constitutes a legal basis for restricting the use of technology and/or keeping it secret after expiration of the agreement. Although such clauses are not generally accepted by the registries, exceptions are allowed if the agreement terminates as a result of the licensor's default or if the restrictions are connected with industrial property rights valid after expiration of the agreement. Strict requirements not going beyond five years after termination of the agreement are deemed justified as well.

Grant-back provisions — The respective clauses in licensing agreements impose on the licensee the free transmission to the licensor any improvements, inventions, experience, etc. relating to the acquired technology. The registries, as a rule, strongly discourage such provisions. Somewhat more flexible attitudes were justified by the fact that the potential negative effects of such clauses in the case of host developing countries were negligible due to the very limited scope of the local R&D. The overall picture has changed in recent years in line with a growing technological ac-

quisition of manufacturing industries. Nowadays, registries either avoid or delete the said clauses or eventually accept it so as to ensure reciprocal transmission of improvements.

Noncompetition clauses (in-out) — In the case of in-out provisions, the freedom of the technology recipient is restricted with regard to the manufacture and/or sale of competing products and the acquisition of competing technologies. Usually, national legislation prohibits such clauses, except under specific circumstances, for example, when the restriction is made in order to protect the confidentiality of know-how or where an exclusive license has been granted. However, as experience has shown, while accepting such clauses registries insist on a precise formulation, because the term "competing product or technology" can easily be extended to products loosely related to the original technology.

Duration of an agreement — Contract duration is linked, on the one hand, with the question of adequate compensation and, on the other, with the duration of royalty payments. Initially, the major concern of the registries was to limit unduly extended payments which were viewed as an acquired disadvantage of scarce foreign reserves. In the first place, an attempt was made to define a "reasonable" contract duration, while fixing as a basis the period of time required for the effective assimilation of technology. A five-year term has been used most often and with respect to its workability problematics it might be compared with the 5% standard for royalty payments. On the other hand, registries attempted to eliminate "hidden" restrictions being implemented under the automatic extension formula. As a rule, automatic clauses were not permitted except for royalty-free agreements. Moreover, since licensors often attempted to extend the duration of contracts by including slight amendments and modifications to existing agreements, the rules adopted for extensions were usually much stricter than those governing registration procedures for new ones.