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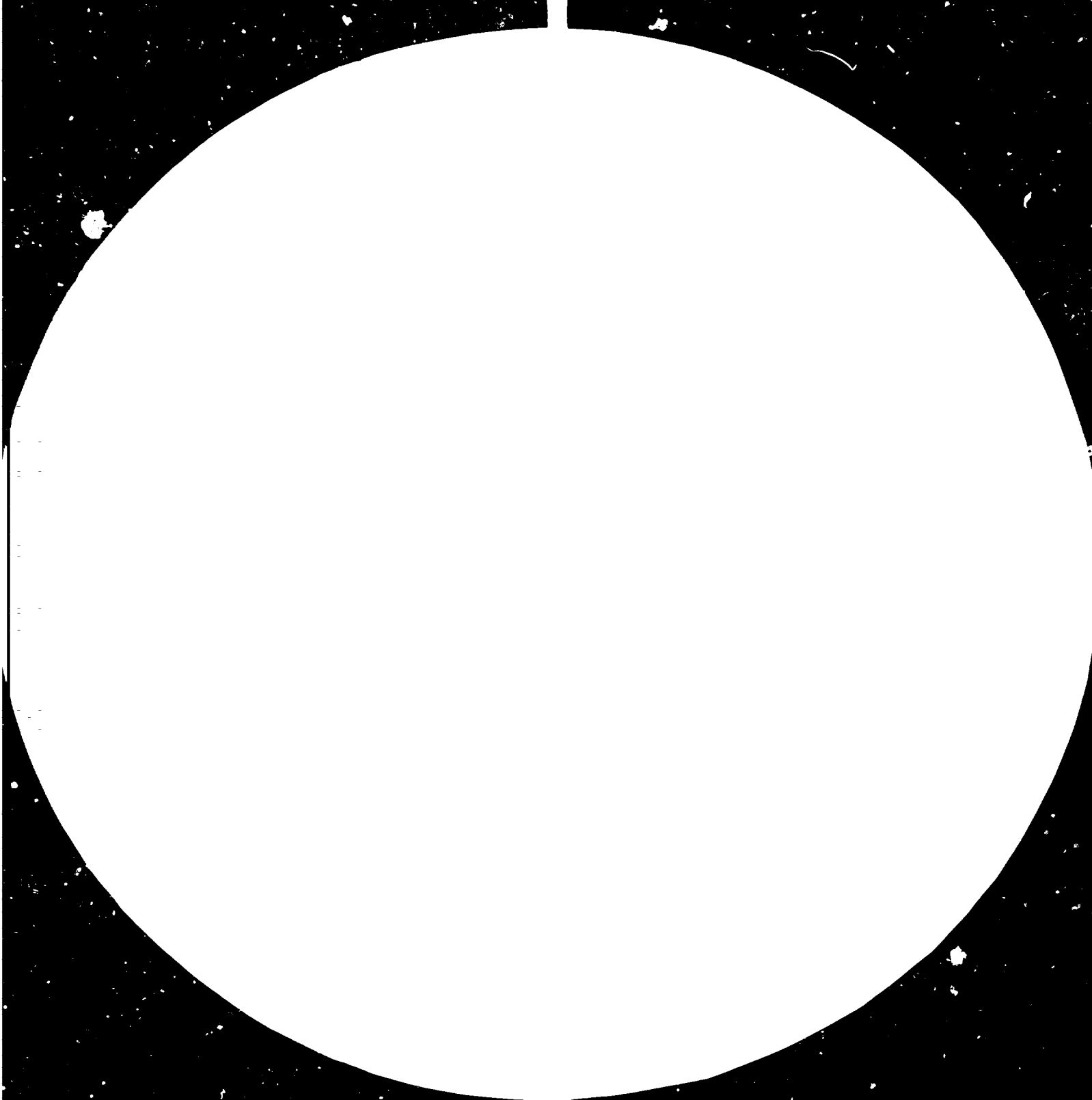

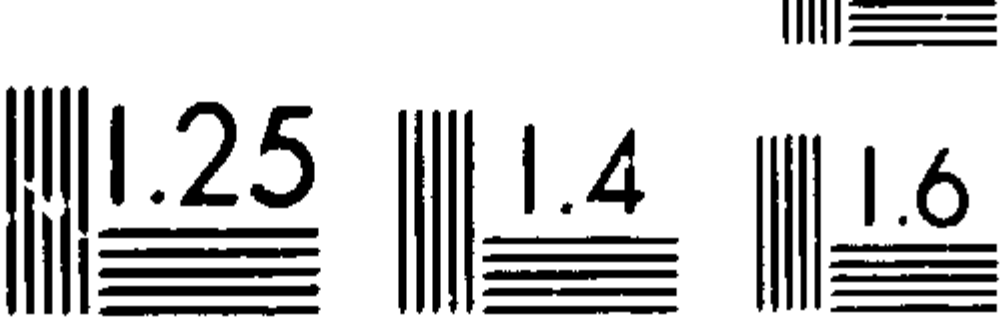
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TIES NEWSLETTER

TECHNOLOGICAL INFORMATION EXCHANGE SYSTEM

Issue Number 16 July 1982

12044

Dear Reader,

The Group of 77 held a meeting of Heads of Science and Technology Agencies of Developing Countries at New Delhi, India, from 3 to 6 May 1981. This meeting addressed itself to the question of ensuring and enhancing implementation of the relevant measures recommended by a High Level Conference on Economic Co-operation among Developing Countries held at Caracas in 1981.

The meeting resolved that it is imperative to ensure an annual expenditure on scientific research and development of at least one per cent of the GNP by 1990 by each developing country. It felt the need to identify national focal points to provide for a specific framework for concrete co-operative arrangements amongst developing countries backed by requisite financial allocations by member states, specifically for ECDC activities. To ensure concrete follow-up action of the deliberations of the meeting, it was felt necessary to identify specific science and technology areas and to set up action committees to suggest programmes of co-operation. Areas such as health care and nutrition, energy development, including new sources of energy, food and agriculture, industrial technology, modern technology, resource engineering, communication systems, marine resources, metereology and human resources development were mentioned.

There was general support to the role of the Non-aligned Centre for Science and Technology, which will be established in India, in implementing co-operative activities.

Negotiating capacities

In regard to enhancing the negotiating capacities of developing countries, the meeting recommended the convening of an expert group in technology acquisition and transfer to exchange experience in regard to acquisition, absorption and adaptation of technology. The meeting will be held in Lima in early 1983. It was suggested that the Lima meeting should identify measures to facilitate information exchange, disaggregation of technological packages and implementation of legislation among others. That meeting was also requested to pay special attention to the evaluation of technologies.

In this regard, the meeting recognized the importance of the TIES System and that UNIDO should bring before the next meeting of TIES specific proposals for enlarging its membership and enhancing its activities, taking into account other ongoing activities of UNIDO, such as training and advisory services for the acquisition of technology.

G.S. Gouri
Director
Division for Industrial Studies

UNIDO activities

Overview of Selected Problems of Technology Transfer to Developing Countries

The following article is based on a paper presented by the UNIDO Secretariat at the recently held UNIDO/Licensing Executive Society (LES) in Vienna. The paper intended to provide an historical perspective of technology transfer into developing countries during the last 15 years and highlight the more controversial issues still unresolved today. It is based on the experience accumulated through the operation of TIES and UNIDO's Technological Advisory Services.

Introduction

The flows of technology to developing countries are in principle effected by direct foreign investments, the supply of equipment, machinery and turn-key plants (embodied technology), setting up of joint ventures and the licensing of patented or non-patented know-how.

This article will deal predominantly with joint ventures and the supply of patented and non-patented know-how.

While probably the main flow of technology is taking place through the supply of equipment and machinery and direct foreign investment, the supply of know-how or licensing, both in terms of absolute volume as well as its importance as an effective vehicle for direct transfer of technology, has considerably increased.

The table 1 at the end of this Newsletter provides basic data on the growth of flows of technology (in the form of royalty payments) in selected developing countries during the period 1965-1981.

Compiled by the Technology Group of UNIDO P.O. Box 300, A-1400 Vienna, Austria

As can be clearly seen from table 1, the group of selected developing countries imported technology with approximately $US 200 million in 1965, while their imports increased to the amount of approximately $US 1 billion in 1975 and reached the sum of approximately $US 2 billion in 1980.

Even taking into account two devaluations of the dollar which took place during this period of time, and an average world inflation rate, the increase in flows of technology is extremely impressive and supports the theory that the developing countries are becoming more and more of an important market for the technology developed in the industrialized world.

While in 1965 their share in the world turnover of technology amounted to barely 8 per cent, in 1980 it had reached the impressive level of 14 per cent and is expected to accelerate even faster in years to come. This rapid growth can be attributed on the one side to the overall economic growth, and on the other to industrialization efforts undertaken by the Governments of those countries.

Another important feature of technology flows to developing countries is the fact that those flows are decisively coming from transnational corporations (TNCs).

It is estimated that while the TNCs share in the world technology turnover oscillates between 60-70 per cent, it represents around 90 per cent of the flows to developing countries.

In this context one should mention that a great deal of this flow goes into subsidiaries of TNCs, both fully owned as well as majority and minority owned.

While originally in the process of technology transfer we used to deal with licencee and licensor, since the early 1970s the Government has become a new and important factor.

This holds true for all major developing countries, although the increasing role of Governments in technology development and transfer as well as in industrialized countries can be witnessed.

The presence of Governments in the technology transfer process constitutes an important feature of technology transfer in the late seventies and appears to be even more visible throughout the eighties.

The role of Governments in Technology Transfer

As mentioned earlier, the Government has become an important factor in technology flows to developing countries.

One should not however overlook the fact that the role of Governments, as an important economic stimulator, has been introduced both in Europe and the USA during the years of the Great Crisis of the 1930s, and since then its role has increased.

There is also no doubt that Governments played a significant role in the rapid technological development of the USA and Western Europe during the years following the Second World War (not mentioning those of the centrally planned economies of the Soviet Union and other COMECON countries).

Postwar Japan went through a very strict control over the imports of technology, which only recently has been gradually relaxed.

Again, it was the USA that by the end of the 19th century introduced the first anti-trust legislation which is being rigorously applied to regulate the conditions under which the transfer of technology takes place in the USA and also in Japan and the countries of the European Economic Community.

As the developing countries began to realize that their need for a better standard of living and accelerated social and economic progess required a mobilization of resources by their Governments, they began to gradually introduce such policy instruments which ultimately led to a growing State intervention in the economy. Such a growing role of the Governments led, logically, to the regulation of both foreign capital inflows and foreign technology inflows.

Initially these various regulatory measures primarily aimed at the protection of the national industry, but with the passage of time and with the experience gained, they gradually evolved into a more complex technological policy, aimed at the development of a national technological base.

Overview of major problem areas of transfer of technology to developing countries

It seems evident from both the literature and direct contacts with licensors and licencees, that the following will appear to be the major problem areas in technology flows to developing countries:

1. Regulatory measures introduced, by developing countries;
2. Issues related to the pricing of technology;
3. Lack of information from would-be licensors and would-be licencees.

Certainly the regulatory measures introduced by Governments of all major importers of technology among the developing countries touched upon sensitive points on the part of suppliers of technoogy.

The problem areas could be divided into two major categories:

(a) interpretation of restrictive practices, and,

(b) the active role (in some cases) of Governments in contract negotiations.

As regards the interpretation of restrictive business practices, it is sometimes felt that it follows rather closely the interpretation applied by courts in all countries with anti-trust legislation, although on different grounds.

As an illustration for similarities in the interpretation of the most obvious restrictive business practices, please find data in table 2 at the end of this Newsletter.

Another area which naturally causes lots of problems is the overall and perhaps eternal question of pricing of technology where usually the licencee is charging that the licensor is overpricing, either directly or indirectly.

UNIDO is far from being in the position of solving this problem, nor regulating the measures of Governments who are in a position to put down the price by an artificial setting of royalty rates.

UNIDO has proposed certain methods of royalty and payment appraisal based on expected profits the licencee is likely to make on a basis of the acquired technology, and we believe that these methods offer a fair deal to both parties.

UNIDO's Technological Information Exchange System (TIES) is also designed to assist in obtaining fair bargains. At the outset, it seems that although this area will remain full of "problems" in terms of individual transactions, on the whole the situation has been gradually improving over the last 10 to 15 years.

The third major problem area still far from being resolved is the lack of information on, for example, the licencee's national economic conditions, licenced technologies available, etc. which hamper the flow of technologies towards the developing countries and which could give rise to mutual prejudices. Various information systems have been established by national governments and international organizations to counter this lack of information, but nonetheless all efforts should be made to actually bridge this information gap and thereby stimulate the flow of appropriate technolgies into and from developing countries.

Investment Promotion Meeting held in China

The investment promotion meeting held in Guangzhou from 7 to 11 June proved that China is seriously taking steps towards attracting foreign investment. At the end of the meeting, which had been attended by 400 potential investors from predominantly the developed countries, 59 Letters of Intent had been signed estimated at the value of $US 500 million, with more still under negotiations. Most of these Letters of Intent were for medium-sized industries on joint venture agreement bases, with the emphasis being laid on direct investment regarding loans, transfer of technology, training and management.

A major policy statement on foreign investment was made by Mr. Wei Yuming, Vice-Minister of Foreign Economic Relations and Trade, in which he explained China's intentions concerning the use of foreign capital which would mainly be in the form of joint venture arrangements, co-operation enterprises, joint exploration and exploitation of natural resources and compensation trade. Mr. Wei stated that the absorption of direct investment should meet the needs of China's economic readjustment and that with the observance of the principles of equality and mutual benefit there should be no obstacles to the development of economic and technical co-operation.

Madame Chen Muhua, State Councellor and Minister for Foreign Economic Relations and Trade, during her opening address declared that in future more focus would be placed on the energy, transportation and communications sectors and therefore the projects proposed for the meeting had been selected according to this aim.

As has been demonstrated from previous UNIDO investment promotion meetings, this one in China once again proved that direct and personal contacts between investors and sponsors is a very valuable tool for promoting trade and co-operation especially since the legitimate rights and interests of both parties can be guaranteed.

The next investment promotion meeting will be held in Lima, Peru, during November 1982.

Meeting on the implications of advances in micro-electronics held in Mexico City.

An Expert Group Meeting, jointly organized by UNIDO and CEPAL, on the implications of advances in microelectronics for the CEPAL region was held in Mexico City from 7 to 11 June 1982. Representatives of Argentina, Brazil, Cuba, Guyana, Mexico and Peru as well as those of ICAITI and JUNAC participated.

The main objectives of the meeting were to examine the economic and social implications of the introduction of microelectronics in the region and the experience gained so far; to consider ways and means of the development of technological capabilities in regard to manufacture, research and development and applications; to identify the elements of policy action necessary in this field; and to recommend programmes of action at regional and international levels, in particular action by UNIDO and CEPAL.

Reviewing past experience in this field in Latin America, the meeting was of the view that an integrated policy approach to the industrial and technological development in the electronics field was a matter of high priority for countries in this region. Such an integrated approach should include, inter alia, mechanisms for monitoring and analyzing external and internal trends in production, trade and technology, long-term strategies and plans for the development of the industry, co-ordinating telecommunications and microelectronics goods and the acquisition of technology by the public sector.

The meeting was decisively in favour of taking a positive and dynamic approach to the introduction of the technology in the region within a long-term perspective and based on an integrated strategy which would maximize the potential of microelectronics for unique developing country requirements. The opportun-

ity costs of not introducing the technology were obviously too high.

The meeting made a number of recommendations for action by UNIDO and CEPAL for the region, emphasizing assistance by UNIDO in monitoring and sensitization in the promotion of endogenous capacities as well as the mobilization of international co-operation.

The most important recommendation of the meeting was on the development of a Latin American Programme of Co-operation in Microelectronics.

The meeting resolved that a Latin American Programme of Co-operation in Microelectronics should be inititated. It recommended that for this purpose UNIDO and CEPAL in co-operation with other concerned organizations should elaborate the Programme on the basis of discussions with interested governments and institutions and ascertain their needs and priorities in different sectors. The Programme should have regard to co-operation in areas such as early identification and assessment of technological advances in microelectronics; exchange of information and co-operation in regard to public purchases; the establishment or expansion of plants for the design and production of microelectronic components and all interface elements; identification of application possibilities in critical and priority sectors relating to domestic and external markets; specialized 'centres of excellence' to promote and carry out research and development and applications including centres in industry or working in close co-operation with industry and networking of such centres; conduct of feasibility studies; training of manpower and reversal of brain drain; socio-economic assessments of the impact of the technology, etc. The programme will evaluate and identify formulas for the promotion of R+D with specific relation to mechanisms of public policy. Under the overall programme, several regional co-operative projects in specific subject areas should be elaborated.

In addition, interregional possibilities should also be examined and evaluated with a view to establishing co-operation agreements. The Programme should fully take into account existing institutional capabilities and ongoing efforts in the region so as to avoid duplication and enhance its effectiveness. Concrete proposals in regard to the Programme should be submitted to an intergovernmental meeting of interested countries in 1983.

The meeting called on national and international agencies, including the Interamerican Development Bank, the UNDP and the United Nations Financing System for Science and Technology for Development to consider the funding of the Programme and individual projects thereof. UNIDO and CEPAL should, for this purpose, approach these and other relevant funding agencies.

Annual TIES Meeting in New Delhi, India

It is anticipated that the 1982 TIES meeting of Heads of Technology Transfer Registries will be hosted by the Government of India and will take place from 7-10 December in New Delhi. The meeting will address itself, apart from the normal TIES review, to the issues involved with the methods used for technology payment evaluation, the national information systems and UNIDO's technology transfer, advisory and training services. This important event is expected to be attended by some 30-40 representatives from different developing countries.

Registry news

Spain

In Ties Newsletter No.12 of November 1981 the text of the new Law on technology transfer regulations of Spain was reproduced. The Director of the office in charge of the execution of this Law, Mr. Cesar Primo, has written the following article which examines the grounds on which this law had been introduced and discusses the major changes introduced.

Results obtained by the application of the standards regulating the transfer of technology in Spain

The objectives set by the Spanish Government in introducing the standards to regulate the acquisition of foreign technology have to a large degree been met, since:

(a) The establishment of the Contracts Registry has made it possible to know the nature of the technology flow, the countries of origin and the sectors for which the imported technology is intended, and this knowledge has contributed significantly towards the identification of priority sectors and the adoption of measures to promote technological innovation, the fruits of which, according to assessments, seem highly beneficial.

(b) The work of the Registry in giving guidance on the wording of contracts has also been useful, as can be seen from the fact that these contracts have been improving in format and that they tend to ensure a balance between the rights and obligations of the parties concerned and giving greater clarity in their definition.

(c) The procedure of evaluation of the contracts, at the time they are processed for registration, (a procedure which includes calling attention to any terms or conditions in the contract that appear to be unjust or abusive on the part of the transferer of technology), also appears to have proved advantageous in leading to more equitable contractual conditions, as indicated by the fact that the proportion of contracts accepted (i.e., not rejected be reason of serious defects), has been in the order of 98 per cent of those submitted for registration.

(d) Specifically, the most serious defects found in the contracts submitted refer to clauses limiting the rights of the recipient,

the most common ones being related to limitation of the rights to export, the imposition of exorbitant payment demands and the failure to observe reciprocity in rights and duties.

(e) Notwithstanding these improvements, non-equitable conditions continue to be frequently encountered with respect to the transfer of rights to innovations and improvements, which together with possible limitations on the right to use alternative technologies (including the recipient's own technologies) may redound to the serious detriment of the technological development of the firms acquiring the foreign technology and thus of the country itself. There is also continuing evidence of the inclusion of unjustified conditions regarding the export of goods or services produced by the Spanish recipient.

4. Evolution of the policy of the Spanish Government with respect to the transfer of technology

On the basis of the eight years of experience in operating the Technology Transfer Contract Registry, it has been possible to adopt a series of standards and measures representing a movement towards greater liberalization in form, the fact being that current regulations have always been applied in a very liberal manner with a view to promoting an international flow of technology under conditions which are not incompatible with the advantages that this transfer essentially brings to all countries.

Among the changes introduced, particular mention should be made of the shift in the focus of attention from the contract itself, as was initially the case, to the firm acquiring the technology.

The aim is to undertake simultaneously a major effort to assimilate the technology acquired from abroad and a reasonable effort to develop the country's own technology. To this end, in certain cases (when a Spanish firm's over-all technological dependence on foreign suppliers exceeds a certain proportion of its activity), the recipient firm is requested to submit a programme for the future representing a tangible contribution towards the elevation of the country's technological capability.

On this point, it should be noted that the Government recognizes as a contribution to the improvement of the country's technological capability not only efforts at innovation in the recipient enterprise's own area of activity, but also efforts aimed at upgrading its "industrial environment", consisting of suppliers and consumers.

In most cases, the suppliers are small and medium-sized firms which provide materials or components and even auxiliary equipment.

It seems proper that the large companies, some of them multinationals with a great deal of economic and technological strength, should help the enterprises around them, even to the point of assisting them in their operations. In actual practice, this works to the advantage of the larger companies themselves.

These changes or modifications have been received with satisfaction by the firms concerned in that they reduce the grounds for objections to technology transfer contracts (undesirable clauses), for example, by eliminating the objection to the notion that technology payments should be proportional to the level of activity in the technological relations between financially interrelated companies (parent-subsidiary relationships or relationships between subsidiaries). Similarly, there has been understanding of the need to provide development programmes.

It is still too early to assess the tangible effects of the changes introduced in the regulation of the transfer of technology in Spain, but there are signs which indicate that they will be positive. Some of these positive results that have been observed stem from the fact that the submission of programmes by the enterprises is making it possible to co-ordinate and complement the larger companies' activities of technical support for their suppliers with the Government's efforts to promote industrial innovation, such as the work of the Centre for the Development of Industrial Technology (CDTI), a State agency charged with providing technical and financial support in the area of industrial innovation.

Recent legislation

Bangladesh

The Government of Bangladesh recently announced a liberal industrial and investment policy. The objectives of this new industrial policy could be summerized as follows:

Under the new policy all nationalised jute and textile mills formerly owned by Bangladeshis will be returned to them.

Announcing the policy, the Adviser in charge of the Ministry of Commerce and Industries, S.M. Azam, told a press conference that the modus operandi for the return of the industries would be worked out and the process "may start even tomorrow".

The new policy, which gives much greater confidence on the private sector, aims at promoting, protecting and expanding the industrial horizon.

Amendments to Presidential Order 27 of 1972 (Nationalisation Order), would if necessary be made to give legal coverage to the process of returning the nationalised industries to their former Bangladeshi owners.

In an apparent admission to the failure of the nationalised sector, the Adviser said the size of the sector corporations would be reduced by disinvesting abandoned mills, offering shares to the public and entrusting management of big and ailing units to outside agencies.

Acknowledging the efficiency and dynamism of the private sector Mr. Azam said, "we have reposed much greater confidence on the private sector and hope it will now respond and rise to the demands of the situation".

The 15-point objective of the new policy as enumerated by the Adviser includes: expanding the manufacturing sector with increased participation of the private sector; limiting the role of the public sector to the establishment of basic, heavy and strategic industries; protecting and promoting local industries; promoting export-oriented industries; promoting geographical dispersal of industries on economic grounds; encouraging linkage between large, medium and small industries; creating additional productive employment opportunities in rural areas through the promotion of rural and cottage industries.

The reserved list for the public sector has been reduced to six with (1) arms and ammunition and allied defence equipment, (2) atomic energy, (3) air transport, (4) telecommunication, (5) generation and distribution of electricity, and (6) forest extraction (mechanised).

The concurrent list was enlarged to 13 sectors including jute and textiles.

The concurrent list where both public and private investment can take place includes the jute industry (sacking, hessien and carpet backing), cotton textiles (excluding handlooms, power looms and specialised textiles), sugar, paper and newsprint, iron and steel (excluding re-rolling mills), ship-building and heavy engineering (including machine tools and the assembly and manufacture of cars, buses, trucks tractors and power tillers), heavy electrical industry, minerals, oil and gas, cement, petro-chemicals (fertilizers, PVC, ethyline, methalon, carbon-black, synthetic fibre etc.), shipping, heavy and basic chemicals and pharmaceuticals and appliances and equiment for telecommunication services.

Both sector corporations and the private entrepreneurs will be permitted to set up industries included in the concurrent list or a private entrepreneur will be allowed to collaborate with the public sector.

The new policy also stipulates that in deserving cases, the management could be given to a private party with minority shareholding while the majority of shares is held by the sector corporation.

The list of free sectors where no formal permission of the Government will be required is expanded by 19 more sub-sectors. These industries may be set up provided entrepreneurs import machinery under the Wage Earners Scheme, which supplies credit on acceptable terms or under non-repatriable investment.

The Adviser said a major thrust of the new policy was to create additional jobs in the rural areas through development of cottage industries. Handloom, sericulture, hosiery, rural agro-based industries will receive special attention. Wherever possible, products will be identified and reserved exclusively for production by small and cottage industries.

Incentives

The Adviser announced some additional incentives to manufacturers and exporters. These include a 25 per cent excise duty rebate for essential and selective industries producing more than sanctioned capacity, and income tax rebate to exporters of non-traditional items for higher export performance. Efforts will be made to restructure the power rates for industries.

For the first time some selective industries will be given insurance coverage against production loss due to power failure.

For effective regional development the abolition of import licence fees for capital machinery and spare parts meant for industries in less developed areas was announced. The debt-equity ratio for pojects will vary from 75-25 to 80-20 per cent. A special fund will be created to subsidise the cost of fuels used by recognised industrial units in less developed areas by diverting profits from the gas sector.

Decentralisation

The policy gives in detail the measures for quick sanctioning of industrial projects and also availability of funds. The sanctioning powers are decentralised to the district level.

Under decentralisation measures, major commercial banks will authorise their regional managers and district level branches to sanction working capital up to Tk. 5 million and Tk. 2.5 million respectively. Major commercial banks also designate one branch each at the district headquarters to facilitate imports under the Wage Earners' Scheme. Licensing procedure for importing raw materials and machinery will be simplified.

The Bangladesh Bank will work out a suitable mechanism for reducing the burden of exchange rate fluctuations, which has greatly affected borrowers. This will be done in the course of next three months.

A committee with representatives of the agencies concerned will provide "one step" services to the investors regarding processing of projects, acquisition of land, arrangement of power and gas supplies, issuing of ad hoc licences for raw material imports, formation of companies, etc. The committee will meet every fortnight.

Another committee, named "Facilities Coordination" will look into entrepreneurs' problems on working capital and loan disbursement at the regional level.

Foreign investment

Concerning foreign investment, the Adviser said it would continue to recieve due consideration. The Government would welcome foreign participation in joint ventures at mutually beneficial terms and conditions. Such investments will be encouraged especially in (1) new enterprises, particularly those requiring specific technology available to the foreign investors - which will make an additional net

contribution to the economy; (2) undertakings in which more intensive use of natural resources are made; (3) in export-oriented industries; (4) in capital intensive technologies, the products of which will be either import substitution or export-oriented; and (5) in existing public or private sector enterprises where an injection of foreign capital or technology will mean an increase in productivity and an improvement of the products.

The Adviser said shares up to 49 per cent of some of the public sector enterprises will be unloaded for public subscription or operation by the Investment Corporation of Bangladesh in order to stimulate the share market and raise additional funds.

Some of the big industrial enterprises like Machine Tools Facotry, and General Electric Manufacturing Plant are not at present being managed properly as the corporations do not have the required expertise and capability to run them efficiently. Management contractors will be hired to run and manage some of these units on condition that they will be fully responsible for management, production, marketing of products both at home and abroad and their running profitably.

He added that with World Bank assistance steps have been taken to appoint a suitable management firm for Machine Tools Factory. Similar steps will be taken in respect of General Electric Manufacturing, Chittagong Dry Dock, Progoti Industries, North Bengal Paper Mills, etc.

Following is extracted from the text of the new industrial and investment policy announced by the Government:

Objectives of the New Industrial Policy (NIP)

The objectives of the New Industrial Policy are to:

(i) Expand the manufacturing sector with increased participation of the private sector;

(ii) Limit the role of the public sector to the establishment of basic, heavy and strategic industries;

(iii) Encourage optimum utilization of existing capacity including measures for balancing, modernisation and replacement (BMR);

(iv) Encourage investments to move away progressively from 'assembly' to intermediate/ basic manufactures;

(v) Protect and promote local indsutries by reasonable tariff measures and/or banning imports where there is adequate domestic capacity;

(vi) Limit the growth of investment/ industries having a monopolistic character;

(vii) Improve the efficiency and profitability of the public sector enterprises by cutting down overheads, reducing wastage and loss, increasing productivity of labour and capital and toning up management;

(viii) Promote export-oriented industries;

(ix) Encourage efficient and economic import subustitution;

(x) Make extensive and effective use of local resources, skill and know-how and maximize indigneous manufacturing content as quickly as possible;

(xi) Promote geographical dispersal of industries on economic grounds;

(xii) Encourage linkage between large/ medium and small industries;

(xiii) Ensure that quality and price of locally manufactured goods is maintained at a reasonable level;

(xiv) Create additional productive employment opportunities in the rural areas through promotion of rural and cottage industries;

(xv) Develop indigenous technology bases and encourage judicious application of appropriate technology.

Foreign Investment

Foreign Investment will continue to receive due consideration and the Government would welcome foreign participation in joint ventures on mutually beneficial terms and conditions. Foreign investments will be encouraged especially in:

(i) New enterprises, particularly those requiring specific technology available to foreign investors which will make an additional new contribution to the economy, including the training of Bangladeshis;

(ii) Undertakings in which more intensive use of nature resources is made;

(iii) In export-oriented industries;

(iv) In capital intensive technologies, the products of which will be either import substitution or export oriented;

(v) In existing public or private sector enterprises where an injection of foreign capital or technology will mean an increase in productivity and an improvement in the product.

SAIT (Andean Technological Information System) Meeting in La Paz, Bolivia

In March this year a meeting of senior officials of Governments of the Andean pact successfully initiated projects 1 and 3 of the Andean Technological Information System. The Co-ordinating Committee on Technology Transfer Information agreed to the formal exchange of information on technology transfer contracts.

This agreement includes exchanging information on:

- Recipient company of the technology transferred;
- Supplier company of the technology transferred;
- Validity of contract;
- Objective of contract;
- Forms of payment; and
- Restrictive clauses.

The modus-operandi of the exchange of information appears to be similar to that of TIES, with the exception that the exchange is not yet computerized and will therefore be less flexible.

It is expected that the information exchanged through SAIT will eventually be exchanged through TIES at the global level since both information exchange systems have indicated the desire to be associated.

Technology Transfer Negotiations discussed in Costa Rica

The International Centre for Public Enterprises (ICPE) and the Central American Institute of Public Administration recently sponsored an expert group meeting on "Strategies and instruments for the improvement of the transfer of technology negotiation capacity of public enterprises in developing countries".

The objective of this meeting was to examine the strategies and methodology used by public enterprises in the Central American region for the acquisition of foreign technology and the formulation of possible mechanisms and ways to be used by public enterprises and Governments of the region in order to improve their negotiating capacity, vis-à-vis the utilization of technology transfer contracts.

Of particular interest for our readers may be the assessment which was made of the different policies adopted in the various Latin American countries in relation to technology transfer for public enterprises. It was argued that in ten countries where technology transfer plans do exist for the public sector, none of these are effectively put into practice. On the other hand, while four countries have introduced legislation on this issue, only two (Mexico and Peru) appear to have introduced this effectively. In a later issue of the TIES newsletter we hope to publish a more detailed article on this subject. For those interested to receive the final report of this meeting please contact ICAP, Apartado Postal 10.025, San José de Costa Rica.

Calendar of meetings

Meetings

First Congress of African Scientists, Ivory Coast, 1-7 September 1982

Expert Group Meeting on the Development of Guidelines on Guarantee Provisions in Technology Transfer Agreements for Developing Countries, Ljubliana, Yugoslavia, date tentatively fixed for October/November

Recent publications

TIES Information Paper (UNIDO/IS.185/Rev.1)

Sectoral Study on Technology Imports in the Pharmaceutical Sector of the Andean Subregion (UNIDO/IS.320)

Prospects of Microelectronics Application in Process and Product Development in Developing Countries (ID/WG.372/1)

Microelectronics and Government Policies: The Case of a Developed Country (ID/WG.372/2)

Microprocessors and Productivity: Cashing in our Chips (ID/WG.372/3)

Microelectronica y Telecomunicaciones en America Latina (ID/WG.372/4)

Microelectronics: Its Impacts and Policy Implications (ID/WG.372/5)

Potential Applications Suitable for Microprocessor Implications: Some Illustrative Possibilities (ID/WG.372/6)

Implications of Microelectronics for developing countries: A Preliminary Overview of Issues prepared by the UNIDO Secretariat (UNIDO/IS.241 and UNIDO/IS.246/Corr.1)

Exchange of Views with Experts on the Implications of Technological Advances in Microelectronics for Developing Countries (UNIDO/IS.242/Rev.1 and UNIDO/IS.242/Rev.1/Corr.1)

UNIDO Microelectronics Monitor, Issue Number 1

UNIDO Microelectronics Monitor, Issue Number 2

UNIDO's Industrial and Technological Information Bank, National Industrial Information and Advisory Services (INTIB and UNIDO/IS.325)

UNIDO's Genetic Engineering and Bio-Technology Monitor Number 2

The following tables refer to articles contained in this Newsletter:

(Tables refer to article under heading "Overview of Selected Problems of Technology Transfer to Developing Countries")

Table 1: Basic Data on Technology Flows in Developing Countries

(all payments in million $US)

Country	1965	1970	1975	1977	1978	1980	1981
Argentina		115.8	78.0	37.9	157.9	581.8	579.9
Brazil	43	104.0					
Mexico	65.6	125.7					
Venezuela[1/]	14.8		81.0[2/]				110.0
India		49.6[3/]					
Rep. of South Korea		2.4	18.5	67.2	94.6		
Philippines							
Portugal		12.0[4/]	20.1[5/]	25.3	23.0	21.0	32.3
Spain	79.9	155.0	258.2	428.8	454.3		

1/ - 1966
2/ - 1976
3/ - 1969
4/ - 1972
5/ - 1974

Source: Data received from technology registries of countries surveyed

Table 2: Similarities of Interpretation of the Most Obvious Restrictive Business Practices

Type of restricive provisions	US	Colombia	Mexico	Philippines	Japan	India	Portugal	Spain	EEC
TIE - IN	illegal "per se"	illegal	illegal	illegal (exceptions possible)	illegal (acc. F TC guidelines)	illegal	illegal	illegal	illegal in princ.
Restriction on Licencee's right to deal in Competitor's Product (TIE - OUT)	illegal "per se"	illegal	illegal	illegal	illegal (with exceptions)	illegal	not mentioned specific.	illegal	illegal
Mandatory package licensing	illegal in princ.	not ment. specific.	not ment. specific.	not ment. specific.	not ment. specific.	not ment. specific.	not ment. specific.	not ment. specific.	illegal
Post expiration royalties (patent and licence)	illegal "per se"	illegal	illegal	illegal	not ment. specific.	illegal in princ.	not ment. specific.	not ment. specific.	illegal
Price fixing restricitions	virtually illegal "per se"	illegal	illegal	not ment. specific.	illegal	illegal in princ.	illegal	illegal	illegal
Quantity of volume restrictions	US Dept. Justice illegal "per se" Court decision varies	illegal	illegal	illegal	not ment. specific.	not ment. specific.	illegal	illegal	not ment. specific.
Territorial restrictions	determined by rule of reason	illegal	illegal (exceptions possible)	illegal (exceptions possible)	may be declared illegal	illegal in princ.	illegal	illegal in princ.	illegal

Source: National Legislation of Selected Developing Countries;
National Approaches for the Acquisistion of Technology - ID/187

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