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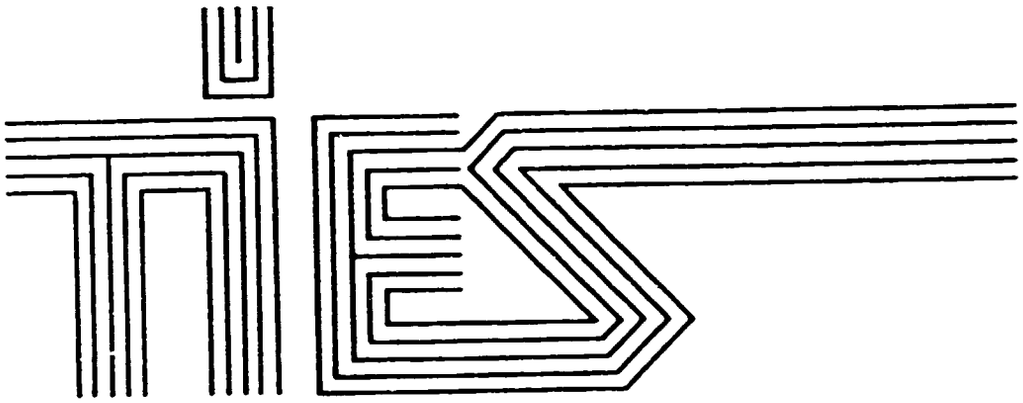

NEWSLETTER

Technological Information Exchange System

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Compiled by the Industrial Technology Promotion Division, Department for Industrial Promotion, Consultations and Technology, UNIDO, P.O. Box 300, A-1400 Vienna, Austria.

Dear Reader,

The 90's has witnessed the emergence of new dimensions to the issue of development and transfer of technology. For one, there has been a changing attitude of governments, industrialists and technology institutions as manifested by the increasingly closer linkage between scientific research, technology and industrial applications; and the trend towards protectionism of developed countries and liberalization by developing countries. There is also the issue of technological advances and their potential implications to developing countries; the rapid changes in manufacturing process technology and their importance to competitiveness and flexibility; the globalization of markets and production; the growing emphasis on market economies and the implications they bear on the relations between government and industry, as well as a growing awareness of environmental issues and energy efficiency. All these have accounted for an ever growing complexity of the various concerns surrounding technology transfer.

At the same time, these have also presented UNIDO with the challenge of developing new approaches to the technology issue while constantly working on the strength of those which continue to be relevant to the needs of developing countries. For one, it seems imperative that in order to improve opportunities of accessing successfully to new technologies, developing countries need to reexamine their practices on such aspects as intellectual property protection, market access, international price structure and negotiation strategies. They also need to explore the opportunities available under new and emerging forms of innovative business practices, such as the Build-Operate-Transfer (BOT) scheme. UNIDO in its programme of assistance is addressing these issues.

As a necessary part of meeting this challenge, UNIDO has undertaken the preparation of a study on emerging practices and trends in technology transfer. This study is intended to provide an overview of the current issues in international technology transfer; the changing environment for technology transfer; trends in suppliers' behaviour and developing countries' policies; channels for technology transfer and new forms of technology transfer transactions and enterprise-to-enterprise cooperation, among others.

We are sure our readers would have much to gain from this material. Starting this issue therefore, we are running the study in several parts and hope that it could thus present a clearer perception of the changes now taking place in the international environment and in the process assist in providing a sound basis for policy or practical considerations.

Technology Acquisition and Negotiation Unit
Technology Development and Promotion Division

CONTENTS

UNIDO NEWS

FOURTH AFRICAN-TIES MEETING REVIEWS PROGRAMME

The Fourth African-TIES Meeting was held in Lagos, Nigeria on 28-29 October 1991. Co-organizing the meeting together with UNIDO and the African Regional Centre for Technology (ARCT) was the National Office for Technology Acquisition and Promotion (NOTAP) of Nigeria. The meeting was attended by representatives from Benin, Cameroon, Cape Verde, Ethiopia, Ghana, Kenya, Morocco, Nigeria, Senegal, Sudan and Tanzania.

African-TIES as a programme is continuously showing its strength and value as a regional approach to the problems of technology acquisition and development in Africa. The regular meetings themselves have been serving as an effective forum whereby officials from countries in the region can interact and share ideas, information and experiences on their respective situations, the problems they have encountered and approaches they have taken in responding to issues of technology policy, acquisition and negotiation.

At this particular meeting, this interaction inspired the idea of cooperation encompassing the exchange of technologies indigenously developed and generated. In several countries, research and development has produced technologies, which are "spin-offs of tradition" and which represents technologies with the potential of being used in other neighbouring countries, for instance, techniques of food preparation, manufacture of agricultural implements and so on. The time could be ripe as the availability of institutions that could serve as effective focal points for such sharing to take place is there. UNIDO, on the basis of a request from the countries, will be looking into this possibility as well as identify mechanisms for a systematic sharing and exchange of technologies.

As far as the implementation of activities under the programme is concerned, the meeting endorsed the usefulness of the educational activities that UNIDO has been implementing for the region and felt that a more intensive training of evaluators and negotiators of technology transfer is still very much needed. To facilitate this process, a proposal has been made for UNIDO to organize a roving team of experts to service the various capitals both in terms of organizing seminars for technology transfer negotiators and rendering advisory services on the spot on actual and current problems and issues of technology acquisition.

Still under the programme, the meeting was presented with one of the concrete outputs of the African-TIES project (1990-91), the *Guide to Negotiators of Technology Transfer in the African Region with Special Focus on the Agro- and Agro-Related Sectors*. The preparation of this *Guide* was meant to be oriented towards the practical needs of negotiators in a sector that is of the highest priority in the region and this was much appreciated by the meeting. To give an idea of the content of this *Guide*, among the topics covered are: the general situation and specific features of the agro- and agro-related sectors in Africa; the most common types of technology transfer transactions; features and typical problem areas in this sector; the practical procedures from bidding to contracting, including sample clauses and main negotiation points; and prevailing opportunities for countries in the African region.

In the field of information exchange, the programme would enable the flow of the following types of information to take place on a regular basis: national legislation on technology transfer including pertinent rules and regulations and administrative procedures; statements or pronouncements on national policies relating to technology transfer and development; changes to legislation or policies as they occur, including the proposed introduction of new or revised ones; information on the institutional set-up concerned with technology transfer including key officers; research studies on country experiences with respect to technology acquisition, annual reports of institutions dealing with technology transfer; information on national workshops, seminars or meetings dealing with technology transfer; information on possible sources of locally generated technologies and foreign technologies as extracted from technology transfer agreements; and sample technology transfer contracts. UNIDO and ARCT will be the central data base for all information collected, which shall be disseminated to the participating countries in a systematic basis.

Much still needs to be done. The fact that the programme has generated positive results has brought about a desire for both an intensification and further upgrading of the programme to which UNIDO will continuously respond.

AFRICAN-TIES PROJECT PRODUCES GUIDE TO AFRICAN NEGOTIATORS IN THE AGRO- AND AGRO-RELATED SECTORS

A Guide to Negotiators of Technology Transfer in the African Region with special focus on the Agro- and Agro-related Sectors is soon to be released by UNIDO.

The *Guide*, one of the outputs of the African-TIES project, is intended to address the needs of negotiators, private investors and government officials in assessing and selecting technologies suited to the local needs and environment and in achieving contractual conditions conducive to successful technology transfer operations both in what concerns project feasibility and technological self-reliance. It covers all relevant aspects of the technology transfer cycle from bidding to contracting and takes into account the particular problems of the agro- and agro-based sectors in the African context.

Among the subjects treated in the *Guide* are: overview of agro and agro-related sectors in Africa, general trends and situation, specific features and sectoral analysis; forms and types of technology transfer transactions in these sectors, their characteristics and typical problem areas; from bidding to contracting, how to select technology, evaluate offers and recommended forms of contracts and sample clauses; important issues of negotiation, fees and payment, mutual obligations, guarantees and maintenance and spare parts; prevailing opportunities, joint venture and rehabilitation work.

The *Guide* is supplemented by a number of annexes containing details of specialized topics related to technology assessment and contracting as well as UNIDO programmes and services available as help facilities to developing countries in general.

TECHMART IN BEIJING

UNIDO, on 2-6 December 1991, organized TECHMART in Beijing in cooperation with the Institute of Scientific and Technical Information of China (ISTIC) and The Technology Exchange Ltd. of the United Kingdom.

TECHMART, an acronym for technology market place, is a new approach being taken by UNIDO in bringing together potential technology suppliers and recipients in a venue conducive to exploring technology leads and ventures. It provides a unique opportunity for a potential user to make comparisons of similar or comparable technologies in one place and at one time, and given such a range of alternatives, make a decision on the technology most appropriate to its needs. Individual demonstrations are immediately accessible and so are on-site negotiations. The effectiveness of this approach is also attributable to the advanced circulation of a comprehensive, indexed catalogue of technology offers from both developing and developed countries, which will go on actual exhibition. This enables participants and potential buyers to undertake prior study of the offers.

TECHMART Beijing gathered together some forty Chinese exhibitors in the field of metallurgy, chemicals, electronics, computers and light industrial machinery and some forty-five participants from thirty countries around the world.

In addition to the business contacts that took place, a number of seminars were held covering topics of interest to various target groups, for instance, the activities of UNIDO in the fields of industrial information and technology transfer operations, issues of technology transfer negotiations and the legal environment for technology transfer to China. A facility was also made available whereby legal advice could be rendered to parties who are able to take-off on their commercial negotiations.

UNIDO AND LES STRENGTHEN CO-OPERATION

The Licensing Executives Society (LES) organized its 1992 International Conference in Barcelona on 3-5 June 1992. The theme of the Conference was "The Role of Technology Transfer in Shaping the Future in Europe and the World". The various sessions dwelled upon such topics as "The effect of the unification and harmonization – what one can expect in the year 2000-Plus?", "What is new in technology transfer as it relates to industrial and environmental quality from a worldwide basis" and "Technological-innovation looking towards the 21st century".

LES is an international organization of professionals having the common purpose of increasing understanding of successful transfer and commercialization of technology and technology rights. Its membership spreads over five continents and 31 countries and now totals more than 5,400. Over the years, the co-operation between UNIDO and LES has been instrumental towards achieving a better understanding between technology suppliers and recipients and a smoother transfer of technology from developed to developing countries.

Prior to the conference, a high level LES delegation visited UNIDO headquarters in Vienna for discussions

on a number of programmes involving common interests, namely the finalization and publication of the *UNIDO Manual on Technology Transfer Negotiations*, the preparation of the monograph series on regulatory rules and practices on technology transfer, and the joint production of a video film on technology licensing. The Deputy Director-General of UNIDO was invited by LES to make the opening address at the Barcelona Conference.

TIES PROGRESS REPORT

A. Introduction

The following is a report on the status of TIES activities within the context of UNIDO's programme on technology acquisition and negotiation and how TIES as a cooperative network is evolving to make itself continuously relevant to present needs.

B. General Issues

1. **Objectives**: TIES as a cooperative network among developing countries, is a vehicle directed towards the general pursuit of assisting developing countries strengthen their capabilities in the field of technology acquisition and negotiation. Its uniqueness lies in the fact that it grows and thrives from the participation of its members.

2. **Membership**: TIES exists on the basis of participation and support of its members. Starting with ten countries represented by their technology transfer offices some ten years ago, the system has grown and has the participation of a total of 32 countries with some 49 focal points and the involvement of three regional organizations, namely the Association of Southeast Asian Nations (ASEAN), the African Regional Centre on Technology (ARCT) and the Junta del Acuerdo de Cartagena (JUNAC). While membership traditionally consists of government institutions responsible for technology acquisition, negotiation and registration, technology transfer offices, ministries of industry, boards of investments and industrial property offices, TIES is now expanding its links with institutions such as research and development agencies, science and technology commissions, industry associations and professional societies.

3. **Information coverage**: TIES was originally based on an exchange of information on terms and conditions of acquisition of foreign technology, namely information on technology payments, technology sources, duration of contracts, export provisions, types of collaboration, relationships between suppliers and recipients and other legal provisions of contractual agreements. The nature of the exchange was principally statistical and information of this nature was meant to assist participating countries in defining their evaluation standards and their negotiating parameters when acquiring foreign technology.

Today, TIES has evolved as an active and living source of information on technology transfer issues beyond statistical information. By using TIES, countries can benefit from each other in shaping and re-shaping technology policies, in formulating legislative and administrative mechanisms and in practical dealings with technology suppliers through an exchange of information, experiences and know-how. Through TIES, the following information is available:

- information on policies, legislative and institutional frameworks existing in other countries, which gives valuable insight into specific country approaches and experiences, particularly in the context of a changing internal and external environment, e.g., issues of deregulation and promotional activities of these offices;

- information on trends in technology developments in developed countries and in various international negotiating fora and their consequences for developing countries;

- information on characteristics of the international technology market and trends in international technology flows as reflected in contractual terms and conditions;

- sample agreements which provide illustrative cases of the outcome of technology negotiations for specific sectors and model agreements that can serve as a guide to negotiators when drafting their contracts, as well as in negotiating with their partners.

- information on specific experiences at the company level in a given sector as reflected in case studies, as well as specialized information on legal, economic, financial and technical issues related to technology transfer compiled through research studies and *ad hoc* data collection.

4. **TIES Instruments of dissemination:** The network generates information, which it subsequently disseminates to its members. So far, the following avenues are available:

- *TIES Newsletter*: This publication is now on its 45th issue. The *Newsletter* is meant to provide extensive updates on technology related events at the national and international levels, developments in country legislations, international events with a bearing on technology transfer and development and general topics of technology policy, acquisition and negotiation.

- *TIESWatch* Information Note Series: Since June 1990, this series has been in circulation as a regular and brief update on current news relating to technology transfer developments within the limited circuit of the TIES participating

countries. To date, we have issued 30 *TIESWatch* Notes.

- *A Compilation of Model Forms of Technology Transfer Agreements* recommended by the national authorities of selected countries: These model contracts could serve as a guide for entrepreneurs and government officials engaged in negotiations for technology transfers.

- *A Guide to the Compendium of Sample Technology Transfer Agreements*: This *Guide* is to be used as a reference for the library of contracts available from the contribution of participating countries which are classified by industry.

- *Country Studies on Jurisprudence and Practices related to Technology Transfer*: These studies contain information on legislative and administrative frameworks of selected countries with respect to technology acquisition – specifically, laws, rules and regulations, evaluation and monitoring policies and procedures and institutional arrangements. The first of the series will be ready for release by the end of this year.

- Research Studies and other materials for use of negotiators and policy-makers: A recent example of this is the UNIDO publication, *Guide to Warranty and Guarantee Provisions in Transfer of Technology Transactions*, which provides an extensive treatment of the legal, economic and technical implications of warranty provisions in international technology transfer agreements. Also under preparation is a study on emerging trends in technology transfer practices and new forms of enterprise cooperation, their consequences for developing countries and recommended policy responses.

5. CORIS, the Computerized Registry Information Systems: CORIS was conceived under the framework of TIES. It was designed to enable technology transfer offices handle and manage information on technology transfer agreements in a more systematic way. It was also meant to facilitate participation of these offices in the TIES statistical data exchange.

To date, CORIS is installed and operational in China, Ghana, Greece, Indonesia, Malaysia, Nigeria, the Philippines and Thailand. It is installed at a demonstration stage in Brazil, Ethiopia, Mexico, Peru and Tunisia. To keep up with the changing requirements of the offices using it, CORIS has undergone recent modifications in Malaysia, the Philippines and Thailand. There are also plans to upgrade the programme from DBase III Plus to DBase IV to allow for a networkable system.

6. Cooperation with the Licensing Executives Society (LES): UNIDO has been promoting regular dialogues and exchanges between the TIES participants and LES representatives with the intention of creating a better understanding of objects, problems and expectations between technology suppliers and technology recipients. LES has in fact participated in some TIES meetings and is now beginning to become engaged with UNIDO in some of UNIDO's promotional activities in the field of technology acquisition and negotiation.

7. TIES-Related Projects: Several projects have been born out of the activities taking place in the context of TIES, e.g.

- **ASTIS:** This is the ASEAN Technological Information Exchange System, which functions as a regional TIES network. The project essentially involved the introduction and installation of CORIS, with the corresponding hardware, in the ASEAN member countries and thereafter provide the facility for information exchange. The project is almost completed and a phase II dealing with a follow through to an information networking, regional cooperation and human resource development has been formulated and submitted for UNDP funding.

- **African TIES:** Like the ASTIS, African-TIES is intended to function as a regional network within the global TIES. A project of African-TIES activities involving elements of information exchange, human resource development and training is presently under implementation in cooperation with the African Regional Centre on Technology.

- **Nigeria:** This is a large-scale project to assist the Nigerian National Office for Technology Acquisition and Promotion (NOTAP) expand its scope into technology advisory and technology development services and at the same time, strengthen its technology information and monitoring activities.

- **Tanzania:** Again, this is a large-scale project to assist the Tanzanian Government through the Tanzanian Commission on Science and Technology, establish a national system for technology acquisition, indigenization and monitoring, including the capability to evaluate technology.

REGISTRY NEWS

ZIMBABWE

CORIS INSTALLED

At the request of the Government, UNIDO installed the CORIS (Computerized Registry Information System) software programme at the Department of Technology, Office of the President and Cabinet of Zimbabwe in November 1991.

The Department of Technology has the task of evaluating and registering technology contracts in Zimbabwe through the Industrial Projects Committee. This Committee is composed of representatives from the Zimbabwe Reserve Bank, the Ministry of Industry and Commerce, the Zimbabwe Investment Centre and the Department of Technology. Installation of CORIS is intended to systematize the handling of data on technology contracts and eventually assist in the task of evaluating contracts. It could also facilitate participation in TIES, as among the outputs of CORIS are the general data TIES tables.

In addition to the CORIS programme, INTIB databases were likewise installed. Training of officers at the Department on the use of CORIS and the INTIB databases were provided as a necessary part of the installation programme.

To date, CORIS is installed in Brazil, China, Ethiopia, Ghana, Greece, Indonesia, Malaysia, Nigeria, Peru, Philippines, Thailand and Tunisia.

MEXICO

INDUSTRIAL PROPERTY LAW ABOLISHES TECHNOLOGY TRANSFER LAW

A new act on industrial property entitled Mexican Law for the Promotion and Protection of Industrial Property was issued on 27 June 1991 and took effect on 28 June 1991.

The Law is intended to give more predictability to the state of investments in Mexico as it gives strong protection to the exclusive rights for the industrial and commercial development of new processes and products. It is also aimed at facilitating the transfer of technology and stimulating local research and development efforts, with the view to improving productivity and quality in all industries.

The transitory provisions of the Law consist of a repealing provision of the Law on the Control and Registration of Technology Transfer and the Use and Exploitation of Patents and Trademarks and its Regulations published in the Official Federal Journal on 11 January 1982 and 9 January 1990, respectively.

Further details on the provisions of the new Law based on a report received from the Secretariat of Commerce and Industrial Promotion are reproduced in this issue of the *TIES Newsletter* under the section entitled **Legislation.** The text of the Law itself will be run in subsequent issues of the *Newsletter.*

NIGERIA

NOIP CHANGES NAME TO NATIONAL OFFICE FOR TECHNOLOGY ACQUISITION AND PROMOTION (NOTAP)

The National Office of Industrial Property (NOIP) of Nigeria has recently been redesignated as the National Office for Technology Acquisition and Promotion (NOTAP). While this change in name does not change the Office's mandate and statutory functions at all, it does put into greater focus the reorientation of its work into promotional and developmental avenues.

Under a project of assistance to NOTAP financed by the United Nations Development Programme and executed by UNIDO, a technology advisory and technology development service is currently being established within the organization. Such a service is intended to have the capability of effectively servicing the needs of industry; for instance, for advisory assistance in the identification and evaluation of viable business projects, in the sourcing of technologies, in drafting and negotiating technology transfer or joint venture agreements, and in bridging the gap between industry and research and development through an organized and systematic interaction.

This service is expected to be functional by the end of this year when the project is due to be completed.

TANZANIA

ESTABLISHING A NATIONAL SYSTEM FOR TECHNOLOGY ACQUISITION, INTERNALIZATION AND MONITORING

Under a project of assistance funded by the United Nations Development Programme, UNIDO is assisting the United Republic of Tanzania in the development of a coordinative and promotional system for technology assessment, acquisition and transfer in Tanzania.

The system is intended to become the central coordinating organ of all technology transfer projects, including both equipment supply and know-how in the manufacturing as well as the agricultural sector; become the depository of all relevant information pertaining to transfer of technology, including technology selection, contract negotiation and technology monitoring; improve and/or develop the capability of promoting acquisition, development and internalization of technologies appropriate to the country; and develop the capability of advising and assisting the Government and private sector on matters related thereto, including the participation in and contribution to the success of technology negotiations.

The proposed national system was elaborated in and deliberated upon at a round table consultation meeting held in Dar-es-Salaam in January 1992, which was attended by senior officials from Government ministries, parastatal organizations and the private sector, as well as UNIDO experts and representatives. Convening the meeting was the Tanzanian Commission on Science and Technology (COSTECH), which is the national project counterpart.

The meeting confirmed the need for a coordinative system to service and promote technology inflows to Tanzania, while at the same time giving attention to the development and commercialization of locally generated technologies. As a result of this event, a document containing the proposed structure, functions and linkages of such a system was finalized and could now serve as the basis for the adoption of appropriate measures to start the establishment of the system.

ARGENTINA

REGISTRY PERSONNEL MOVEMENTS

News received from TIES counterpart Ing. Luis Alberto Ravizzini, Chief of the Technology Transfer Registry of Argentina, informs us that Dra. Norma S. Felix, previously Deputy Chief of the Registry, has been promoted to become the Chief of Technology, Quality and Industrial Property of the Subsecretary of Industry.

Ms. Alejandra Turria takes over from the post left by Dra. Felix. The new chief of the Legal Office is Mr. Marcelo Jolly.

TECHNOLOGY ACQUISITION

TECHNOLOGY TRANSFER TRENDS:

An Overview of Strategic Partnering

by Professor Lynn Mytelka, Carleton University LAREA/CEREM, Université de Paris X, 92001 Nanterre, France

The following is the first of a series of articles we shall be presenting in future issues of the *TIES Newsletter.*

I. DEFINING THE STRATEGIC PARTNERSHIP

During the 1980s strategic partnering activity rose in importance in the advanced industrial countries. In analyzing the growth of strategic partnering activity, we will be referring primarily to two forms of networking by companies: inter-firm collaborative agreements in research and development and links between firms and universities or other non-profit research institutions.

Strategic partnerships are all about knowledge – where *KNOWLEDGE* is understood to include:

- *Research and development*
- *Design*
- *Engineering*
- *Marketing*
- *Management capabilities*

The *KNOWLEDGE COMPONENT* of strategic partnerships may involve the development of new products, new production processes or new routines within the firm or in its ability to manage inter-firm contractual relationships. In a developing country context, innovations such as these are regarded as new when they are new to the local firm, irrespective of whether or not they are new to the world.

Strategic partnerships in research and development can be distinguished from more traditional forms of linkage between firms such as joint ventures, licensing or sub-contracting arrangements by three main characteristics. These are listed below.

Characteristics of Strategic Partnerships

- They are two-way relationships focussed on joint knowledge production and sharing as opposed to a one-way transfer of technology.
- They tend to be contractual in nature with little or no equity involvement by the participants and when such partnerships include an equity arrangement, the intent is less to exercise management control than it is to help finance the partner firm's share of joint R&D activities.
- They are part of the longer term planning activity of the firm rather than simply an opportunistic response to short-term financial gain.

(Source: Mytelka (1991) "Introduction", p.1.)

Although the focus in this article is on strategic partnerships in research and development, these are not the only form of collaborative activity in which firms have engaged. Table 1 provides a typology that includes both older, unidirectional forms of linkages, as well as some examples of the newer forms of partnering activity in R&D, production and marketing that became more prominent over the past decade.

Licensing agreements are a classical form of one-way relationships between firms that go back over 150 years. Today, two forms of licensing arrangements are common. First, cross-licensing, as in the international electrical industry (Lean, Ogur & Rogers, 1982; Newfarmer, 1980) is a production and marketing device through which the market power of each of the parties and collectively of the oligopoly to which extensive cross-licensing can give rise, is reinforced. The second, simple licensing, is an asymmetrical relationship through which the licensor seeks to incorporate the licensee within its strategic planning parameters. It does so by offering the use of brandnames or process technology subject to a set of negotiated conditions. In both cases, technology enters into the relationship, but primarily as a one-way transfer (Mytelka: 1991, 8.)

Through licensing, the licensor accesses a new market, reduces the risks of investing in plant and equipment there and commercializes its particular technological assets. For the licensee, a license is a means to more rapid production and perhaps to higher market shares and economic rents than the firm could have secured had it invested in the development of the particular product or process technology on its own. But such immediate benefits are often gained at the expense of future technological dynamism, particularly if the licensee substitutes licensing for in-house research and development (R&D) (Mytelka, 1979). When this occurs, the firm fails to develop the in-house capabilities to source inputs on its own, modify the product or process, or at a later date, introduce new products on its own.

Technological capabilities such as these are important if the firm is to adjust to changes in prices, tastes and competitive conditions in both the domestic and export markets.

Franchising is similarly a unidirectional relationship between a firm which owns a "concept" and the firm which obtains the right to use that concept, provided that it maintains both the form and the content of that concept. Thus Benetton stores must display their goods in exactly the same fashion and all Mcdonalds serve big MACs.

Sub-contracting is yet another unidirectional relationship. In the past, almost all sub-contracting relationships involved a principal who was the "client" firm but who designed the product and often consigned components or other inputs to the "supplier" whose job it was to manufacture the product to the client's specifications. In the garment industry few opportunities to develop input sourcing, design or marketing capabilities exist when the client firm supplies pieces of fabric already cut to its own design and size specification and the supplier firm merely sews the garment and ships it back to the client. A parallel situation exists in the electronics industry, particularly in the assembly of printed circuit boards, when the client supplies not only the specifications for assembling the pcb, but also consigns the integrated circuits, resistors, capacitators and other components of the printed circuit board.

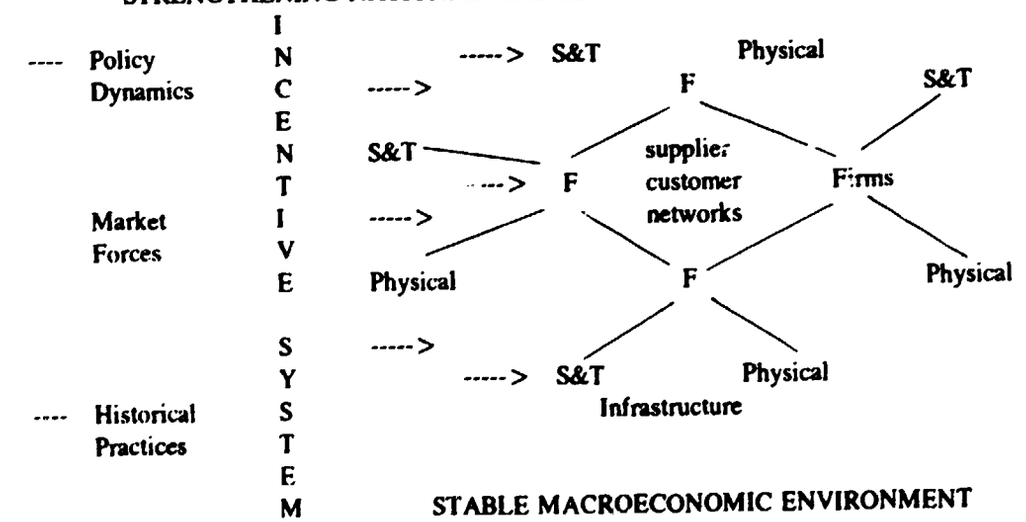
Many one-way sub-contracting relationships can however be transformed into two-way client-supplier networks. This is already common practice in the aircraft and automobile industry, where the client firms are the assemblers of the finished product – a car or a plane, for example – and they work closely with supplier firms who help to design the components for new models as these are developed. Many such components can be grouped into modules or sub-assemblies, as in the manufacture of dashboards for automobiles, which

Table 1: A Matrix of Linkages

	RESEARCH AND DEVELOPMENT*	PRODUCTION	DISTRIBUTION
ONE-WAY	Licensing, Cross-licensing, Early efforts to commercialize public sector R and D (CNET - Alcatel) (NRC)	Sub-contracting OEM (Hitachi - Goldstar) Acquisition; Joint ventures	Franchising (McDonald's) (Benetton)
TWO-WAY	R and D consortia (ESPRIT) (SEMATECH) (VISION 2000) (PRECARN) Customer-supplier networks (aircraft industry), Inter-firm technology collaboration agreements, University/industry partnerships (Robotics Institute at Carnegie-Mellon) (Stanford's Centre for Integrated Systems)	Co-production Use of common components (Renault - Volvo) Modularization (auto dasnboards) Joint ventures	Joint marketing System products (the wired house) Standardization (HDTV)

* R and D includes design and engineering
(Source: Adapted from Mytelka: 1992)

Figure 1
STRENGTHENING NATIONAL AND REGIONAL SYSTEMS OF INNOVATION



integrate the necessary electronic components. In the garment industry such a transformation implies that the supplier firm discusses its own designs with client firms, as well as executing the client firm's own designs and it requires that the supplier firm be knowledgeable about fabrics, knows where to source them, and has the capability to translate sketches into patterns and into cut pieces on its own. Table 1 shows the transformation from "sub-contractor" to "supplier" by classifying the former as a one-way production relationship and the latter as both a two-way "R&D" partnership and a two-way production partnership where "modularisation" is an element.

Some joint ventures are strategic partnerships, others are not

Unlike licensing and franchising, which are arms-length relationships, a joint venture is a form of direct investment. It may be defined as an agreement in which two independent legal partners establish a third independent legal firm. From this perspective an international joint venture can be viewed as a form of foreign direct investment.

In many instances joint ventures are modified forms of more classical investment activities in which a firm creates a wholly owned subsidiary either within the home market or in a host market. Most contemporary theorizing, stresses that multinational corporations favour such internalized hierarchies and prefer wholly owned subsidiaries to joint ventures. These preferences, it is argued, stem from the potential that hierarchies afford for a reduction in transaction costs and, in a context of market imperfections, an enhancement of the ability to appropriate rents from tangible or intangible assets (Hymer, 1976; Kindleberger, 1979; Teece, 1981; Dunning, 1980; Buckley & Casson, 1976). Nevertheless, because of factors such as increased risks, higher financial and managerial costs or restrictions stemming from national regulatory policies, wholly owned subsidiaries are impracticable or undesirable. The number of joint ventures and their proportion relative to the wholly owned subsidiary has thus risen in all sectors of the economy over the course of time (Curhan et al., 1977; Hladik, 1985). In manufacturing, for example, "the yearly share of joint ventures in new manufacturing subsidiaries grew from about 10 per cent in the first decade of this century to over 50 per cent in the early 1960s" (Gomes-Casseres, 988, 112).

Despite this increase, the joint venture has not replaced the wholly owned subsidiary as the dominant form of direct foreign investment in industrialized countries. Canada is a country with a very high level of foreign investment. Its experience confirms the continued importance of the wholly owned subsidiary, particularly in the manufacturing sector. Thus, over the 1980s, the share of joint ventures in the total number of corporations in the Canadian manufacturing sector rose from 15.6 per cent in 1981 to 17.6 per cent in 1985, dropping slightly to 17 per cent in 1988. In contrast, the share of wholly foreign-owned subsidiaries rose from 38.8 per cent in 1981 to 42.6 per cent in 1985, reaching 43.6 per cent in 1988 (Corvari et al.: 1991, Table 3).

The notion of a joint venture primarily refers to the equity arrangement between firms rather than the element of two-way partnerships with a particular emphasis on knowledge production and sharing. Some, but not all, strategic partnerships are therefore joint ventures. For example, some strategic partnerships do not involve an exchange of equity or indeed any direct investment at all. Others, as in the biotechnology industry, may involve an equity arrangement, but the intention is less to exercise control than it is for the larger firm, usually a major pharmaceutical, chemical or petrochemical company with the financial and marketing resources that the smaller innovative partner lacks, to provide a capital input that enables the biotechnology firm to continue its research.

As a general rule, joint ventures in production or marketing tend not to be strategic partnerships, although even this is changing. For the most part, however, they rarely involve joint knowledge-production or sharing activities. Nor are they strategic in the sense that they seek to improve the future competitive position of the firm. It is because of this emphasis on positioning, that strategic partnering activity tends to assume greater importance in the longer-term planning objectives of a firm than it does as an *ad hoc* response to the opportunities for short-term gain. To illustrate this duality in the nature of joint ventures, they have been entered twice in the typology contained in Table 1.

During the 1980s, two-way relationships grew in importance. This shift from the *quasi* exclusive reliance on one-way linkages to the development of two-way collaborative relationships requires some explanation. Chapter II of this article therefore examines the origins of strategic partnering activity from the perspectives of the firm, the university and the states that are promoting it.

II. THE ORIGINS OF STRATEGIC PARTNERING ACTIVITY

There is considerable evidence now available to suggest that the economic downturn that began in the late 1960s and accelerated during the 1970s was due less to the two oil shocks of 1973 and 1979 and more to a rising inflationary trend evident in agro-related products and in the relative and absolute declines in the productivity of the manufacturing industry in the United States, Canada and much of Western Europe (OECD: 1983, Baily & Chakrabarti: 1988). These declining productivity levels reflected in part the exhaustion of the technical possibilities of certain long-standing methods of production, notably the mass production techniques associated with the manufacture of cars, textiles and clothing, synthetic fibres and electronics (Freeman & Perez: 1988; Aglietta: 1976). In this context, heightened competition from Japanese industry, where the organization of production differed from established practice in much of Europe and North America, stimulated the emergence of new forms of global competition in which innovation played a central role. In what follows we shall look at how firms, univer-

sities and states have responded to this challenge.

For the firm arms-length collaboration in R&D reverses a long tradition of directly appropriating knowledge through in-house R&D.

From the firm's side, arms-length collaboration in research and development (R&D), such as that undertaken in strategic partnerships, reverses a fairly long tradition of directly appropriating knowledge through in-house research and development. That tradition dates back to the development of science-based industries in the 19th century (Freeman: 1974; Mowery, 1983) and it persisted well into the post-war years. As late as 1970, US MNCs were reportly spending 97 per cent of their total R&D expenditure in the US, almost all of it in-house (Michalet: 1976). Given this tendency to centralize R&D in the home country, it is understandable that direct foreign investment traditionally involved little joint knowledge production and sharing, though one-way transfer in the form of licensing has been a feature of such activity since the 19th century. Thus, the Harvard MNC project (Curhan, Davidson and Suri: 1977) and the work of Stopford and Wells (1972) both undertaken during the 1970s, make no reference to the internationalization of R&D activities by the ventures covered in their studies. Similarly, in her study of 420 US overseas joint ventures in the manufacturing sector, created during the period 1974-1982 Hladik found that only 15 per cent engaged in R&D – and this despite the fact that she broadly defined R&D to include minor product modifications as well as more collaborative R&D activities (Hladik: 1985, 64). Collaborative R&D thus remained uncommon and little, if any R&D was done in the overseas subsidiaries of multinational corporations throughout much of the 1970s. By the end of that decade, however, four developments took place that would change the strategies of firms with respect to collaborative R&D. These are:

- *The growing knowledge-intensity of production*
- *The globalization of competition*
- *Rising uncertainty*
- *A need for flexibility*

The Growing Knowledge-Intensity of Production

During the 1970s, research expenditures began to rise in the more dynamic enterprises as shifts in demand and the emergence of new competitors led firms to develop strategies based not only on cost reduction but on customization, quality and close supplier-client relationships. The growing knowledge-intensity of production which resulted is evident as much in agriculture, forestry, fishing and mining as it is in the manufacturing sector and within that sector across industries from textiles to telecommunications. It can be seen from OECD data on the increasing number of scientists and engineers engaged in R&D and on the RISING share of R&D in Gross Domestic Product and in manufacturing value added, especially in countries such as Japan and Germany where strategies of international competitiveness based on technological innovation and diffusion are being pursued. Even more revealing of the growing knowledge-intensity of production are data for the manufacturing sector that show that R&D expenditure has grown at three times the rate of tangible investment over the past two decades and that the share of NON-MATERIAL investment (R&D, training, software development, design) in the GDP of the major advanced industrial countries has been steadily rising over the past ten years (OECD: 1991).

The Globalization of Competition

As production became more knowledge-intensive, the pace of innovation quickened. Product life cycles in dynamic knowledge-intensive industries shortened as the very nature of the products, their uses and the manufacturing techniques required for their production differed substantially from one product generation to the next. With shortened product life cycles, firms were obliged to spend increasing amounts on R&D to remain at the technological frontier in their industry. R&D expenditures of the top ten pharmaceutical companies, for example, averaged 10.6 per cent in 1987-88, having risen dramatically in parallel with a doubling in the number of drugs under development worldwide over the period 1981-86 (*The Economist*, 4 February 1989, 63). In the telecommunications industry, the top ten firms spent an average of US$ 752.8 million, 7.5 per cent of their turnover, on R&D in 1986. This represented an increase of 9.3 per cent over the previous year (IDATE, 1987, 14). For a firm like Siemens that straddles several branches of the information technologies industries, the share of its products invested within the previous five years rose from 43 per cent in 1976-77 to 52 per cent in 1981-82 and reached 60 per cent in 1986-87 and its R&D budget doubled between 1983-84 and 1986-87 (von Tunzelmann & Soete, 1987, 81) suggesting that a process of deceleration has not yet begun.

To amortize these costs, companies required wider markets. Competition thus globalized; but as it did, earlier strategies aimed at securing national markets for products with high research and development costs through tariffs, domestic procurement policies and intellectual property rights came under increasing pressure. The development of a new digital switching mechanism in the early 1980s, which cost the world's leading firms approximately US$ 1 billion (*Financial Times*, 6 June 1982), is a good example. For such investments to be profitable, markets of nearly US$ 14 billion in sales over a ten-year period were needed (Dang-Nguyen, 1983,103). Yet the global telecommunications market was already a relatively mature market with growth averaging only 4.8 per cent over the period 1977-87. The expected increase in growth to 5.2 per cent per year over the next decade will not change the essentially zero-sum nature of the competition in this market (IDATE, 1987). Global competition in the telecommunications industry has thus led to pressures for market liberalization and to a surge in mergers and

takeovers within the industry.

Matching investment costs to the structure of demand has been problematic for other knowledge-intensive industries as well. In the semiconductor industry, for example, the minimum investment required for a new microelectronics production line (200 million ECUs) is "quickly matching the total value of annual output in a typical plant" (Commission, 1986, 16). Moving to a system of standardized mass produced integrated circuits as a means of realizing economies of scale, however, increased the vulnerability of these large-scale plants to fluctuations in product demand and to market segmentation. "Equipped with such high-cost monster plants, Japanese firms didn't have much choice but to flood the market with a limited variety of standard IC commodities. This in turn, of necessity has produced periodic price collapses" (Ernst, 1987, 13) undercutting profit margins and making new investment more difficult.

Uncertainty and the Need for Flexibility

The uncertainty generated by the rising costs and risks in knowledge-intensive industries was exacerbated by the segmentation of demand growing out of the economic crisis of the 1970s and early 1980s. With slower growth in domestic purchasing power in the advanced industrial countries and crisis conditions in much of the Third World persisting into the present, markets that depended upon the sale of consumer durables became saturated. These changes undermined the strong linear relationship that had been established between a rapidly growing market, defined in terms of a range of goods, a heavily equipped manufacturing base that permitted economies of scale, and a set of R&D activities primarily oriented towards product differentiation. During the 1950s, this relationship had given rise to a pattern of competition characterized by the setting of a big firm on a big market and the building of an oligopolistic position within it. In this way, market shares were stabilized and oligopoly rents were secured. Within such a competitive framework, new technology was developed primarily to penetrate a previously identified market. Shifts in demand in the context of the growing potential for rapid technological change, undermined this type of competitive behaviour. New products, combining both new manufacturing processes and new goods, stimulated the rise of new industries and brought new entrants into existing industries (including the arrival of the newly industrializing economies), thus shaking the position of established leaders, while market segmentation placed new pressures on the model of mass consumption based on the manufacture of standardized goods. With markets under pressure, vertical integration linking the market to manufacturing and to R&D activities, once the formula for growth, now threatened to impair the ability of firms to adapt to change. Traditional product-based oligopolies, moreover, were no longer effective in reducing uncertainty when the very conception of what might constitute the market for a new technology or product was unclear and when major discontinuities in formerly incremental technological trajectories and the erosion of frontiers between industries made it difficult to identify from where, geographically or sectorally, new competitors might emerge. Thus, the rapid pace of innovation, heightened uncertainty and the mosaic-like structure of segmented demand gave rise to a need for flexibility at the same time as rising costs for R&D and wider sales networks required critical mass.

To achieve the twin goals of critical mass and uncertainty reduction without adding to the inertia of the firm, NEW COMPETITIVE STRATEGIES have been developed alongside more traditional practices, such as mergers and acquisitions. Two of these bear particular mention: the decentralization of R&D to domestic and foreign universities and research institutions and the development of inter-firm collaboration in research and development. We will briefly look at the former here, leaving the latter to a more detailed examination in Chapter III.

Many firms from the industrialized countries have begun to locate R&D laboratories in their overseas subsidiaries

In contrast to earlier attempts to concentrate R&D at the head office, a not insignificant percentage of those engaged in knowledge production are now located in offshore laboratories. IBM France, Germany and Switzerland, for example, are powerful R&D actors in their own right – so much so that high temperature superconductivity was first demonstrated by a German and a Swiss scientist in IBM's Swiss laboratory. In the automobile industry, Toyota had come to rely on its design studios in Southern California. In pharmaceuticals, Glaxo is a good example. In 1978, Glaxo employed 1,500 persons in R&D, 97 per cent of whom were based at two research centres in the UK. By 1988 it had increased its R&D staff to 5,000, only 63 per cent of which was now located in the home market (Howells: 1990). German manufacturing industry employed about 300,000 people in R&D in 1989, of which 40,000 were estimated to be working in the R&D units of the subsidiaries of large German MNCs mainly located in other European countries and in North America. Over the 1980s, R&D employment abroad grew faster than overall employment abroad and R&D intensity abroad grew faster than in Germany. (Wortmann:1990, 175; Dorrenbacher & Wortmann: 1991).

Large firms have also invested in university based research at home and abroad

The 1980s also witnessed a growth of investment by firms in university based research institutes both in their home country and abroad. In the United States for example, total corporate funded research and development rose 113 per cent in 1981 over 1967 but US industry's expenditures for R&D in universities and non-profit institutions rose 281 per cent during the same period. Over the next five years, this increased considerably as supercomputer centres were established at Cornell, Princeton, University of California at San Diego and the University of Illinois at a cost of US$

400 million, of which US$ 200 million came from firms such as IBM, Exxon, AT&T and Lockheed (*International Herald Tribune*, 27 February 1985) and with Government assistance similar centres for robotics, new materials and engineering techniques were established at still other universities. A similar process was underway in the United Kingdom, where two major electronics groups financed chairs of molecular electronics and assisted in the establishment of research laboratories at two UK universities with the objective of ensuring a "more efficient technology transfer from university to industry". (*Financial Times*, 13 February 1983). In Canada, the Natural Sciences and Engineering Research Centre of Canada (NSERC) had by 1991, established a total of 86 industrial research chairs in Canadian universities while funding of university-industry research partnerships by NSERC had risen from under US$ 5 million in 1983-84 to some US$ 35 million in the 1990-91 fiscal year (NSERC: 1991, 26).

Over the 1980s the firm's interest in linkages with universities and research institutes has been increasingly reciprocated

During the past decade, universities and research institutes have become increasingly more interested in promoting links to industry. But this has not always been so. Rather, in the past, linkages between the research and the productive sectors were limited in all but a few countries such as Germany, where historical practices (Freeman: 1974) or the United States where government encouragement through the National Research Council (NRC) during the 1920s (Swann: 1988) or defense spending during the post World War II period (Bellon: 1986) have been important factors in their development.

The absence of linkages, however, was far more common. This was as true for linkages between enterprises and the graduate faculties of public and privately funded universities as it was for the transfer of technology from publicly funded research laboratories such as the National Research Centre (NRC) in Canada, the Centre National de Recherches Scientifiques (CNRS) in France or the National Institutes of Health (NIH) in the United States to industry. Both the culture of science, with its emphasis on the free exchange of information and the culture of universities where career patterns and prestige depend more upon discoveries resulting from basic research than on applied research and where a strong publications record is essential, were important in keeping the R&D and productive sectors apart.

Two factors in particular, account for the recent interest of research administrators and researchers themselves in developing linkages to the productive sector. First, the recessionary conditions in much of Western Europe and North America in the 1970s were followed by reduced real spending on higher education in many of these countries during the 1980s. In the United States, for example, "federal funding for academic research has grown at an annual rate of only 4.3 per cent over the past ten years, and that is far below inflation. This has resulted in a shift in relative support for basic research from the federal Government to industry and the universities themselves". (Featherman: 1991, 77). In Canada this was coupled with a widening gap between fixed costs and new enrollments after the peak of the baby-boom.

Faced with austerity budgets that forced cut-backs in hiring and a retrenchment in new programmes, universities, in particular, found themselves under increasing pressure to seek additional funding from non-government sources (OECD: 1984). In addition to these financial constraints there were pressures on the universities to become "relevant" and to contribute to the process of improving the competitiveness of the productive sector in a changing world economy. Calls for "mission-oriented" science, later extended to the social sciences, have proliferated (Featherman: 1991, 75).

Universities have thus been led to develop industrial parks on land they held, thereby making better use of this asset, but also bringing in potential employers of their students and founders of university research. Because the percentage of grant applications that receive funding has steadily fallen and the value of awards is frequently below what is needed to carry out a project, universities have begun to encourage direct collaboration between researchers in industry and those in the university – including the development of new programmes, new facilities and direct inter-changes of research personnel. These linkages are not limited to domestically based enterprises, but also include contract work for firms located abroad (Berman: 1990; Dimancescu & Botkin: 1986; Link and Tassey: 1989, Malerba et al.: 1991; OECD: 1984).

Governments in the industrialized countries are actively promoting strategic partnerships

During the 1970s and 1980s governments at all levels – municipal, regional, national and supra-national – and in countries with widely differing historical traditions of state intervention in the economy, began to directly promote inter-firm collaborative agreements in R&D and links between firms and research institutions. Local governments, for example, sought to foster regional development by imitating the model of Silicon Valley and Boston's Route 128. They created incubators for small firms, industrial parks next to university centres, and promoted the development of "technopolises" – the Japanese being the first with Tsukuba city, followed in the 1980s by their Technopolis concept – and the French being active followers in the promotion of dozens of technopolises, of which Sophia Antipolis is perhaps the most well-known (Gibb: 1985; Williams & Gibson: 1990). There are a number of reasons for this.

First, the growing knowledge-intensity of production, changing competitive conditions at the global level and uncertainties associated with this process, rendered problematic more traditional industrial policy instruments whose objective was to set output targets and/or pick "national champions". Earlier at-

tempts to stimulate innovation and thus raise productivity growth through industrial policies moreover, rarely took into account the way in which changes in non-material investment – managerial innovations, training programmes, software development as well as R&D, design and engineering – contributed to the competitive advantages of firms. As these factors increasingly shaped the competitiveness of firms during the 1980s, science and technology policies, particularly those designed to promote the more rapid development and diffusion of generic technologies became more important.

Second, it had also become widely acknowledged that linkages amongst firms and between firms and research institutions through which innovation and diffusion would take place, were not occurring spontaneously and that much depended upon the incentive system to change traditional habits and practices. Government policies and market forces were key elements in the promotion of such linkages (Figure 1, see page 8). In France, for example, the first years of the Mitterand Government (1981-83) marked a sharp turn in the importance assigned by the state to technological development and to the link between R&D and industry. In 1982, a plan to strengthen research and technological capabilities was adopted and it included a major increase in the R&D budget. Within public research organizations moreover, a greater emphasis was also placed on the diffusion of research findings. A Direction de la Valorisation was thus created within the Centre National de Recherche Scientifique (CNRS) to promote the transfer of new knowledge to industrial users, and career incentives were altered to make exchanges of personnel between the CNRS and industry more attractive.

Other government policies have also proved to be essential in creating the kind of environment within which innovation and diffusion are encouraged. Stability of the macroeconomic environment, for example, is crucial in the process of investment planning by firms, which in turn, conditions the utility of establishing R&D linkages whose results are not immediately forthcoming. But even then, where markets remained overly protected, the need for innovation is less apparent. Market forces that include not only price signals, but the size and shape of domestic markets and competitive conditions within domestic and international markets, are thus powerful stimuli for firms to engage in strategic partnering activity.

Policies through which financing is used to leverage R&D linkages between suppliers and clients or between firms and the science and technology infrastructure are essential for small- and medium-sized enterprises for which R&D is a luxury they can rarely afford (Mytelka: 1990). In the United States, most of the corporate funding of university-based research discussed above, complements seed money provided by the National Science Foundation (NSF) which, since 1973 has facilitated the establishment of university/ industry cooperative research centres – in polymers at Case Western Reserve and MIT; in robotics at Carnegie-Mellon's Robotics Institute and the University of Michigan's Center for Robotics and Integrated Manufacturing; in biotechnology at Washington University; and in microelectronics at Stanford's Center for Integrated Systems and at the Micro-electronics Center of North Carolina created by a consortium of universities.

Third, the need to promote R&D collaboration had quite early on been recognized by late comers, such as Japan, primarily as a vehicle to facilitate the process of technological catch-up – speeding the process of assimilating and diffusing imported technology. In the 1960s mastery of synthetic fibre technology was promoted in this way (Ozawa: 1980), as was the development of computer and semiconductor technologies (Levy & Samuels: 1991). Many of the engineering research associations set up to master imported technology have since been transformed into consortia for applied research as Japanese industry moved closer to the technological frontier, while others, such as the textile products manufacturing system created in 1986, or the large-scale research projects on super advanced processing systems and superconductivity created in 1987, are new associations. In the telecommunications field, the evolution of partnering activity is particularly interesting. First because Japan's digital switching technology was initially developed in the laboratories of Nippon Telegraph and Telephone, a state-owned corporation, and subsequently transferred to the big four private firms – NEC, Hitachi, Toshiba and Fujitsu. These firms, however, have traditionally done little basic research in the telecommunications field. As product cycles in the telecommunications industry shortened, the decision to privatize NTT and the weakness of Japanese universities as research institutions, coupled with the traditional lack of basic research in telecommunications in the four "national champions", made the creation of R&D consortia in telecommunications all the more essential. Thus, a portion of the sale of NTT shares has gone into the creation of The Key Technology Promotion Center and under its aegis, the Advanced Telecommunications Research Institute, a joint public – private research facility and network.

The promotion of R&D consortia in Japan has over the past two decade spawned a host of imitators. In Chapter IV we will examine a number of these in Canada and Europe. In the United States, perhaps the most well-known, but now ailing, programme is SEMATECH, a research and development consortium composed of 14 American firms whose objective is to develop lithography techniques and other process tools for denser integrated circuits. SEMATECH, which received direct funding from the US Department of Defense, marks a departure from earlier practices and is evidence of the need for all countries to play by the new rules of international competition, in which a role for the state in promoting competitiveness through strategic partnering activity has become acknowledged.

(To be continued in a later issue of the *TIES Newsletter*).

THE BUILD-OPERATE-TRANSFER (BOT) CONCEPT: AN OVERVIEW

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I. THE BOT CONCEPT

BOT stands for Build–Operate–Transfer. The BOT concept has a number of variations. All, however, involve the establishment of a private sector project company as a vehicle for ownership, financing, construction, maintenance and operation of an infrastructure project for a certain period. Thereafter, ownership is usually transferred to the public sector.

During the operation period the Project Company will charge prices, tolls, fees, etc. sufficient to pay back the project debt and to provide dividends to the shareholders of the Project Company. The financing is raised by the Project Company from commercial banks, sometimes backed by export credit agencies and by multilateral and bilateral lenders. The financing of BOT projects are normally on "a project financing" or "non-recourse" basis. The lenders are supposed to look at the cash flows and earnings of the Project Company as the only source of funds from which the loans will be repaid (and to the assets of the Project Company as collateral for the loans). Relatively few BOT projects, however, are so completely self-supporting that they can be financed without any guarantees and safeguard undertakings by the interested parties, including the host government. Normally the governments will not provide sovereign guarantees or borrow any money on behalf of the sponsors, but support from host governments may include assurance of minimum revenues, sharing of project risks, guarantees of the performance of government agencies involved in the project, etc.

II. THE STRUCTURE AND PHASES OF A BOT PROJECT

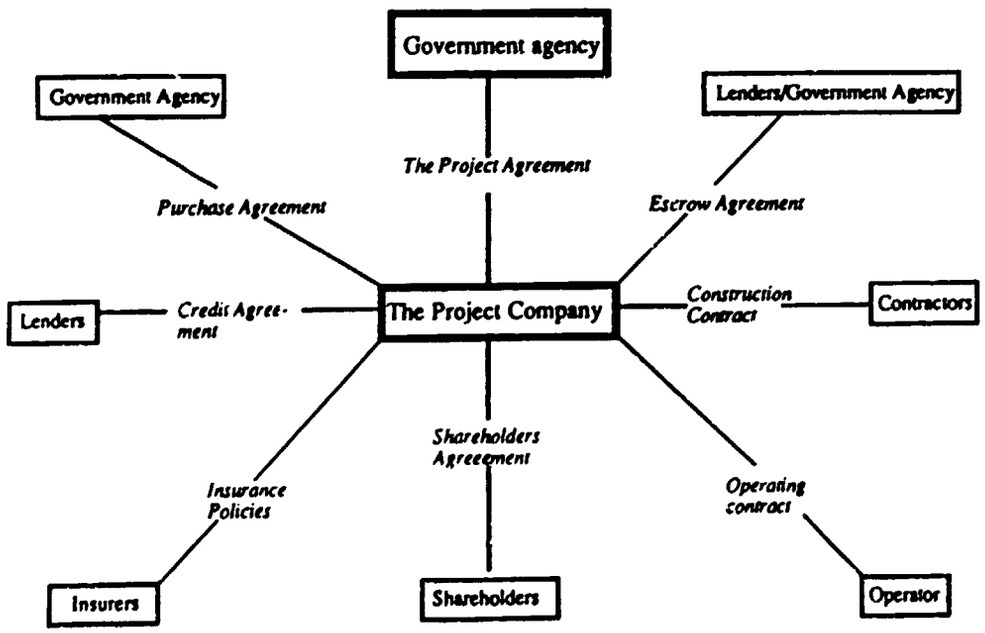
II.1. The BOT contract package

The structure of a typical BOT project can be described through the building blocks of the BOT contract package as shown in the diagram below.

The primary contract is the project agreement (implementation agreement – concession agreement). This is the contract between the host government and the Project Company. It entitles the Project Company to build and operate the project facility and imposes a number of conditions as to design, construction, operation, maintenance, etc., of the project. It fixes the operation period, the payment for the usage of the facility, the way in which payment should be effected and so on. In short: the project agreement is the key contract of a BOT project, and the contractual basis from which the other contracts are developed.

The subscription of the share capital and the contractual arrangements between the shareholders are contained in a shareholders agreement. The majority shareholders of the Project Company are normally the private project sponsors who in turn might be private construction companies, equipment suppliers, interna-

The contractual structure of a typical BOT-project



tional trading companies and the lenders. The participation of the host government as shareholder (equity investor) is not unusual in some countries and in some fields such as the petroleum industry.

The construction contract is normally a fixed price turnkey construction contract covering all the work. If the BOT infrastructure project involves large construction work and the supply of heavy machinery and equipment, the Project Company will negotiate the construction contract with a consortium of experienced building companies and equipment suppliers to assure the timely and proper completion of the project facilities. Effectiveness of the turnkey arrangement might be a condition precedent to lenders.

In case the host government or a government agency is the only customer of the infrastructure project, the Project Company will negotiate a separate purchase agreement with the government. The agreement provides the company with an assurance of a minimum purchase by the government and arranges the price structure – often on a take or pay basis. That means that as long as the government pays the fees, the Project Company is assured of sufficient funds to service its debt, cover its projected costs and make a profit.

A fifth major contract of a BOT project is the Credit Agreement between the Project Company and the lenders. There is an almost infinite number of conditions, type of loans and instruments used in BOT financing.

The risk of non-repayment of the loans is usually covered in two ways. First, by standard types of safeguards, such as fixed price turnkey contracts, providing for performance bond and liquidated damages, real estate mortgage, default clauses, assignment of insurance contracts, etc. Secondly, by safeguards specific to BOT projects such as guarantees by governments for the performance of government agencies, agreements on contingency loan for a limited period, escrowing agreements and shareholders and sponsors support agreements. The loan security structure will be included in the Credit Agreement.

Normally the Project Company will enter into an operating/management contract with a professional operating company. The operating/management contract spells out operation specifications, maintenance standards, operating costs, incentives, etc., for the operation period.

An adequate insurance programme (insurance policies) must be arranged both during the construction and operation of the project. The Project Company usually has little to fall back on in the event of a casuality loss except for insurance proceeds.

The contractual framework of a BOT project as outlined here, is of course not exhaustive. Escrow agreements, service agreements, energy supply agreements, supplementary loan agreements, etc., can also be part of the legal framework governing a BOT infrastructure project.

II.2. The phases of a BOT project

The case of a railway project can illustrate the BOT-concept and its application. In the first phase a letter of intent is signed by the local railway authorities (agency) and a group of potential private sponsors, followed by a detailed feasibility study of the proposed railway project.

In the second phase a project company is established with the following shareholders: A consortium of construction and equipment companies, some domestic and foreign commercial banks, IFC and The National Railway Agency.

In the third phase the Implementation Agreements between the Project Company and the Railway Agency is signed as the basis from which the other project agreements are developed and signed.

The fourth phase is the raising of funds, where the lenders are banks and the borrower is the Project Company.

The construction of the railway is phase five.

Phase six covers the operation period when therailway is run by the Project Company or its operator, and when the company expects to have a return from the railway fares, which covers its debts, operating costs and dividends to the shareholders.

Phase seven is the end of the operation period when the shares of the Project Company is transferred to the National Railway Agency, which continues the operation of the railway. Hence the term "Build-Operate-Transfer".

III. FIELDS OF APPLICATION – RECENT DEVELOPMENTS

The BOT concept is not a new financial mechanism. Variations on the BOT approach, often known as "concessions", have been in use for a long time in European industrial and mining sectors, especially France, Germany and the Scandinavian countries.

More recently, various models of project financing with BOT characteristics have been applied to infrastructure projects as different as the large EURO-Channel Tunnel and Great Belt Tunnel projects in Europe, power plants in the United Kingdom, United States of America and Greenland, as well as projects in the petroleum industry. The capital intensive and high risk North Sea projects of the Norwegian sector have all been successfully financed, built and operated by private sponsors and are now in the process of being gradually transferred to a government agency. During the BOT process, national technology and skill has been developed to a fairly high and competitive level.

From the early 1980's the BOT-concept has been

introduced in a number of developing countries as an alternative way to finance infrastructure projects. Such projects include road projects, power plants, port facilities, telecommunications, industrial estates, water supply and treatment systems, airports, metro railway systems, etc.

A pressing need for infrastructure facilities as a condition of economic growth in many developing countries, the third world debt crisis and the present trend to develop the private sector have been cited as reasons for the interest in the BOT concept in some developing countries. However that may be, let us have a look at some of the advantages and constraints of the BOT-concept as a technique of financing infrastructure projects in the developing world.

IV. SOME ADVANTAGES OF THE BOT CONCEPT: PROBLEMS AND CONSTRAINTS

IV.1. Advantages of the BOT Concept

A developing country might adopt the BOT concept with several objectives in mind. Among these are:

- It contributes towards expediting the construction and improvement of much needed infrastructural facilities which would otherwise not have come onstream and whose absence or delay would constrain economic development. In other words: if a developing country is not able to finance its needed infrastructure on the basis of budgetary means or sovereign borrowings, or prefers to use its resources for other needs, such as health and education, the BOT concept is an option to be considered.

- It attracts foreign capital to the country, both equity and loan.

- Since the borrower is a private company, it shifts the debt burden from the government to the private sector – a key feature of the BOT concept. Provided the loans are made without direct government guarantee, it therefore does not appear as a public sector debt.

- It provides credibility. The willingness of experienced private sponsor companies to finance, build and operate a project over a long period might be seen as an indication of the project viability. Credit sources and credit terms may for this reason be available to BOT projects which would not be available to public sector projects.

- Incentives for economic performance is another key feature of the BOT approach. If properly structured the BOT concept will provide some very strong incentives to have the project performed contractually or above its minimum expectations. This, of course, will benefit both the Project Company and the host country.

- Project risks are to a large extent shifted from the public sector to the private sector. In addition the close and more direct identification of risk taking with economic reward and return, which is possible through private financing, will encourage careful risk management especially.

- Public sector projects developed in the conventional way have often been marred by delay in completion, serious capital cost overruns and technical failures. Under a BOT concept such risks are no longer a concern of the government, thereby allowing government budgeting to be more accurate.

- A private project company is responsible for operation and maintenance of the project facilities for the operation period. A private company is likely to provide professional and modern management, including cost and operational efficiency to the project.

- The involvement of private sponsors in a BOT project over an extensive operation period may promote continuous transfer of technology and know-how through the project and hence – by transfer to the government. A BOT project should also include a staff training programme to have trained local staff in all important positions at the end of the operation period.

- It allows the government to establish private benchmarks to measure the efficiency of similar public sector projects and thereby overhaul established and conservative practices in managing infrastructure facilities.

- If it is the political and economic goal of a government to increase the role of the private sector in the development of the country, the BOT concept is one way to implement a privatization policy. It should be noted that some investors, like IFC, are only willing to support a infrastructure project in a developing country if the project is run by the private sector.

IV.2. Problems and constraints

The BOT concept however is no magic flute which spirits away all infrastructural and debt crises in developing countries.

Although many BOT projects have been proposed and advertised, for example in Turkey and Pakistan, relatively few projects have actually been implemented.

The application of the concept is a complicated undertaking compared to conventional financing of public sector projects.

The outcome of BOT negotiations are less certain, partly because few criteria or standard solutions on important issues have been developed so far. Project studies and proposals that are not properly prepared

have resulted in increased costs, delays and frustration. Extreme positions on cost of construction, equipment and financing have caused difficulties and protracted negotiations. The need to work out pragmatic risk reward and security structures has not always been properly managed to attract investors. Lack of authority or lack of legislation has delayed negotiations for so long that projects have been abandoned. Legislation and regulations needed to streamline the implementation of BOT projects and to favour private foreign participation in public infrastructure projects does not exist in most countries.

Indeed, there are many problems and bottlenecks to be overcome before a BOT project gets under way. Those BOT projects which have proceeded to the conclusion of project agreements seem, however, to have been successfully implemented and are apparently operating well. Such projects include road and bridge projects, water supply and treatment systems and power plants.

V. SOME CRITERIA FOR THE SUCCESSFUL APPLICATION OF THE BOT CONCEPT

V.1. A stable and supporting political environment

Political stability in the host country is a pre-condition for any BOT project. Private sponsors will not invest substantial amounts of money and expertise in a BOT project if they cannot count on political stability over the proposed operation period.

The private sector's interest in financing BOT infrastructural projects is considerably strengthened if the host government states a preference for a general privatization policy that allows certain infrastructural sectors to be privately owned and operated and adopt policies for the protection of private foreign investment. Political risks, including currency and foreign exchange risk, must be addressed as part of a privatization policy.

Governments should also convince private sponsors and lenders of their commitments to conclude BOT deals within a reasonable time.

V.2. The supporting legal and administrative environment

In the absence of legislation for private participation in public sector projects, numerous approvals, permits, licences, etc., from government agencies and local authorities are essential for the development and operation of a BOT project. In some cases even time consuming legislation in the national parliament has been required to implement a BOT project.

The host government must therefore provide a competent administrative team with decision making authority to assure and expedite the passage of necessary planning approvals, permits and regulations throughout the operation period. The host government must also ensure that approvals, permits, licences, etc., will be granted in a fair and objective manner, based on laws and regulations which are ascertainable at the outset of the project development.

A general legislation to adopt a suitable policy framework for private sector investment in public sector projects, might however streamline the development of BOT projects considerably.

V.3. The financial viability of the infrastructure project within a BOT structure must be shown to potential equity investors and the lenders

A feasibility study must conclusively demonstrate that the project is technically feasible and financially and economically viable. The study must show an assured and reasonably certain source of revenue over the projected operation period, sufficient to cover the debt and operating expences and to provide a fair rate of return for equity investors. The cash flow projections must be sufficient to service any debt contemplated, provide for cash needs, pay operating expenses and still provide an adequate cushion for contingencies.

Assumptions used in the feasibility study must, of course, be realistic. The feasibility study can be conducted by a government agency, the bidder or an outside consultant. The study will reflect the professional ability of the government and the degree of seriousness the government assigns to the project.

V.4. A BOT project must have a satisfactory economic incentive for the private sponsors

The private sponsors should be entitled to a return commensurate with their long-term project risk if they succeed in meeting the BOT projects economic and contractual objectives. The host government should always remember that there is no better incentive for the success of a BOT project than to give the private sponsors the possibility of an attractive return on their investment. Potential lenders certainly want to make sure that the project has a satisfactory economic incentive for the Project Company.

V.5. Assurance of logistical support – at a cost consistent with the financial projections

In most BOT projects host governments will provide the project site, energy supplies, supplies of raw materials and building materials, adequate communications, etc. Such logistical support must be assured throughout the whole operation period, and at a cost consistent with the financial projections. A BOT project might fall into serious financial trouble if the project agreement fails to protect the Project Company against rising logistical costs.

V.6. An efficient risk allocation: pricing of risks

At all stages BOT infrastructure projects are exposed to risks, some of which can have serious consequences for the project.

The risks are normally divided into time frames in which the risk exposure assume different characteristics. The engineering and construction phase, the test period or start-up phase and the final operating phase, are the traditional time frames. A wide range of safeguards and undertakings by different contractors and contracts, are used in each time frame to handle the risks.

It is advisable to address the risk exposure problems at an early stage of the BOT proceedings. What tends to happen is that when the project risks have been identified, the private sector is so concerned to reduce its exposure risks and the host government so concerned to transfer all risks to the private sector, that the parties are unaware of how much the project in its entirety is paying for a particular risk allocation.

V.7. A fair and objective bidding procedure

A private company cannot be expected to invest considerable time and resources to prepare a BOT project if the process for rewarding proposals is not reasonably orderly and based on normal competitive criteria. Lack of integrity, or too much shopping around after the initial bids, might have hurt the credibility and thus the BOT perspectives of at least one country considerably.

V.8. Selection of experienced and reliable sponsors and operators

It is common-place but very important that the experience, financial strength and good reputation of the private sponsors be well established. Lenders to a BOT project seem to be extremely concerned about the choice of sponsors and their ability to manage and support a BOT project. The contract in a BOT project should therefore not be awarded on the basis of the lowest bid unless the low bidder satisfies this criteria.

Lenders also seem to prefer that at least one of the sponsors has the technical expertise to operate the BOT facility. If, alternatively, an independent company is employed to operate the facility, the operating agreement must be structured to provide the operator with strong financial incentives to achieve the guaranteed performance.

V.9. Adequate equity contribution and assurance of commitment

Attracting an adequate amount of equity is one of the key issues of a BOT-project. Normally the long term debt/equity ratio varies from 90:10 to 60:40. Governments and lenders will require the private sponsors to have a sufficient financial interest in the project throughout the operation period or life of the loan (e.g. a minimum paid-up capital in the Project Company), so that it will be difficult for the sponsors to abandon or ignore the BOT project. Sponsors of BOT projects are often international construction companies. Such companies are constantly seeking new opportunities. Should one of their investments not work as well as expected, the temptation to neglect the project in order to concentrate on a new one, could be strong. Governments and lenders should not give the sponsors that option.

It is also of particular concern to governments and lenders that the shareholders agreement contains satisfactory provisions on transfer of shares, obligations of shareholders to each other, etc.

V.10. Independent partners in the Project Company in case of conflicts of interest

As noted, international construction companies and suppliers of equipment, machinery, etc., have a natural business interest and ability to promote BOT infrastructure projects. Their dual role of sponsors and contractors, however, presents the host government (and the lenders) with the problem of handling the resulting conflicts of interest.

Equity participation by the host governments or by "independent" private investors not otherwise engaged in the projects, an obligation for the shareholders to appoint at least one government nominee to the board of the Project Company or the appointment of an independent engineering financial consultant to the board, are mechanisms to reduce the very real concern on conflicts of interest.

V.11. Adequate insurance arrangements

Adequate insurance coverage, including assignment of relevant insurance policies to lenders, must be available both during the construction phase, the start-up phase and the operation phase of the project. An uninsured casualty loss can be a disaster for all concerned.

Note that the traditional industry insurance policies, including standard business interruption insurance is not fully appropriate for insuring a BOT project.

V.12. Anticipated default arrangements and safeguards

One of the challenges of developing a BOT project is to provide adequate security to the lenders under a project financing concept. If the Project Company defaults the lenders will have no recourse to the shareholders or the government. Few lenders will consider security in a partly built road in Greenland or in a slightly defect space rocket system as adequate.

Various techniques designed to anticipate or prevent companies' default should therefore be included into the BOT arrangement with the support of the host government. Such techniques might include off-shore escrow accounts, assignment of the benefits of various contracts (e.g. turnkey contracts with performance bond, insurance contracts, suppliers warrantees, etc.) to the lenders and the right to take over and exercise the right of the Project Company well in advance of a default under the loan agreements.

V.13. The operation period: buy-out terms

The operation period must be for a fixed term sufficient to pay back the project debt and equity investment with a reasonable return. The project agreement should contain satisfactory provisions on extension of the operation period, for example if the projected return to the sponsors have not been reached because of the host government's default on its contractual obligations.

The host government might reserve a right to buy out the private sponsors before the end of the operation period or to adjust certain terms in the project agreement. This touches on the very tricky problem of windfall profits.

V.14. A careful structuring and drafting of the contractual framework.

The contractual framework governing a BOT project is very complex. The development and integration of the legal documents and tailoring their terms and conditions to meet the objectives of the host government while satisfying the need of the sponsors and lenders. is a time-consuming and sophisticated challenge with many pitfalls along the road. That the host government must use qualified legal counsels on this journey goes without saying. Normally it is advisable that the basic terms and conditions of the project agreement are outlined as early as possible in the BOT process, preferably in the offering proposals from the government, subject of course to negotiation and clarification.

At all stages and at all contractual levels it is essential to avoid surprise terms in the contracts.

These are some of the issues which have to be satisfactorily resolved if a BOT project is to move beyond the planning stage.

Discussions of the BOT concept sometimes tend to focus on large and complex infrastructure projects. This might lead one to the conclusion that the BOT concept and the criteria discussed in this paper, have little relevance for small, ordinary infrastructure projects. This, however, is not the case. The BOT concept can be used to finance and operate a major channel tunnel project as well as a minor road project. Indeed, a government should be cautious about selecting a very large scheme as its first BOT project.

VI. SOME CONCLUDING REMARKS

The BOT concept is a relatively new formula for financing infrastructure projects in developing countries. Being a new concept its advantages and limitations - and criteria for a successful development - has not always been well understood or adopted.

A few unsuccessful and very expensive attempts to negotiate BOT deals in some western parts of Asia hardly deserve to be canonized as typical of the BOT approach. As noted earlier, BOT projects have been successfully implemented and are operating well in other parts of Asia, as has been the case in Europe and the United States of America.

For countries with a reasonable credit worthiness and willing to apply financial, administrative and legal criteria as outlined above, the BOT concept appears to be a workable option to conventional financing and operation of infrastructure projects.

The implementation of a BOT project is certainly more complicated and time-consuming than the more traditional approach. Mainly because all project financing tend to be complex.

In some cases the cost of borrowing funds may also be somewhat higher than the financing of infrastructure projects with sovereign borrowings. However, the advantages of the BOT concept might justify the problems in structuring, financing and operating these projects. A government considering a BOT infrastructure project should also learn from financing methods with BOT characteristics used in other industries. Some industries, such as the petroleum industry, have been successfully using various project financing methods with BOT characteristics for many years. Despite important differences it appears that some techniques used in the petroleum industry, as for instance technology transfer, have not yet been fully exploited in BOT infrastructure projects in the developing countries. The private sponsor's commitment of substantial equity and operational management to the host country over a long period in some fields provides an excellent platform for technology cooperation between the sponsors and the host government.

All new creations have teething troubles. As the structures, issues and potentials of BOT projects are better understood, i.e. systematically identified and analysed, and guidelines for solution of common issues are developed, the BOT concept should become somewhat easier to implement and a useful alternative tool for financing needed infrastructure projects in the developing world.

LEGISLATION

MEXICO

THE NEW LEGISLATION ON INTELLECTUAL PROPERTY

(An elaboration of the law and its essential provisions based on a report received from the Secretariat of Commerce and Industrial Promotion of Mexico.) (The text of the Law itself will be published in the next issue of the TIES Newsletter.)

1. Introduction

In 1990 President Carlos Salinas de Gortari sent two initiatives to the Mexican Congress to modernize the legislation on intellectual property. One initiative consisted of an entirely new bill for the protection and encouragement of industrial property, i.e., the protection of exclusive rights regarding inventions and commercialindications by patents, utility models, industrial designs, trade secrets, trademarks, commercial names, apellations of origins, etc. The other initiative consisted of amendments to the existing copyright law, to upgrade the legislation related with authorial rights, and other neighbouring rights such as those of the procedures of sound recordings.

The new act on industrial property came into effect as of 28 June 1991, the day after its publication in the Official Gazette. The reforms to the copyright act will come into effect in the first day of August, exactly thirty days after their official publication.

The new legislation is in line with the overall economic and legal changes that have been occuring in Mexico since the mid-eighties, with the purpose of creating a more competitive market environment. The fundamental purpose of this legislation is to offer Mexico a legal regime for the protection of intellectual property in terms comparable to those existing in industrialized countries so that individuals and firms in Mexico, – be the national or foreign – may enjoy similar protection to that available to their competitors in other countries.

The improved legislation on intellectual property gives more legal certainty and security to investment in Mexico, as exclusive rights for the industrial and commercial development of new processes and products are strongly protected. This legislation will facilitate the transfer of technology and will stimulate local research and development efforts with the aim of improving productivity and quality in all industries.

The new legislation follows the mainstream of international law on intellectual property protection, as reflected in the principal international treaties in this area. The work done in the World Intellectual Property Organization (WIPO) and in the General Agreement on Tariff and Trade (GATT) in recent years has been a very important input to both pieces of legislation.

2. The new law for the protection of industrial property

The Law for the Encouragement and Protection of Industrial Property contains numerous elements which substantially improve the previous Mexican legislation onthis matter. Among the highlights are the following:

(a) Patents will have a term of 20 years from the filing date and will be available for all processes and products, including chemicals, alloys, pharmaceuticals, biotechnology and plant varieties.

(b) Inventions already patented in other countries that have not yet been produced or imported to Mexico will qualify for a national patent. The patent will be granted to the original applicant of the patent abroad, provided he/she presents an application in Mexico in the year following the date the new act comes into effect. This patent protection will be available in the case of chemicals, pharmaceuticals and biotechnological processes and products.

(c) Compulsory licences due to lack of use of patented inventions are largely restricted to exceptional circumstances. Importation into Mexico of the patented product, or of the product obtained from the patented process, will constitute use and therefore prevent any compulsory licensing.

(d) Industrial and trade secrets are protected. Their unauthorized disclosure by any person previously warned about the confidentiality of the corresponding information constitutes a criminal offense.

(e) Small inventions, which are not patentable due to insufficient inventive merit, will still qualify for legal protection as utility models. The term of protection will be 10 years from the date of filing. Similarly, industrial designs will enjoy protection against unauthorized imitation for 15 years.

(f) Trademarks are registered for goods and services without any requirement of previous use in com-merce. Registration of tridimensional and collective trademarks is also allowed. The term of protection is 10 years from the date of filing. An affidavit regarding no

interruption of use for periods exceeding three years, must be submitted upon renewal of registration.

(g) Commercial names can be protected throughout the entire national territory for a renewable term of 10 years from the date of publication.

(h) Franchising agreements comprising the licensing of trademarks and commercial names, together with the transmission of technical and managerial know-how, are subject to a very simple procedure of registration with minimal disclosure requirements to inform the franchisee. Neither these agreements, nor common licensing or assignment agreements in general, require any bureaucratic approval upon registration.

(i) Appellations of origin are protected in accordance with the Treaty of Lisbon.

(j) Administrative procedures are largely simplified so as to make the granting of patents and the registration of trademarks expeditious and transparent. Cooperation of the Mexican Patent and Trademark Office with its counterparts in foreign countries is envisioned in order to reduce the burden of local examinations already performed in other countries, as in the case of patents.

(k) Judicial procedures are also improved, so that remedies and sentences may be provided rapidly and effectively. Sanctions and penalties for administrative and criminal offenses related to industrial property are strengthened to discourage illicit acts and unfair competition. Damages can be claimed regardless of the application of these sanctions.

3. Reforms to the Copyright Act

In parallel to the legal changes pertaining to the matters of industrial property, several modifications of importance are being made to improve the Copyright Act. Among the most significant ones are the following:

(a) Computer programs will be protected against unauthorized reproduction. The term of protection will be 50 years.

(b) Producers of phonograms are granted neighbouring rights to those of the authors, so as to improve their legal capabilities to authorize or oppose the reproduction or rental of phonograms.

(c) Public performance is explicitly defined, so as to avoid any confusion.

(d) Sanctions and penalties against infringements and criminal offenses are increased, so as to discourage illicit acts and unfair competition. Damages can be claimed regardless of the application of these sanctions.

4. Enforcement

Strong actions to combat illicit acts and unfair competition in relation to intellectual property are handled on a day to day basis.

Upon the request of interested parties, inspections are performed to establishments throughout the country where counterfeited goods are suspected to exist and, in accordance with the law, all counterfeits are immediately confiscated as a precautionary measure or injunction. Whenever counterfeits account for more than 30 per cent of the merchandise found in the inspected establishments, the latter are closed down.

This sort of measure has been applied in defense of many registered trademarks. Outstanding examples are: Levi's, Louis Vuitton, Bacardi, Reebok, PanAm, etc.

In-depth investigations are also performed in the course of legal demands presented in relation to infringements of rights in the case of patents, industrial designs, etc.

Similar actions are performed also in the case of copyright. For example, illegal copies of videocassettes and music tapes are seized and the owners of the establishments where they are found are presented for justice, where they are sanctioned with monetary and penal measures.

The Salinas Administration strongly believes that effective protection to intellectual property is essential for the modernization of industry and commerce.

SENEGAL

For the interest of our readers, we reproduce a decree concerning approval of license contracts, assignments and transfers of patents and marks, utility and ownership models in Senegal.

DECREE ESTABLISHING PROCEDURES FOR PRIOR VERIFICATION AND APROVAL OF CONTRACTS FOR THE TRANSFER OF INDUSTRIAL PROPERTY RIGHTS

The President Of The Republic,

CONSIDERING the Constitution, and particularly Articles 37 and 65 thereof;

CONSIDERING the Agreement on the Establishment of the African Intellectual Property Organization revising the Agreement on the Establishment of the African and Malagasi Industrial Property Office, signed at Bangui on 2 March 1977;

CONSIDERING Law No. 79-36 of 11 April 1979 authorizing the President of the Republic to ratify the

Agreement on the Establishment of the African Intellectual Property Organization;

GIVEN the views expressed by the Supreme Court at its meeting on 6 October 1988;

CONSIDERING the report of the Minister for Industrial Development and Artisanal Production;

DECREES

Article 1. The procedures for prior verification and approval defined in Article 31 of Annex I, Article 25 of Annex II and Article 30 of Annex III to the Agreement on the Establishment of the African Intellectual Property Organization revising the Agreement on the Establishment of the African and Malagasi Industrial Property Office are established by the provisions of the present Decree.

Article 2. Licence contracts, assignments and transfers of patents and mark utility and ownership models, including amendments or renewals thereof, shall, on pain of invalidity, be submitted for prior verification and approval to the Minister responsible for Industrial Property:

- If they involve payments abroad;
- If they are granted or obtained by individuals or bodies corporate that are not of the nationality or are not established in the national territory of one of the States members of the African Intellectual Property Organization.

Article 3. Applications for approval must be lodged with the Ministry responsible for Industrial Property within 12 months of the conclusion of the contract.

The application must be lodged by the party to the contract that is established in Senegal. Should there be several parties in this situation, they shall be jointly and severally responsible for lodging the application and they must lodge it jointly.

Article 4. The dossier of the application for approval shall be prepared in five copies and shall include the following documents:

- A certified copy in the French language of the original of the contract. In the case of amendment or renewal, a certified copy of the previous contract must be attached;
- A dispatch form corresponding to the specimen attached to the present Decree;
- Any other documentation providing additional information.

Article 5. Information and documents furnished pursuant to the present Decree shall be considered confidential.

Article 6. The verification referred to in Article 1 shall consist in verifying that the contracts contain no clauses imposing upon the assignee or transferee any restrictions not deriving from the rights conferred by the patent, utility model or mark or unnecessary for the safeguarding of these rights, including:

- Clauses requiring the licensee to pay royalties for an invention, utility model or mark that is not exploited or used, or to pay a large proportion of the royalties before their exploitation or use;
- Clauses requiring the licensee to purchase raw materials, intermediate goods or equipment supplied by the assignor, unless it is impossible otherwise to ensure the manufacture or the quality of the goods to be produced;
- Clauses having the effect of preventing the export of products manufactured under the patent or utility model or of products manufactured under the mark to some or all of the countries members of the African Intellectual Property Organization or which authorize such export only upon payment of additional royalties, or which limit the ability of the assignee to compete in the markets of these States.

In the case of a mark licence contract, the verification shall consist in verifying also the existence of relations or arrangements between the registered owner of the mark and the licensee which will ensure effective control by the registered owner of the quality of the products to which the licence applies.

Article 7. The Minister responsible for Industrial Property may require the contracting parties to provide any explanations or other documentary evidence deemed useful.

No decision denying approval may be issued without the party or parties that filed the application having been heard. The Minister responsible for Industrial Property may give to the parties detailed information concerning the changes they must make in their contract for it to be approved. In such case he shall set a time-limit for submission of the amended contract.

Article 8. The contracts referred to in Article 1 shall be approved by decision of the Minister responsible for Industrial Property following consultation of the Minister responsible for Economic Affairs and Finance or of any other Minister concerned, as appropriate. The contracts shall be recorded in a special register opened by the Minister for this purpose.

A copy of the decision approving a contract for obtaining or assigning patents, utility models or product or service marks shall be transmitted by one of the contracting parties to the African Intellectual Property Organization for registration in the appropriate special register.

Decisions to approve or deny approval shall be com-

municated to the contracting parties within three months from the date of registration of the dossier.

Article 9. The Minister for Economic Affairs and Finance and the Minister for Industrial Development and Artisanal Production shall be responsible, in their respective fields, for the implementation of the present Decree, which shall be published, together with its annex, in the Journal Officiel.

Done at Dakar on 17 October 1989
(Signed) Abdou Diouf

REPUBLIC OF SENEGAL, MINISTRY OF INDUSTRIAL DEVELOPMENT AND ARTISANAL PRODUCTION

ANNEX

APPLICATION FOR APPROVAL OF THE TRANSFER OF INDUSTRIAL PROPERTY RIGHTS

( )

(Box reserved for the Industrial Property and Technology Service)

Application number (to be referred to in all correspondence):----------

Date of application: ---------- ----------

I. Application

The undersigned,

(Name or company name)

(Address)

(Telephone, telex or cable address)

requests approval of the contract or instrument concluded with:

(Name or company name)

(Address)

(Telephone, telex or cable address)

II. Type of contract or instrument 1/ 3/

Licence

Assignment or transfer

Other (specify):

III. Purpose of the contract or instrument

Description of purpose of the contract or instrument: 2/ 3/

Document attached to the application 1/ 3/

..... copies of the contract or instrument

other documents, one ..... copies

(briefly describe nature of the documents)

Signature of the applicant(s): Place and date:

1/ Place an X in the appropriate box.

2/ Patent, utility model or mark. In the case of titles issued by the African Intellectual Property Organization, specify the number and date of issue.

3/ Should any part of this application form not contain sufficient space, use an additional sheet and specify to which part of this form the information it contains applies.

Transmitted by: Mr. Malick Sow, Conseiller Technique Aupres du Ministère du Developpement Industriel et de l'Artisanat, Senegal

RECENT PUBLICATIONS

PI/109. Guide to training opportunities for industrial development 1992.

PI/110. UNIDO industrial training offer programme 1992.

ID/WG.522/1(SPEC.). Study on trends in technological development in the petrochemical industry.

ID/SER.0/11. General studies series. Technical criteria for the selection of woodworking machines. Sales No. UNIDO.92.1.E.

ID/378(ID/WG.514/7). Fourth consultation on the capital goods industry with emphasis on machine tools. Prague, Czechoslovakia, 16-20 September 1991. Report.

PI/111. Blueprint for clean industry. Conclusions and recommendations of the ESID Conference.

ID/379 (ID/WG.518/3). Regional consultation on the fisheries industry for Asia and the Pacific Island countries. Vienna, Austria, 2–6 December 1991. Report.

ID/SER.M/30. Industry and Development No. 30. Sales No.: E.92.III.E.1.

ID/377. African industry in figures 1990. Sales No.: F.91.III.E.17.

ID/SER.0/2. Value analysis in the furniture industry. Sales No.: UNIDO 92.2.E.

ID/SER.0/3. Production management for small- and medium-scale furniture manufacturers. A manual for developing countries. Sales No.: UNIDO 92.3.E.

LES NOUVELLES

As in previous issues of the *TIES Newsletter*, we take pleasure in reproducing the table of contents of the most recent issue of *Les Nouvelles*, the journal of the Licensing Executives Society.

Les Nouvelles, Volume XXVII, No. 1, March 1992