



**TOGETHER**  
*for a sustainable future*

## OCCASION

This publication has been made available to the public on the occasion of the 50<sup>th</sup> anniversary of the United Nations Industrial Development Organisation.



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

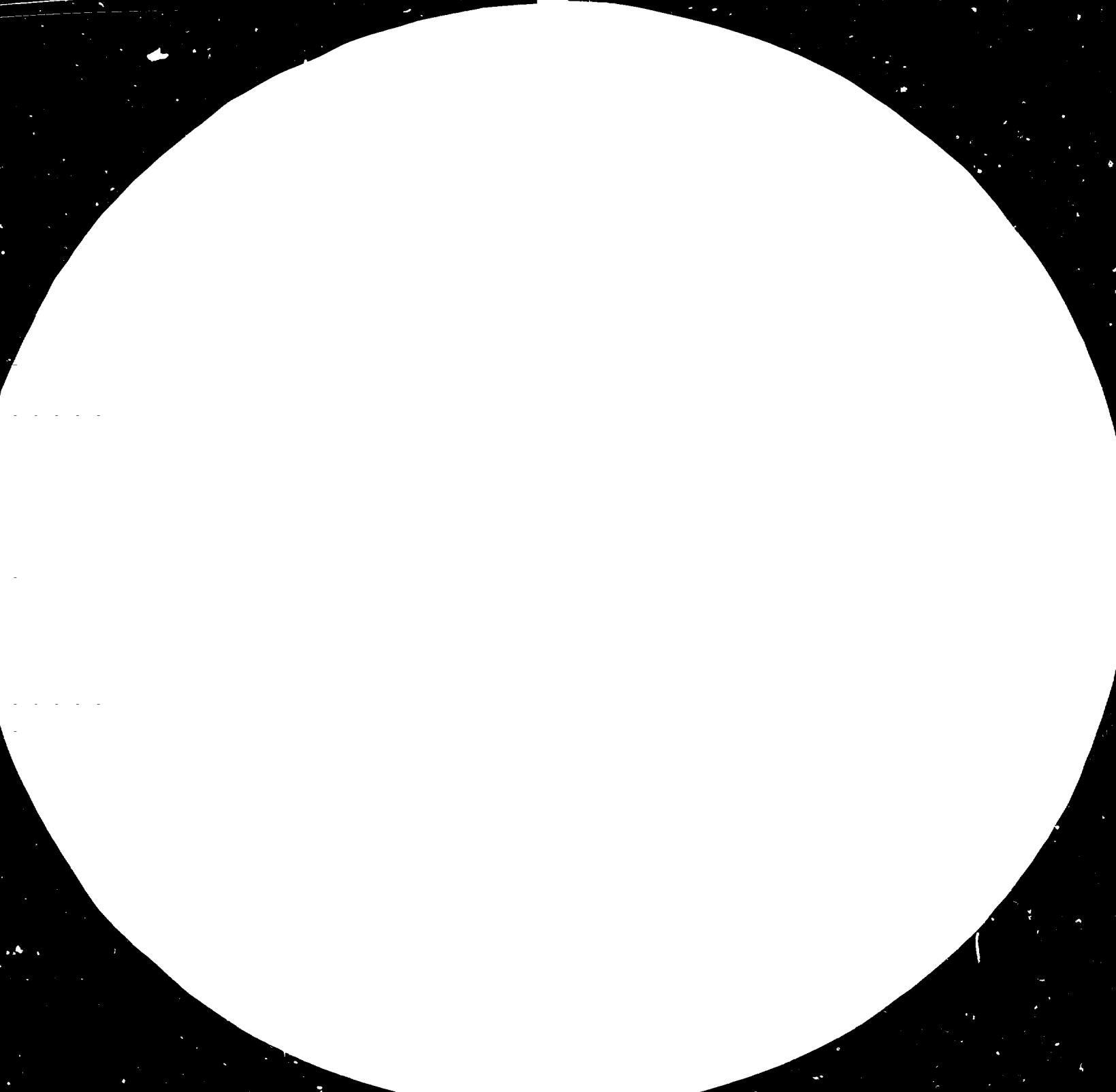
## FAIR USE POLICY

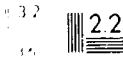
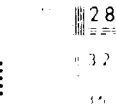
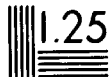
Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

## CONTACT

Please contact [publications@unido.org](mailto:publications@unido.org) for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at [www.unido.org](http://www.unido.org)





Microcopy Resolution Test Chart

Resolution Test Chart, NBS 1010-A, 1963 Edition



# NEWSLETTER

## TECHNOLOGICAL INFORMATION EXCHANGE SYSTEM

Issue Number 20

12731

March 1983

Dear Reader,

Following the recommendation of the recently concluded TIES meeting in New Delhi, UNIDO is exploring the preparation of a periodic review of technology transfer trends in the developing countries.

Valuable information available from the member registries including the collection of information by UNIDO could be put together for the benefit of a wider audience. The monitoring system which will gradually emerge will be guided by available information on North-South and South-South technology flows including the impact of legislation on such flows. In addition, sectoral trends could be analysed with respect to royalty rates, legislation and the impact of new technologies. A small group of experts will be meeting in July of this year to discuss this subject in order to define the scope of such a monitoring exercise.

We are already receiving valuable suggestions from TIES members on this subject. We would also be most pleased to receive suggestions from our readers with respect to the overall scope, type of information to be collected, etc.

G.S. Gouri  
Director  
Division for Industrial Studies

### *UNIDO activities*

UNIDO SPONSORS HIGH-LEVEL PREPARATORY MEETING FOR UNIDO IV

a) Forum on technological advances and development in Tbilisi, USSR, from 10 to 15 April 1983

There is a need to sensitize policy-makers, senior officials and in certain respects the scientists and technologists in developing countries as to the implications of the technological advances that have just emerged or are in the offing. Such a sensitization, based on an indepth examination of the potentials and implications of the technologies from the developing country viewpoint, would enable a more conscious and rational choice of technologies and the formulation of necessary industrial and technological policies together with the planning of requisite industrial and technological capabilities in order to apply such technologies wherever appropriate.

With these needs in mind, UNIDO initiated a programme of technological advances in 1980. Its results were reported to the Industrial Development Board of UNIDO at its fifteenth session and the Board took note of the work done with appreciation. A brief note on the progress made in the technological advances programme was mentioned in the TIES Newsletter No.15.

The activities have underlined the importance of developing countries to formulate the necessary policy responses to technological advances. Detailed consideration of the policy actions to be taken has become particularly necessary in the context of the Fourth General Conference of UNIDO (UNIDO IV), scheduled for 1984, which will be take place in a period of economic uncertainty and dynamic technological change. In evaluating the prospects of industrialization by developing countries in this changing context and recommending policy actions for the future, the conference might pay particular attention to technological advances and their relevance to development. Bearing this in mind, an International Forum on Technological Advances and Development is proposed to be held as an important preparatory meeting to UNIDO IV.

An Expert Meeting Preparatory to the International Forum on Technological Advances and Development was held at Moscow, USSR, from 20 November to 3 December 1982. It concluded that the development and application of new technologies by developing countries to meet their needs and conditions is feasible and may not necessarily involve heavy investment in human and financial resources. The opportunity cost of overlooking the technological advances is high both in terms of potential benefits forgone and in terms of the acquisition of inappropriate technologies and the aggravation of their technological dependence. There is an urgent need for developing countries to take policy actions in view of the lead time required for development of the requisite technological capabilities and to avoid expensive and inappropriate imports of products and technologies.

The Forum has been designed taking into account the deliberations of the preparatory meeting and will:

- Examine the potentials and limitations of selected technological advances for the industrial and economic development of the developing countries, in particular their industrial development;

Compiled by the Technology Group of UNIDO

P.O. Box 300, A-1400 Vienna, Austria

- Consider the implications of technological advances in their interaction with one another and their impact on industrial and other sectors;
- Identify ways and means by which specific industrial and technological capabilities may be developed by the developing countries in order to be able to avail themselves of the benefits of the advances, where appropriate and feasible;
- Identify the lines of international action and in particular action by UNIDO;
- Make suggestions and recommendations for consideration by UNIDO IV.

The discussions will be based on an in-depth examination of five selected areas of technological advances, namely, microelectronics, genetic engineering and biotechnology, petrochemicals, renewable energy with specific reference to biomass and solar photovoltaic energy, and new materials and technology.

#### b) Industrial strategies and policies, Lima

The Fourth General Conference of UNIDO (UNIDO IV) is scheduled to take place at a time when the impact of the current deceleration - and in many cases absolute decline - in industrial production and employment levels as well as in international flows of trade and finance may have become more serious than at the present. This in turn may have a marked impact not only on the social and economic fabric of all countries but also on the nature of international economic and industrial co-operation. It is therefore likely that global industrial development in the 1980s will be characterized by a new and changing set of parameters.

These changing international conditions are dramatically affecting the prospects for industrial development in the developing countries. Moreover, various policies and measures taken by individual countries - such as specific industrial, employment, finance and trade policies and an increasing resistance on the part of developed countries to structural adjustment - compound the difficulty of planning and managing the process of industrialization. Developing countries are faced with diminishing resource flows from the developed countries, intense competition for manufactures on shrinking markets and the need to participate in the rapid technological development. The current fluid situation has made the existing structures of industrial production in developing countries vulnerable and raised the question of the relevance to the future of industrial strategies pursued and overall progress so far achieved by the manufacturing sector in the 1960s and 1970s.

Indeed, for most developing countries, the issue of establishing new industrial capacities is increasingly being overshadowed by the problem of adjusting existing production structures to the new and emerging challenges. These challenges and adjustment pressures hit various categories of developing countries differently. All countries are, however, faced with the task of evolving new concepts for development and international co-operation.

The occasion of UNIDO IV will be used to review past achievements of developing countries - especially since the mid-1970s - in the light of the targets and objectives set at the Second General Conference of UNIDO in Lima in 1975 and to identify emerging challenges and perceptions of national policy-makers for the future. This review may enable an assessment of the changing conditions for the formulation of industrialization strategies and policies in the developing countries and for the prospects of achieving sustained industrialization in the 1980s and the 1990s in these countries.

Specifically, UNIDO IV might enable a thorough review of the features and implications of the current international situation and of the new configurations which seem to be emerging in terms of production, finance, technology and trade. The Conference may enable a joint assessment of the effects of new national policies on the international process of restructuring and the outlining of new approaches for developing countries to encounter the challenges and enhance their socio-economic development through industrial growth based on indigenous resources nationally, regionally, and globally. The consideration of industrial strategies and policies is therefore directly relevant to the Conference and of crucial importance to items throughout the agenda.

In preparing for UNIDO IV, it was considered essential that UNIDO, jointly with policy makers from developing and developed countries and international experts on industrial strategy and policy, undertake detailed analyses designed to serve as a basis for the deliberations at UNIDO IV. One major element in these preparations is the meeting on strategies and policies, these deliberations being designed to highlight issues that will be of the greatest importance for UNIDO IV. Similar meetings preparatory to UNIDO IV are being organized in regard to technological advances, human resource development, energy, and economic co-operation among developing countries.

The aims of the high level preparatory meeting to be held in Lima for one week beginning on 18 April are to allow international policy makers and experts from developing and developed countries to analyze past strategies and policies, to review challenges generated by the current international crisis and possible responses for industrialization in the developing countries, and to identify possible reorientations of, and new opportunities for, the long-term industrialization process in the developing countries.

On the basis both of the documentation prepared for the meeting and of the discussions held at the meeting, it may be possible to identify features and directions of strategies and policies for the 1980s as they emerge in the perceptions of national policy makers.

## *Registry news*

### CHINA: MACHINZ BUILDING MINISTRY MERGING

The First Ministry of Machine Building, China's active TIES participants, has recently been renamed Ministry of Machine Building. An

important step towards further nationalization of the People's Republic of China procedures for the importation of technology has been the merger of the Foreign Affairs Bureau of the Ministry with the China National Machinery and Equipment Import and Export Corporation (CMEC). As a result of this merge the active TIES nucleus has been shifted to the Import Department of CMEC. We therefore take leave of Mr. Chen Renhuang who has been co-ordinating the exchange of information with other TIES members over the past years as he has been transferred to the Marketing Department of CMEC.

#### VENEZUELA: THE SUPERINTENDENCIA DE INVERSIONES EXTRABHERAS (SIEX) SEMINAR IN TECHNOLOGY NEGOTIATIONS

SIEX organized a seminar on the negotiations and drafting of technology transfer agreements on 14 and 15 March to which representatives from both the private and public sectors were invited to discuss the most pertinent issues involved with a variety of senior Government officials. Particular attention was given to the role of SIEX in the process of acquisition of technology and other Government institutions such as the Investment Fund, the Technology Division of the Ministry of Industry, the National Commission for Research, etc. Most noticeable was the speech of the Minister of Planning on the importance of technology on the planning process. UNIDO was requested to contribute to this highly successful seminar in three areas, namely international legislation on technology transfer, information sources for the selection of technology and on evaluation of technology agreements for which a UNIDO staff member, Mr. Hubert Janiszewski, and a consultant, Mr. Victor Simoes, of the Foreign Investment Institute of Portugal participated.

#### TRANSFER OF TECHNOLOGY TRENDS IN ARGENTINA - 1982

This brief note will deal with the trends observed in 1982 and was prepared by the TIES counterpart in Argentina, INTI. It will analyse the agreements between independent and affiliated companies and will differentiate between agreements for services and those for the manufacture of products, in each instance taking into account the number of contracts, estimated amounts involved, royalties, fees, average duration and cases of retroactive agreements.

#### Number of agreements and estimated total amounts to be paid

During 1982 a total of 296 contracts were registered and/or recorded.

Contrary to the situation in the last four years, during which there was an upward trend in listings, this year the number was relatively small (approximately half). In this connection, it should be recalled that Argentina was experiencing wartime conditions and this led to a decrease in the conclusion of contracts for technology.

The estimated total amount for payment in 1982 was \$US 182,695,556.\*/ which is about 32 per cent of the estimated payments for the same period in each of the last two years. The reason for this decrease is not only the reduction in the number of contracts but also the considerable devaluation of the Argentine peso with respect to the United States dollar.

The number of contracts between affiliated enterprises was 41, i.e. 14 per cent of those registered and these account for 34 per cent of the amounts for payment. The figure for the independent companies is 255 (86 per cent), which is 66 per cent of the amounts concerned. In other words, for 1982 contracting between economically affiliated enterprises was on a notable scale.

#### Agreements for services and for the manufacture of products: prices and periods of validity

In Argentina, 56 per cent of the agreements for the contracting of technology refer to product manufacture, accounting for the payment of 57 per cent of the sums involved, while 44 per cent relate to the provision of services and account for 43 per cent of these amounts.

With respect to service agreements, seven contracts were concluded between affiliated undertakings, the total costs involved accounted for 6 per cent of the whole. In other words, the great majority of contracts concluded were between independent enterprises.

The payments on these contracts are fixed amounts, or else fixed amounts with reimbursable costs. In only six cases were royalties provided for. In one of them a royalty of 23 per cent was stipulated for advertising services and this was effective retroactively. This is the highest royalty, even having regard to the product manufacture agreements. There is another agreement with a 10 per cent royalty for technical assistance services in connection with industrial organization (work factor).

The average amount per contract is \$US 597,000 and the average period of validity is 17 months. Only four contracts are for a period longer than five years. There are 14 contracts of indefinite duration but since the sums involved are limited, this indeterminacy will still be limited. There are 16 agreements with retroactive effect, i.e. they are effective prior to the date on which they were submitted to the Office for the Transfer of Technology.

The average daily fee is \$US 450: the resulting minimum is \$US 60 per day for services in the textile sector and the maximum is \$US 1,560 per day under an agreement relating to services in connection with oil.

In the service agreements, the most common types of collaboration with suppliers are found in consultancies, prefeasibility studies and supervision of assembly (generally including training of personnel).

\*/ The estimated total amounts for payment refer to the entire duration of the contract.

The sectors which most frequently contract for services are the iron and steel industries, industrial chemicals production, machinery, electricity, gas and steam.

Of the 165 agreements relating to product manufacture, 34 (or 21 per cent) were concluded between affiliated enterprises and represent a sum of \$US 60,394,473 (i.e. 58 per cent). In other words, as far as this group is concerned, the agreements between affiliated enterprises are of importance.

The most common form of payment is the royalty (which is stipulated in 90 per cent of the cases), the remainder being a fixed amount or a fixed price per unit sold.

The average royalty agreed upon was 3.4 per cent in 1979 and 1980; in 1981, prior to the present law, it was 3.6 per cent and as from the liberalization of the technology law in Argentina it rose to 3.9 per cent.

In 1982 the average royalty rose to 4.8 per cent, which is a considerable increase. It must be emphasized, however, that in the case of the agreements analysed by the Office for the Transfer of Technology, the average royalty is 3.4 per cent, i.e. the equivalent of the averages for the preceding years.

The upward trend is explained by the cases which are listed below; these have not been evaluated and exceed the limit which was previously stipulated in Law 21.617, namely, 5 per cent.

One agreement	15 per cent
Three agreements	12 per cent
One agreement	11 per cent
Six agreements	10 per cent
Seven agreements	8 per cent
One agreement	7.5 per cent
Two agreements	7 per cent
Six agreements	6 per cent
One agreement	5.7 per cent
<u>One agreement</u>	<u>5.25 per cent</u>

Total: 29 agreements

Of the contracts providing for royalties, there were 29, or 10 per cent, which exceeded the 5 per cent limit.

It should be pointed out that in 1981, 4 per cent of the agreements (both for services and for product manufacture) exceeded the 5 per cent limit. For the year under consideration, on the other hand, 10 per cent of all the agreements exceeded this figure, which is indicative of an upward trend in royalty payments.

As already mentioned, the highest royalty is associated with the advertising services sector.

The other areas in which high royalties are most common are clothing and pharmaceuticals.

The average amount per contract is \$US 600,000 and the average stipulated duration is approximately five years.

The cases in which this period of time is exceeded are as follows:

Three agreements	5.5 years
Two agreements	6 years
Two agreements	7 years
Four agreements	8 years
One agreement	9.5 years
Seventeen agreements	10 years
Two agreements	12 years
Two agreements	15 years
Three agreements	20 years
<u>One agreement</u>	<u>30 years</u>

Total: 37 agreements

These 37 agreements represent 22 per cent of the agreements for the manufacture of products and 12.5 per cent of the agreements all told.

There are 27 product manufacture agreements with retroactive effect; in some cases this figure goes hand in hand with royalties of more than 5 per cent and periods of validity of more than five years.

In the agreements referred to, the most common types of supplier collaboration have to do with know-how and brands. The most significant sectors are the chemical industry and the manufacture of metal products.

On the basis of the data set out above, it may be concluded that, as from the liberalization of the technology law in Argentina, there has been an upward trend in the stipulated royalties and in the contractual period of validity in the agreements which are not evaluated. This upward tendency, originally a feature of non-typical cases, gradually came to represent a considerable - although not significant - percentage. It must be borne in mind that in most of these cases the industrial sectors to which it applies are superfluous.

The results are just the opposite, however, in the agreements which are evaluated since, owing to the action of the Office for the Transfer of Technology, the royalties paid by affiliated companies have been reduced and their periods of validity do not exceed the prevailing averages.

Registration of agreements and estimated total amounts to be paid

	Year	No. of contracts	Estimated total amounts to be paid US\$
Law 19.231 (February)	1972	1,711 automatic registrations	-
	1973	611 registrations	-
Law 20.794 (November)	1974	-	-
	1975	107	54,409,709
	1976	116	32,047,699
	1977	52	16,100,027
Law 21.617 (August)	1977	68	18,839,669
	1978	323	157,934,176
	1979	510	321,196,806
	1980	495	581,890,469
	1981	109	278,692,457
Law 22.426	1981	419	301,241,770
	1982	296	182,695,946

Year	Number of contracts	$\Delta + \%$ Base 1976	$\Delta + \%$ with respect to the previous year	Estimated total amount to be paid	$\Delta + \%$ Base 1976	$\Delta + \%$ with respect to the previous year
1976	116			32,047,659		
1977	120	3.5	3.5	34,939,695	9.0	9.0
1978	323	178.4	169.2	157,934,176	352.8	352.0
1979	510	339.7	57.9	321,496,804	903.2	103.5
1980	495	326.7	- 2.9	581,650,469	1,715.6	80.9
1981	528	355.2	6.7	579,894,227	1,709.5	- 0.3
1982	296	155.2	- 43.9	182,695,556	470.0	- 68.5

	1979		1980		1981		1982	
	% of number of contracts	% of estimated amounts to be paid	% of number of contracts	% of estimated amounts to be paid	% of number of contracts	% of estimated amounts to be paid	% of number of contracts	% of estimated amounts to be paid
Independent companies $\leq 49\%$	82	65	74	51	89	74	86	66
Affiliated companies $> 49\%$	18	34	26	49	11	26	14	34

\* \* \* \* \*

#### TECHNOLOGY PAYMENTS AND PROFIT-SHARING IN PORTUGAL

(This article is based on a paper presented at the TIES New Delhi meeting, document number ID/WG.383.6, by the Foreign Investment Institute of Portugal. It included a critical analysis of the UNIDO method of payment evaluation, published in the TIES Newsletter issue No.17. An abstract is produced hereunder for the benefit of our readers.)

#### Introduction

Portuguese legislative framework concerning payments for technology transfer agreements is rather vague, stating only that the contract shall contain a detailed description of the "type, form and amount of payment envisaged", without providing detailed instructions on the levels and characteristics of payments, as happens in other countries. This framework has shown some advantages, since the Institute has more freedom to analyse and evaluate each agreement, taking into account its merits and shortcomings.

Nevertheless, in its current work, the Foreign Investment Institute has already developed some criteria which are used as guidelines for evaluation. Among those criteria, are for example the type and characteristics of the contract, level of technology concerned, engagement of licensor in the transfer, training programmes, capital linkages between contracting parties, industrial sectors, duration of the agreement and markets to be supplied. As a rule, the Institute has favoured royalties instead of down payments, since they imply an immediate transfer of money from the licensee to the licensor without utilization of the technology in the former's productive activity.

Equity participation of the licensor under license is another element to be regarded in the analysis. Unlike other countries, Portugal allows technology payments between affiliated companies, but the F.I.I. seeks to ascertain

that these payments reflect the provision of real additional technological inputs to the Portuguese affiliate and that these are not excessively high.

Agreement on minimum royalty payments is highly discouraged, because it involves a burden to the development of the contract and also provides the licensor with a guarantee of the receipt of a fixed amount independently of his engagement in the successful development of the contract and of the performance of the technology transferred.

The basis for the calculation of royalties is generally net sales. In some instances, however, the F.I.I. has changed net sales to another basis that is deemed to more adequately reflect the interests of the licensee (or Portuguese economy) in the contract, i.e. local value added, exports or profits.

This flexible approach has proved useful for the development stage that Portugal has reached then it is seeking entry into the Common Market and where most of the licensing agreements are entered into by private firms. While some relatively clear criteria are followed and royalty rates are examined against previous experience and international data obtained through TIES, some degree of subjectivity is nevertheless inherent in the Portuguese experience.

The development of evaluation methods which incorporate financial consideration is therefore plausible. After applying the UNIDO method on some 16 contracts (13 license, 1 engineering and 2 routine technical assistance) the following conclusions were reached with respect to the method itself and the applicability of the method.

#### Comments on UNIDO Methodology

It should be said that the methodology under analysis can constitute a useful tool for the evaluation of technology transfer



agreements, since it provides the analyst with data on the sharing of profit between licensor and licensee, enabling a further step to be taken than the mere traditional knowledge of royalties on sales. The view of the contract as an income sharing device is quite attractive and, from the standpoint of the evaluation department, this new methodology can provide additional arguments for the defense of the recipient's interests.

Some conceptual problems inherent to the method should, nevertheless be pointed out. The first question is whether evaluation must be more concerned with the sharing of profits at the company level or with the effects of the contract at a more aggregate level (balance of payments, technological development, creation of employment, etc.). For most countries the market orientation of the products manufactured with the technology transferred is an important issue. The "profit-sharing methodology" is not concerned with this aspect: its cornerstone is the part of the licensee (and licensor) in overall profits. However from a macro-economic (or national) standpoint and given the shortage of foreign currencies and balance of payments deficits faced by the overwhelming majority of developing countries, exports are usually more favoured than domestic sales. Some registries compute the so-called contractual balance of payments, where receipts and expenses in foreign currencies are compared and evaluating criteria usually allow higher royalty rates for contracts with high export-potential in order to promote exports. This point illustrates, to some extent, the criticism that an analysis of LSEP and TIF is not enough since it does not examine the macroeconomic effects of the contract and focuses on the evaluation at the enterprise level.

Another concern is the significance of income-sharing when the recipient is not yet producing the goods and the supplier is in a monopolistic position. The profits of the former are more dependent on the transfer itself than on the relative level of payments (assuming that they do not exceed a maximum amount). In other words, the question is more the profitability of the investment than its sharing. It should be stressed that in some cases there are "gentlemen's agreements" through which additional payments are transferred, by-passing regulatory mechanisms.<sup>1/</sup>

The above comments indicate that the employment of the methodology is much easier (and correct) when the purpose of the contract is to reduce costs of production than to launch the manufacturing of new goods. In the first case the licensor should only be entitled to a part of the additional profit derived from the contract, while in the second the question is not so straight-forward.

A further limitation of the method is that it does not take into account types of remuneration other than contractual payments. An inquiry undertaken by the National Industrial Conference Board of 191 US companies shows that

contractual licensing of technology enabled them to obtain profits from other sources: sales of components and raw materials (66 per cent), grant-back clauses (44 per cent), sales of machinery and equipment (37 per cent)<sup>2/</sup>. This means that, especially in contracts with tie-in clauses or where it is envisaged that some components would be brought to the licensor, the calculation of LSEP does not provide a full picture of the sharing of profits.

The relationship between LSEP and the duration of contract should be recalled at this point. Theoretically, longer durations imply declines of the licensor's profit shares. However they can also mean higher overall remuneration of the technology, since the period of payments is longer. A proper utilization of the methodology has, therefore, to carefully regard the influence of the time factor. This problem is particularly important in connection with requests for renewal: how should they be analyzed under this methodology? It seems a priori that different LSEP standards (obviously lower) should be used for dealing with renewals.

Another conceptual aspect with strong implications for the applicability of the method is the fact that, as has been remarked already, it is strictly directed towards contracts between independent firms. In countries, like Portugal, where a large share of agreements involves affiliated companies and where about 50 per cent of payments for long-term contracts (licensing and routine technical assistance) take place intra-group, other evaluation tools need to be worked out.

Other questions could be raised in connection with evaluation procedures, such as the need to acknowledge the importance of the technology and the product concerned for the objectives of industrial policy; the point reached by the product in its cycle; the market power of recipient and supplier; the influence of the contract over internal competition; restrictive clauses included in the agreement; local content of production; the provision of adequate training programmes and the measures envisaged for the absorption and mastering of the technology transferred.

The following is an examination of the problems connected with the applicability (implementation) of the methodology.

Analysis of profit-sharing is based at least on projected sales values, profits and payments. From our experience it is known that the reliability of these projections is, in many cases, doubtful. On the one hand, reliability depends upon the period envisaged: the larger the period, the poorer the reliability. On the other, companies in developing countries often lack the capability for making adequate forecasts and many of their projections are pure guesswork; in inflationary times such as the present, projections are even more difficult and in the search for data (even in the given sample), contracts whose projections

<sup>1/</sup> See, for instance, Daniel Chudnovsky, "Transfer of Technology: Regulating Technology Imports in Some Developing Countries" in Trade and Development 3.

<sup>2/</sup> See F.B. Lovell, "Appraising Foreign Licensing Performance" in S.P. Sethi and J.N. Seth, 1973, quoted from M. Delapierre "La Vente Internationale de Technologie - l'Optique de la Firme", OECD, Paris 1975.

concerning sales and profits have been changed during the evaluation period were observed. These questions are even more sensitive when the contractual product is only a small part of a company's activity; in this case, it is very difficult to distinguish the relative growth of the product vis-a-vis the others and to forecast the share of profits that can be attributed to it. Interlinkages among the sales and profit margins of different products, whether contractual or not, are further elements to be taken into account, which increase the probability of incorrect projections. This inherent difficulty in determining future profits also implies that projections can be easily manipulated to show low LSEP. This seems to be a further topic with regard to the implementation of the method. From the empirical work developed, and taking into account the comments just presented, some conclusions can be drawn:

(i) The UNIDO method constitutes an innovating approach for the evaluation of technology transfer agreements; it should not be viewed as an alternative to the analysis based on royalties on sales, but rather as a complementary tool especially useful in more complex or doubtful cases;

(ii) Further empirical studies should be elaborated in order to enlarge the data base and to provide a sounder reference for the evaluation of contracts;

(iii) Exchange of data on LSEP and TTF could also be undertaken under TIES: those countries which have already included this methodology in their evaluation procedures could supply the above information;

(iv) Additional developments in the methodology are also welcomed so that it could answer to some of the criticisms raised.

## *Recent legislation*

### Ethiopia Proclamation No. 235/1983

#### A Proclamation to Provide for the Establishment of Joint Venture

##### "ETHIOPIA TIKDEM"

Whereas, the primary objective of the Ethiopian Revolution is the all-round development of the national economy and the achievement of a higher standard of living for the broad masses;

Whereas, in order to build a strong national economy and achieve a higher standard of living, it is necessary to develop the natural resources of the country;

Whereas, the participation of foreign capital with Ethiopian public capital in joint ventures and the transfer of foreign technology through such participation can play a role in the realization of the objectives mentioned above;

Whereas, to this end, it is necessary to lay down legal framework for the formation, operation and regulation of joint ventures;

Now, therefore, in accordance with Article 5(6) of the Redefinition of Powers and Responsibilities of the Provisional Military Administrative Council and the Council of Ministers Proclamation No. 110/1977, it is hereby proclaimed as follows:

### Chapter One - General

#### 1. Short title

This Proclamation may be cited as the "Joint Venture Establishment Proclamation No. 235/1983"

#### 2. Definitions

In this Proclamation:

1) "Supreme Council" means the National Revolutionary Development Campaign and Central Planning Supreme Council;

2) "Joint venture agreement" means the agreement signed at the time of the formation of the joint venture;

3) "Foreign exchange regulations" means any regulations and directives issued under the Monetary and Banking Proclamation No. 99/1976.

#### 3. Activities that may be undertaken by joint ventures

1) Joint ventures may invest in and undertake activities which introduce technology and know-how into the country or which have positive foreign exchange impact or which otherwise make positive contributions to economic and social development and which, in addition, create employment opportunities in the country.

2) Notwithstanding sub-article 1 of this Article, joint ventures shall not, unless the Council of Ministers decides otherwise, be permitted to invest on precious metals, public utilities like electric light and power, telecommunication and water, banking, insurance, transport and domestic trade.

### Chapter Two - Formation of Joint Ventures

#### 4. Participation in joint ventures

1) A joint venture may be formed jointly by Ethiopian Public capital and foreign private capital.

2) The Supreme Council shall appoint the relevant government organ to be a party to a joint venture agreement representing the Ethiopian Government.

3) Unless the Council of Ministers determines otherwise, the share of the Ethiopian shareholder shall not be less than 51% (fifty-one per cent)

4) Subject to sub-article (3) of this Article, the exact amount of the shareholding of the Ethiopian shareholder and that of the

foreign shareholder or shareholders shall be fixed in the joint venture agreement.

#### 5. Duration of joint venture

1) Subject to sub-article 2 of this Article, the duration of a joint venture shall be fixed in the joint venture agreement.

2) Unless otherwise approved by the Council of Ministers, the duration of a joint venture shall not exceed 25 years.

3) The Government of Socialist Ethiopia shall protect the right of ownership of the shares held by the foreign shareholder for the duration of the joint venture fixed in accordance with sub-article 1 of this Article.

4) If, for reasons of national interest as determined by the Council of Ministers, the Government has to purchase all the shares, it has to pay fair and equitable price on the basis of the books of accounts of the joint venture and payment shall be made in the currency of investment within a reasonable period of time.

#### 6. Forms of contribution to share capital

1) Contribution to share capital may be made in cash or in kind.

2) Cash contributions by the foreign partner shall always be in freely convertible currency.

3) The type of contribution in kind, the currency and the method of valuation thereof shall be agreed upon in the joint venture agreement.

#### 7. Share capital and par value

1) The share capital as well as the par value of the shares of the joint venture shall be determined in the joint venture agreement.

2) No joint venture shall be registered unless at least 25% of the share capital has been paid up.

3) In the event that the full share capital has not been paid up at the time of registration, the period for the payment of the remaining part shall be determined in the joint venture agreement.

#### 8. Application for investment in joint venture

1) Any investment application for participation in joint ventures shall be submitted to the Supreme Council in the form prescribed by the latter.

2) The Supreme Council shall act upon the application within a reasonable period of time.

#### 9. The joint venture agreement

1) The joint venture agreement shall be the instrument of formation of a joint venture.

2) The joint venture agreement shall, among other things, contain the following:

- a) The names, nationality, addresses and contributions of the shareholders of the joint venture;
- b) The purposes for which the joint venture is formed;
- c) The name and head office of the joint venture;
- d) The par value and number of the shares;
- e) The amount of the share capital and the value of the contribution in kind;
- f) The period of time for which the joint venture is formed;
- g) The manner of distributing profits;
- h) The names of the chairman and the members of the Board of Directors;
- i) The scope and duration of the tax exemption indicated in Article 27(2) of this Proclamation;
- j) The date of commencement of operations;
- k) The frequency and method of calling, the quorum required and the voting procedures of the shareholders meetings.

#### 10. Registration

1) No joint venture may undertake activities hereunder unless it is registered with the Ministry of Domestic Trade.

2) An application for the registration of a joint venture shall be made to the Ministry of Domestic Trade in such form as shall be prescribed by the same Ministry.

3) The joint venture agreement and other documents as may be necessary as well as a letter issued by the Supreme Council endorsing the joint venture agreement shall be submitted together with the application for registration.

4) The Ministry of Domestic Trade shall issue a certificate of registration to a joint venture registered in accordance with this Proclamation.

5) Any changes in the particulars contained in the form of application and in the joint venture agreement made subsequent to registration shall also be registered.

#### 11. Legal personality

A joint venture shall attain legal personality after Article 10 has been complied with.

#### 12. Name of joint venture

1) A joint venture shall have a name which may indicate the nature of its undertaking.

2) The name of a joint venture shall not affect the rights of third parties.

#### 13. Liability

1) A joint venture shall be only to the extent of its assets.

2) Shareholders of a joint venture shall be liable only to the extent of their shareholdings.

### Chapter Three - Transfer of Shares and Settlement of Disputes

#### 14. Transfer of shares

1) A foreign shareholder who wants to transfer his shares shall first make his offer to the Ethiopian shareholder to buy such shares;

2) Should the Ethiopian shareholder decline to buy the said shares or fail to respond to such offer within 90 (ninety) calendar days after receipt of the offer, the foreign shareholder may sell the said shares to any foreign natural or juridical person acceptable to all the shareholders.

3) The price of the share shall be mutually agreed upon.

#### 15. Settlement of disputes

1) Any dispute arising from the joint venture agreement shall be amicably settled by the shareholders.

2) Failing settlement under sub-article 1, the dispute shall be submitted to arbitration.

3) Each party to the dispute shall nominate an arbitrator and the umpire shall be chosen by the arbitrators so nominated by each party provided, however, that where the arbitrators fail to agree on the choice of the umpire, he shall be chosen by the President of the International Chamber of Commerce.

4) The arbitral body constituted in accordance with sub-article 3 of this article shall lay down its own rules of procedure.

5) The arbitral body shall apply the law or laws of Ethiopia relevant to the issues involved and shall ensure that the dispute is settled expeditiously.

6) The arbitral body shall also decide on the costs of arbitration and shall determine who shall bear such costs.

7) The awards of the arbitral body shall be final and conclusive.

### Chapter Four - Management of Joint Ventures

#### 16. Shareholders' meeting

The shareholders' meeting shall be the highest body of any joint venture.

#### 17. Powers and duties of shareholders' meeting

In addition to its powers and duties provided for in the joint venture agreement and in the other provisions of this Proclamation, the shareholders' meeting shall:

1) Appoint the members of the Board of Directors;

2) Appoint and define the duties of external auditors;

3) Approve the accounts of the joint venture and reports of the external auditors;

4) Approve the work programmes and budget of the joint venture;

5) Subject to Article 31 of this Proclamation:

a) Dissolve the joint venture and appoint liquidators;

b) Amend the joint venture agreement.

#### 18. The Board of Directors

1) The Board of Directors of the joint venture shall be composed of such number of directors as may be agreed upon in the joint venture agreement provided that such membership shall be on the basis of shareholding in the joint venture.

2) The Board of Directors shall elect a chairman from among its members where no chairman has been elected by the shareholders.

#### 19. Powers and duties of the Board of Directors

In addition to its powers and duties provided in the joint venture agreement and in the other provisions of this Proclamation, the Board of Directors shall:

1) Present to the shareholders' meeting draft policy and work programme of the joint venture for approval;

2) Approve the loans and credits of the joint venture;

3) Prepare and submit to the shareholders' meeting the budget of the joint venture for approval;

4) Establish branches of the joint venture;

5) Approve the appointment and dismissal of department heads and agents of the joint venture and define their responsibilities;

6) Approve the internal regulations of the joint venture;

7) Approve the sale of fixed assets of the joint venture;

8) Prescribe its own rules of procedure;

9) Delegate some of its powers to any member of the Board or to the General Manager of the joint venture; and

10) Discharge such other duties as are assigned to it by the shareholders' meeting.

#### 20. The General Manager

1) The General Manager and the deputy General Manager of the joint venture shall be appointed by the Board of Directors in accordance with the provisions of the joint venture agreement.

2) If the General Manager of the joint venture is not an Ethiopian national, the post of Deputy General Manager shall be filled by an Ethiopian national.

3) The General Manager shall be the chief executive of the joint venture and, subject to the general direction and supervision of the Board of Directors, shall:

- a) Represent the joint venture with third parties;
- b) Prepare and, upon approval, implement the budget, plans and work programmes of the joint venture;
- c) Borrow money with the approval of the Board;
- d) Prepare the annual and other reports of the joint venture;
- e) Open and operate bank accounts in the name of the joint venture;
- f) Employ and dismiss employees in accordance with the internal regulations of the joint venture and the applicable law;
- g) Discharge such other duties as may be given to him by the Board of Directors.

4) The functions of the deputy General Manager shall be fixed in the joint venture agreement.

#### 21. Employment of expatriates

Joint ventures may employ foreign nationals in accordance with the Ethiopian labour law in cases where qualified Ethiopian nationals are unavailable.

### Chapter Five - Account and Auditing

#### 22. Books of accounts

A joint venture shall keep such books of accounts as are necessary in accordance with generally accepted accounting principles and practice.

#### 23. Depreciation allowance

The depreciation allowance for fixed assets of the joint venture shall be in accordance with the relevant Ethiopian law.

#### 24. General reserve fund

1) 5% of each year's net profits of the joint venture shall be set aside as reserve until such time as the said sum reaches 20% of the share capital of the joint venture.

2) The shareholders' meeting may establish other reserves.

#### 25. Distribution of profits

Profits from the activities of the joint venture may be distributed to the shareholders only after transfers to the reserve funds have been, deducted pursuant to Article 24 hereof.

#### 26. Appointment of auditors

The external auditor(s) of the joint venture shall be appointed annually by the shareholders' meeting.

### Chapter Six - Privileges

#### 27. Exemption

1) A joint venture shall be exempt from the payment of customs duties, government and municipal taxes levied on imports with respect to investment goods, and the first round of spare parts thereof, which are required for the operation, production and processing of goods and services.

2) A joint venture may be granted total or partial exemption for the period to be specified in the joint venture agreement, from the payment of customs duties, government and municipal taxes levied on imports, with respect to raw materials and other materials which are required for the operation, production and processing of goods and services.

3) A joint venture may also be exempted from the payment of customs duties and transaction tax levied on goods exported.

4) A joint venture shall be exempted from the payment of income tax:

- a) For a period of 5 years in the case of new projects; and
- b) For a period of 3 years in the case of major extension of existing projects and to the extent of such extension as from the day of commencement of production or operation.

5) A joint venture shall pay income on its taxable income at the rate of forty per cent (40%).

6) Any dividend received from a joint venture which is reinvested in Ethiopia shall be exempt from the payment of income tax.

7) The salaries and allowances of expatriate employees of a joint venture shall be exempt from income tax.

#### 28. Remittance

1) Any dividend remitted abroad shall be taxed at the rate of 10% of the amount remitted.

2) Any foreign shareholder, may remit proceeds from liquidation of the joint venture.

3) Any foreign shareholder whose shares are purchased pursuant to Article 5(4) hereof, shall be entitled to repatriate the full amount of the purchase price he receives.

4) Expatriate employees of the joint venture may remit their savings in accordance with the foreign exchange regulations of Ethiopia.

#### 29. Foreign currency

A joint venture may open foreign currency accounts in accordance with the foreign exchange regulations of Ethiopia.

## Chapter Seven - Miscellaneous Provisions

### 30. Dissolution and winding-up

1) A joint venture may be dissolved for any one of the following reasons:

- a) Expiry of the life of the joint venture fixed in the joint venture agreement;
- b) Dissolution resolved by a meeting of the shareholders;
- c) Institution of bankruptcy proceedings;
- d) Loss of three-quarters of the capital.

2) Subject to sub-article (1) of this Article, the provisions of the Commercial Code of Ethiopia relating to the dissolution and winding up of share companies including the provisions on bankruptcy shall apply, mutatis mutandis, to joint ventures.

### 31. Special majority required

No decision to dissolve a joint venture or to amend a joint venture agreement shall be taken unless shareholders representing at least 75% of the shares have voted in favour of such dissolution or amendment, as the case may be.

### 32. Procedures of procurement and marketing

1) A joint venture shall, whenever possible, give preference to domestic materials, products and services.

2) The parties to a joint venture shall determine in the joint venture agreement the manner of:

- a) Procuring raw materials required for the activities of the joint venture; and
- b) Marketing the products of the joint venture.

3) Notwithstanding any other law to the contrary, the joint venture may procure raw materials and market its products as agreed upon in the joint venture agreement.

### 33. Existing arrangement

Nothing in this Proclamation shall be construed as modifying arrangements entered into by the Ethiopian Government with other states or public or private organizations or individuals concerning joint venture.

### 34. Issues not covered by this law

The relevant Ethiopian law shall apply to matters that are not covered by this Proclamation.

### 35. Conflict with other laws

1) Subject to sub-article 2 of this Article, no law which is inconsistent with this Proclamation shall have force or effect in respect of matters provided for herein.

2) Special legislation may be promulgated governing the prospecting, exploration and exploitation of petroleum and other minerals.

Under special circumstances or pending such promulgation, the Council of Ministers may approve special agreements for prospecting, exploration and exploitation of petroleum and other minerals.

### 36. Implementation of this Proclamation

The Supreme Council shall be responsible for the implementation of this Proclamation.

### 37. Power to issue regulations

The Supreme Council may issue regulations for the better carrying out of this Proclamation.

### 38. Effective date

This Proclamation shall enter into force on the date of its publication in the Negarit Gazeta.

Done at Addis Ababa, this 22nd day of January, 1983 (The Provisional Military Administrative Council).

## *Technology acquisition*

In issue No.19 of the TIES Newsletter we published an article on licensing computer software covering an awareness of the patentability of the subject, and the provisions for protection. The following article continues in the same vein covering the different types of agreements etc.

### Channels for Transfer of Computer Software

The growing software industry has adopted for its purposes a variety of contractual forms for use of computer software.

For reasons described earlier, licensing under patents, trade secrets or copyrights has become the most proper vehicle for the utilization of software. The present article will deal with basic types of agreements, describing their main features and recommending options for technology regulatory agencies when dealing with this type of transaction.

### Custom-made software contracts<sup>1/</sup>

Custom-made software contracts deal with any procurement of computer software, either alone or in conjunction with the acquisition of computer hardware and related products and services, which involve either the development of new products and services or the substantial modification of the existing programmes (supplied by either the vendor or the user).

The most important part of a contract for custom-made software is the development of a complete set of functional specifications for the software, i.e. a set of documents which describe the business functions that the software must perform in the context of the overall data processing system in sufficient

<sup>1/</sup> This section is based on "Custom software contracts" by Richard L. Bernacchi, 25 August 1981.

detail so that the functional specifications can provide the basis for the standards of performance that will be used to evaluate the vendors' performance.

The functional specifications will generally include:

a) Functional description of the package, that is (i) all tasks the package must accomplish, (ii) all inputs, (iii) all outputs, (iv) all processing requirements, (v) all data files and (vi) volumes of activities and files;

b) Description of the hardware environment in which the package must operate, including: (i) storage restrictions, (ii) peripheral equipment restrictions, (iii) data transmission procedures and (iv) communication interface;

c) Description of the software environment within which the programme must reside including (i) specifications of the operating systems, (ii) the programming languages, (iii) other programmes with which the customized software must properly interface, (iv) any specific nomenclature system which must be used for programmes;

d) Statements concerning the performance of the software relation to (i) its internal organization, (ii) its execution speed, (iii) its capability for enhancement and modifications, (iv) its error detection properties, (v) its error correction and recovery properties and (vi) any restriction of the activities which the user must avoid;

e) Programming and documentation standards, including details as to (i) documentation content, (ii) quantity, (iii) forms, and (iv) the nature and extent of coding.

An important issue which is specific to this type of agreement, is the one of pricing. The least desirable form of pricing is a pure "time and materials" (T+M) contract since in this type of agreement the risks that custom-made software will take longer than anticipated are high.

Sometimes T+M contracts provide for the overall ceiling of the amounts the vendor can charge to the user; in those situations the formula is close to a fixed price contract, which is usually the best formula from the user's point of view.

It is quite common that part of the fixed price (or T+M price) is held back by the user in order to encourage the vendor's co-operation.

In custom-made software agreements, the concept of liquidated damages as an incentive to performance is automatically and frequently used. It may be applied for example to: (i) unliquidated credits for late performance, (ii) delayed payments, (iii) free machine time, (iv) increased level of service, (v) temporary back-up personnel, (vi) substitute processing, (vii) use of outside contractors and (viii) substitute personnel.

Another feature of the custom-made software contract is the quality of personnel. This should be specifically spelled out, as should

be the responsibilities for project management and control. At present the most complicated software system requires extensive documentation and training necessitating extensive provisions.

As software develops (at least in some of the countries), a degree of legal protection, title to the software and related information (including design aspects) and rights to use such systems, should be included in the contract.

The following are basic issues which should be clarified in the contracts, as the need arises:

a) Whether title, and/or unlimited rights to use software should remain with the vendor;

b) Whether exclusive title to the software should remain with the user;

c) Possibility for joint ownership;

d) Sole ownership by user with limited marketing rights granted to the vendor;

e) Sole ownership by vendor with limited use/marketing rights granted to user;

f) Sole ownership by vendor with royalties payable to user;

g) Sole ownership by vendor in return for reduced development charges, future services, etc.

As with other licensing agreements, this type of contract will usually include provisions related to the protection of software from intentional or inadvertent disclosure, third party infringement and acceptance testing, which includes test procedures, testing, acceptance criteria and ultimate measure of suitability of software functions in relation to:

(i) The hardware and software system environment;

(ii) The test data, (iii) time period for testing, (iv) the degree of reliability, (v) the degree of accuracy;

(iii) The response time and the turn around time for error correction.

Finally, as with other licensing contracts, the following provisions should be included:

(i) Limitation of assignments;

(ii) Termination procedures;

(iii) Choice of law and venue;

(iv) Arbitration vs. litigation;

(v) Limitations of liability;

(vi) Force majeure;

(vii) Offset rights;

(viii) Users' access to vendors work product;

(ix) Future modifications and enhancements.

## Agreements for packaged software<sup>2/</sup>.

The so called packaged software is software developed for use by more than one customer and usually ready to use with only minor adjustments to the users' needs. Packaged software is as a rule licenced rather than sold, and is customarily non-exclusive and non-transferable.

Depending on parties to the agreements there are four types of packaged software which are described below:

### a) Developer (of the software) - end user contract

The following would be the provisions included in this type of agreement:

- (i) Description of software (including provisions for updates and new versions);
- (ii) Price and payment schedule;
- (iii) Taxes;
- (iv) Terms of agreement (this may include termination provisions in a perpetual licence);
- (v) Maintenance;
- (vi) Proprietary protection (including third party infringements);
- (vii) Escrow arrangements for source (to secure services in case the vendor ceases to do business);
- (viii) Ownership of user-made changes;
- (ix) Documentation;
- (x) Training (of varying duration and scope depending on the complexity of software);
- (xi) Limitation of use (limiting the use of the programme to a single processing unit or a single location, or inside the user company);
- (xii) Acceptance criteria;
- (xiii) Liquidated damages (these are not generally used in packaged software, however the concept may be useful in the case of "leak" of software to third parties);
- (xiv) Warranties (may or may not be included, depending on the nature of the software);
- (xv) Limitation of remedies (usually consequential and indirect damages are excluded);

### b) Vendor (licensor) - original equipment manufacturer (OEM) agreement

In addition to provisions provided for the type of an agreement under A, the OEM type of agreement will provide for volume price discounts and authorization for sublicensing. The agreement will spell out which key conditions OEM will be required to sublicense or cause the sublicensee to execute.

<sup>2/</sup> This part is based on "Agreements for packaged software" by Susan H. Nycorn, 25 August 1981.

### c) Vendor - distributor agreements

In addition to many of the foregoing conditions, the vendor-distributor agreements are contracts which usually contain provisions for pre-distribution inspection and post-distribution returns, and may also include conditions not to compete by one or both parties, guaranteed order levels and production levels, etc.

### d) Vendor - service bureau agreements

The additional clauses may include the establishment of a basis for payment as a function of amount of use. However, there may be minimum payments or flat rates. Furthermore, the vendor will usually require access to the licensee accounts and security arrangements. Training will be of a more extensive and substantial nature. The licensee in these cases may be of an exclusive character.

### Suggestions as to developing countries' approach toward licensing of computer software

The brief overview of the current status of protection of computer software (see TIES Newsletter No.19) and current practices of its licensing enables one to draw certain basic conclusions as well as suggestions as to how technology registries should deal with these agreements.

As regards developing countries, one is primarily concerned with non-protected computer software, whose protection will only be available (either in a form of patents or copyrights) in the next few years. This lack of legal protection in the user country leads to an important consideration by technology registries in terms of their attitude and position vis-à-vis duration of the agreements; rights of use after expiration of the agreements; limitation of use; payment level. These are the basic contractual elements that should be considered by technology registries.

Prior to going into detailed recommendations as to how to deal with the above elements, the UNIDO Secretariat is of the view that agreements for use (licence) of computer software should be subject to scrutiny by technology registries in developing countries.

By local legislation the following technology registries are empowered to scrutinize such contracts: India<sup>3/</sup>, Spain<sup>4/</sup>, Argentina<sup>5/</sup>, Mexico<sup>6/</sup>, Philippines<sup>7/</sup> and Portugal<sup>8/</sup>. It is the UNIDO Secretariat's consideration that although in many developing countries computer software agreements are not clearly defined,

<sup>3/</sup> Guidelines on foreign technology collaborations.

<sup>4/</sup> Decree 2343.

<sup>5/</sup> Law 21,617.

<sup>6/</sup> Law on Technology Transfer dated 11 January 1982.

<sup>7/</sup> Decree 1520 of 1978.

<sup>8/</sup> Decree 53/77.



they should be subject to careful scrutiny, as they are likely to become very popular in the near future.

In terms of agreement types, a technology registry should deal with either packaged computer software agreements (which are believed to be more frequent), and/or custom-made software contracts.

The following are basic suggestions made by UNIDO as to the approach towards main contractual provisions. These deal with the two main types of agreement under one heading.

#### Duration

In both cases, whether custom software or packaged software contracts, the duration should be limited and be equal to the minimum period of time required by the user (licensee) to absorb and use the transferred software. No perpetual agreement should be permitted since the technological development of this field is moving very rapidly.

#### Payments

With respect to custom-made software agreements, it is suggested that the fixed price formula be used combined with very precise performance standards. Concerning packaged software, a one time payment may be preferred, with the inclusion however of additional (improved) software.

#### Maintenance

In both types of agreements maintenance terms should be precisely defined, including payments for such services.

#### Training

The training provision, especially in custom-made software agreements, should be extensive; in a packaged licence it is also considered essential.

#### Title to the software

In the case of custom-made software, technology registries should insist on the users sole title to the software (eventually with limited marketing rights by the vendor). In packaged software agreements, however, during the term of agreements, the title may be with the vendor and the user may have the right to use it freely in the same scope.

#### Third party infringements - property protection

Since in most developing countries no legal protection can be granted to computer software, (except through trade secrets), the licensor/vendor has to ensure that his software does not infringe on third party rights.

#### Acceptance criteria

These conditions are particularly important for custom-made software agreements. They are also of significance for packaged software and in both cases the criteria should be extensive and worked out in detail.

#### Liquidated damages and warranties

Both provisions are of significance, particularly for custom-made software; therefore a good deal of time and effort should go into the preparation of these clauses.

#### Documentation

This clause is of crucial importance for custom-made software.

#### Future modifications and enhancement

The licensee should secure rights of access to future modifications, particularly in the case of packaged software.

#### Rights of use after expiration of contract term

It is recommended that users have unlimited rights in using the software after the expiration of an agreement.

#### Limitations of use

Particularly in packaged software agreements, many vendors try to limit the use of their software to the users plant and/or location. In the view of the UNIDO Secretariat, such limitations should not be acceptable in principle.

It is hoped that this article covers the most crucial issues of protection and licensing of computer software and provides background material for technology registries to establish their own practices and policies in view of the fact that technology registries will increasingly be dealing with such agreements. An exchange of experience so far encountered by some technology registries would no doubt assist in a further clarification of the issues involved and in establishing clear and coherent policies.

\* \* \* \* \*

Further to our re-printing of the article on restrictive contract clauses in East-West licensing trade in the last issue of the TIES Newsletter, we are pleased to follow it up with the summary of a paper written for the Economic Commission for Europe which was prepared by Dr. Ravasz Károly, Economic Adviser, Foreign Trade Enterprise INTERCOOPERATION, Budapest and transmitted by the Government of Hungary.

#### The Role of Technology Transfer in Co-operation Agreements of Hungarian Enterprises (with two case studies)

##### Summary

The paper describes first the objectives of Hungarian technology transfer policy, explaining how it combines national and international considerations, and the motives of Hungarian enterprises in the acquisition or supply of technology.

Among available transfer mechanisms, Hungarian enterprises usually prefer industrial co-operation, since it provides the greatest number of built-in guarantees that the supply-

ing party will meet its obligations and ensure satisfactory utilization of the transferred technology; a further advantage of this mechanism is its trade-expanding and payment-balancing effects. Technology transfer is an essential part of most co-operation agreements concluded by Hungarian enterprises, and stimulates trade both directly and indirectly.

The paper discusses a number of surveys which have been carried out in various countries on east-west co-operation - particularly from the technology transfer aspect - agrees with some of the findings, and takes issue with others. It puts forward reasons why some of the comparative percentages may not be entirely accurate.

At the same time as emphasizing the most important issues which have been raised in the surveys, the paper describes Hungarian experience and approach with regard to various forms of technology transfer, the responsibilities and obligations of the donor and recipient parties, and restrictive practices (taking into account the draft Code of Conduct on the Transfer of Technology, as discussed in UNCTAD).

The two case studies discuss transfer of technology from the Federal Republic of Germany to Hungary, and from Hungary to India, in the engineering and the pharmaceuticals industries, respectively.

The paper concludes that co-operation agreements have, on the whole, been both useful and successful in the transfer of technology, by fostering division of work in R and D, creating interdependence, and proving to be a suitable transfer mechanism between countries with different economic and social systems.

For the benefit of those readers who would like to obtain copies of the full text of the paper, and others in the series, the following is a list of titles and symbol numbers. These may be requested from the Economic Commission for Europe, Palais des Nations, CH-1211 Geneva 10, Switzerland.

<u>Symbol</u>	<u>Title</u>
SC.TECH./SEM.8/...	
TRADE/SEM.5/...	
1/Rev.1	Provisional agenda
R.1	Contractual and institutional arrangements for technology transfer in east-west trade: the experience of selected co-operation partners in the automotive industry (note by the secretariat)
R.2	The transfer of embodied technology in east-west trade (note by the secretariat)
R.3/Rev.1	The transfer of disembodied technology with special regard to licensing (note by the secretariat)
R.4	Hungary's international trade in licences and technical designs (note by the secretariat)

<u>Symbol</u>	<u>Title</u>
R.6/Rev.1	Transfer of technology by means of industrial co-operation in the Polish construction-machinery industry (Poland)
R.7/Rev.1	The influence of international technology transfer on the development of economic co-operation (Poland)
R.10/Rev.1	Restrictive clauses in east-west licensing trade (Poland)
R.20	The place and role of the transfer of technology in foreign economic policy of the People's Republic of Bulgaria at the beginning of 1980s (Bulgaria)

Another publication which is bound to interest our readers is the Manual on Licensing Procedures in Member Countries of the United Nations Economic Commission for Europe. This is a comprehensive overview of licensing practices in 20 countries, including eastern and western Europe, the USA and Canada. It includes a glossary of terms, international bibliography, list of conventions, treaties and international agreements. The publishers are Clark Boardman Co. Ltd., 435 Hudson St., New York, N.Y. 10014.

## *Meetings*

Ad-Hoc Panel of Experts on Contractual Arrangements in the Pharmaceutical Industry, 2nd Meeting, Vienna, 25-29 April 1983.

Workshop on Timber Engineering, Melbourne, Australia, 2-20 May 1983.

Workshop on Energy Conservation in the Metallurgical Industries, Wantage, UK, 16-20 May 1983.

United Nations Commission on International Trade Law, 16th Session (UN Meeting), Vienna, 24 May - 3 June 1983.

## *Publications*

ID/293. First Consultation on Industrial Financing, Madrid, Spain, 18-22 October 1982 - Report.

ID/294. First Consultation on the Training of Industrial Manpower, Stuttgart, FRG, 22-26 November 1982 - Report.

ID/284. Handbook on Industrial Statistics.

ID/251. Women and Industrialization in Developing Countries.

UNIDO for Industrialization:

- PI/75 Petrochemicals
- PI/78 Wood processing and wood products
- PI/79 Leather and leather products industries
- PI/80 Shipbuilding and ship repair development.

PI/86. Guide to Training Opportunities for Industrial Development.

PI/85. UNIDO Industrial Training Offer Programme 1983.

ID/281. Changing patterns of trade in world industry: An empirical study on revealed comparative advantage.

ID/287. A programme for the Industrial Development Decade for Africa.

ID/291. Third Consultation on the Iron and Steel Industry, Caracas, Venezuela, 13-17 September 1982 - Report.

ID/275. Manual on upholstery technology.

ID/292. Industrial Development Abstracts Nos. 11201 - 11500.

**REQUEST FOR TIES NEWSLETTER**

For new subscribers only

UNIDO  
TIES Newsletter  
Development and Transfer  
of Technology Branch  
P.O. Box 300  
A-1400 Vienna, Austria

Please type or print in block letters

NAME .....

TITLE .....

ORGANIZATION .....

ADDRESS .....

CITY .....

COUNTRY .....



