



**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.

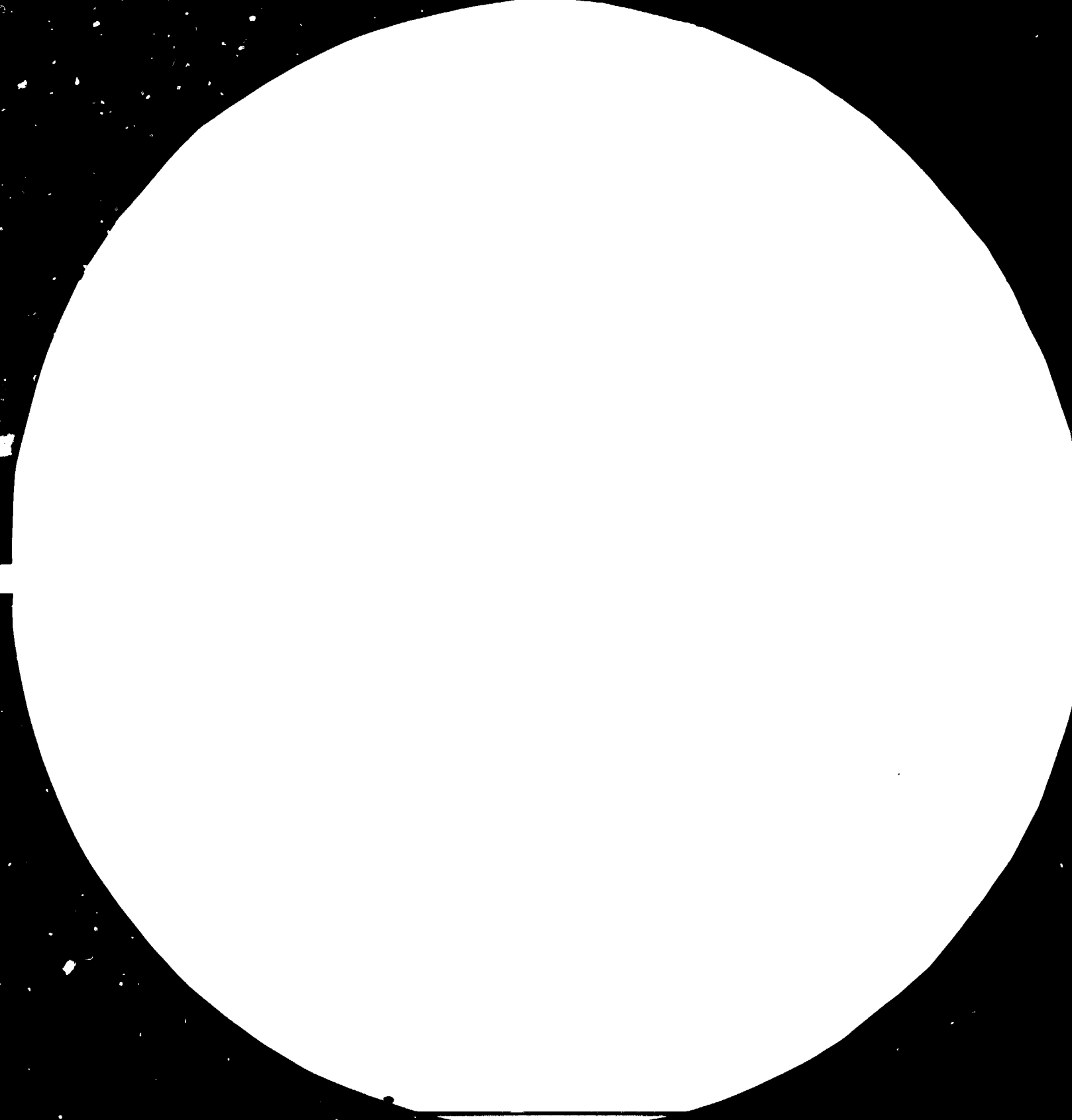
## FAIR USE POLICY

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

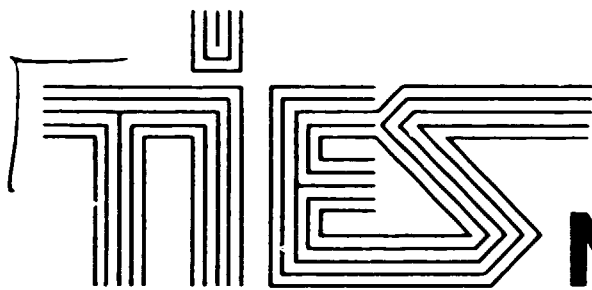
Please contact [publications@unido.org](mailto:publications@unido.org) for further information concerning UNIDO publications.

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





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-  
STANDARD REFERENCE MATERIAL 1010A  
(ANSI and ISO TEST CHART No. 2)



14591

# NEWSLETTER

## TECHNOLOGICAL INFORMATION EXCHANGE SYSTEM

Issue No. 25

April 1984

Dear Reader,

I am pleased to inform you that the Technology Import Export Bureau of the Ministry of Foreign Economic Relations of the People's Republic of China has agreed to host the Ninth Meeting of Heads of Technology Transfer Registries from 8-12 October 1984 in Beijing. The meeting will take place in the China International Centre for Economic and Technical Exchanges which was established by the Ministry to foster South-South co-operation and bilateral and multilateral economic and technical exchanges. The principal objective of this TIES meeting is to critically review the progress made with TIES, particularly in respect of the consolidation of ongoing activities and in order to discuss expansion into new areas of co-operation. Attention will initially be given to the extent regional TIES activities may be established.

In regard to this regionalization aspect, the Spanish Ministry of Industry and Energy has kindly offered to host a regional TIES meeting for Spanish speaking countries to be held in Madrid from 1-4 October prior to the TIES meeting in Beijing. Regional co-operation activities within the co-operative framework of TIES will then be worked out in detail.

These two TIES meetings will be preceded by the Fourth General Conference of UNIDO which will be held in Vienna from 2-18 August 1984. In this issue of the TIES Newsletter the list of background documents for UNIDO IV are included, and may be obtained through the normal channels.

G. S. Gouri  
Director  
Division for Industrial Studies

### *UNIDO activities*

The International Center for Public Enterprises in Developing Countries (ICPE) and the United Nations Industrial Development Organization (UNIDO) are presently preparing a guide on guarantees in international transfer of technology for the use of entrepreneurs in developing countries. An expert group met from 16 to 19 April 1984 at the headquarters of the ICPE in Ljubljana (Yugoslavia) to discuss and review the preliminary draft of this guide. The objective of the guide is to assist technology acquiring parties in developing countries to improve their negotiating capabilities and strengthen their

bargaining position in respect of the management of risks involved in the acquisition of technology by developing countries. The study should give guidance to developing countries on ensuring that the interests and environmental conditions (human, natural, technical and social) of the technology acquiring party/country are adequately reflected in the contract and that an equitable distribution of responsibilities between parties is made. The approach followed by ICPE and UNIDO is managerial and focuses on strategies and activities which should help developing countries to prevent failures occurring and avoid an excessive reliance on only formal rights and legal remedies. Hopefully the report could be made ready before the next TIES meeting of heads of transfer of technology registries so that it could be circulated to the participants.

### Discussion meeting of organizations engaged in the application of information technologies for development

In 1981 a meeting of experts was organized to look into the implications of technological advances in microelectronics for developing countries, at which the importance of actions at the national level relating to manufacture, industrial and other applications, software development and the formulation of a national microelectronics policy was emphasized. Regional meetings were subsequently held in Latin America and Asia and a third meeting for countries in the ECWA region took place in Kuwait on the first quarter of 1984.

In view of UNIDO's concern with the application of microelectronics and related information processing technologies to development, recommendations were made by these meetings that UNIDO assist in the establishment of regional centres for microelectronics applications and a number of country-level studies were initiated on the state-of-the-art of the microelectronics industry as well as possibilities of regional co-operation. Taking into account UNIDO's involvement and the contacts it has established with most of the intergovernmental and non-governmental groups active in the field, it was thought appropriate to organize a discussion meeting of these groups, which was held in Vienna from 21 to 23 March 1984, and was attended by representatives from professional societies in the information technology area; policy institutes actively engaged in studying the social, technological and economic issues relating to information technology; voluntary groups dedicated to implementing action-oriented programmes at the field-level in developing countries utilizing

Compiled by the Technology Group of UNIDO

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

information technology; development funding agencies interested in information technology as an important tool for development; and individual experts from developing and developed countries interested in the use of information technology for development.

It was quite clear from the presentations of the participants of ongoing action-related programmes and policy studies, and from the views expressed in the ensuing discussions, that there was a general recognition of the great potentials inherent in information technology to promote development in general and industrial development in particular in the developing countries. It was generally concluded that assistance to developing countries should have the building up of indigenous technological capability for development as its central objective. The participants recognized the value of co-operative and concerted action and expressed a keen desire to explore the possibilities of such action, stressing that action-programmes pursued by various organizations in this field should help developing countries avoid uncritical and indiscriminate applications which may have adverse side-effects. Ongoing programmes brought up for discussion at the meeting had all originated from individual and group initiatives independently taken. To ensure the long-term impact of such independent efforts, enlarge their scope and spheres of influence it would be useful to provide a more global discussion framework in the form of a consultative group on information technology for development, to be convened by UNIDO, which would be comprised of groups and individuals such as those who participated in the discussion meeting. It would remain open-ended so that it may be enlarged as and when new groups or individuals with similar interests were identified. The consultative group would meet periodically to exchange experience, discuss ongoing programmes, and explore possibilities of consultation, co-operation and co-ordination in the planning of new programmes, particularly related to industrial development.

In an immediate effort to realize the benefits of consultation, it was agreed that some of the ongoing programmes presented and discussed in the meeting could serve as starting points for such co-operative action between groups and individuals immediately interested in exploring the potentials inherent in these programmes for promoting development in general and industrial development in particular in a larger context. This purpose would be better served if comparable programmes were carried out on a regional basis in different parts of the developing world. In particular the discussion meeting recommended the exploration of possibilities of consultations, co-operation and joint action in the cases listed below keeping in mind the larger objectives as indicated.

- (i) Consider the possibility of deploying information technology for integrated health-care in rural communities. The Centre Mondial field experiment being carried out in Chad would be studied from this viewpoint and would possibly

be repeated in other geographical regions. The UNIDO Secretariat would explore possibilities of co-operation with the Centre in this respect.

- (ii) Study the potentials of information technology, on the basis of experience, to support primary, secondary and vocational school education. The Centre Mondial experiment in Senegal would be studied from this viewpoint. Apart from the Centre, UKCCD, UNIDO, UNESCO and IDRC may be interested.
- (iii) Study the possibility of providing low-cost communication infrastructure for a variety of applications to geographically dispersed groups/individuals through the use of low-altitude earth satellites. The PACKSAT project of VITA, which was endorsed by the meeting as a useful experiment and an opportunity for participation by different organizations, would be studied from this viewpoint and action programmes developed. Interested groups were VITA, UNIDO and possible funding agencies.
- (iv) Study the use of information technology to provide better access to techno-economic intelligence relating to technologies of relevance to developing countries, and to assist in information dissemination in general. VITA, UNIDO, and IDRC would explore this feasibility taking as an example the work done in the design and development in wood stoves.

It was agreed that there was a need for evolving guidelines for licensing, procurement negotiations, etc. in relation to information technology products and services supplied to the developing countries. The work done by UKCCD and UNIDO in this respect was noted. The Meeting endorsed the need for developing countries to analyse and evaluate alternative options available to them in deploying information technology for their internal use and some illustrative examples considered were:

- (i) Establishing relevant production capabilities through licensing of designs and purchase of related production facilities no longer in commercial use from developed countries (e.g. Texas Instruments personal computers)
- (ii) Software industry development for purposes of export as well as for specialized indigenous applications.

In carrying out such activities co-ordinated assistance could be usefully provided by professional societies from developed countries interested in such problem areas.

The discussion meeting appreciated the efforts being undertaken by UNIDO to promote the concept of Technologies for Humanity and agreed that information technology was one of the central technologies falling in this category. It was further agreed that through

the further activities of the consultative group and through other collective and individual efforts, specific projects in information technology with development catalyzing potentials for implementation would be identified, and in this respect a proposal was made and endorsed to publish an International Journal of Information Technology. It was agreed that such a journal, if available, could serve as a vehicle, among other things, to disseminate information about the kinds of programmes and policy studies referred to and discussed in this meeting.

In considering the desire of the developing countries to build up indigenous design and system engineering capabilities rather than be merely satisfied with the "black box" approach to solving development-related problems through external purchases of equipment, services, etc., a proposal relating to the establishment of a silicon foundry to service the developing countries' needs and the designs originating from these countries was extensively discussed and it was agreed that setting up such a facility preferably on a regional basis would prove to be very useful in building up design competence in developing countries to meet their specific needs. It was stressed, however, that in the detailed formulation of such a project, the viability of the facility in terms of cost, economies of scale, level of technology, operational efficiency etc. should be carefully scrutinized.

Lastly, the usefulness of creating an International Roster of Scientists and Technologists working in information technology would help in the systematic mobilization of the interests and assistance in the planning, formulation and implementation of projects such as those referred to above.

## Recent legislation

### Draft text of a model law on international commercial arbitration

The following is taken from the draft report of the Seventh Session of the Working Group on International Contract Practices held in New York from 6 to 17 February 1984. This report will be submitted to the Twelfth Session of the United Nations Commission on International Trade Law, New York, from 25 June to 13 July 1984.

#### CHAPTER I. GENERAL PROVISIONS

##### Article 1. Scope of application \*

(1) This Law applies to international commercial \*\* arbitration, subject to any multilateral or bilateral agreement which has effect in this State.

(2) An arbitration is international if:

(a) the parties to an arbitration agreement have, at the time of the conclusion of that agreement, their places of business in different States; or

(b) one of the following places is situated outside the State in which the parties have their places of business:

(i) the place of arbitration as determined in, or pursuant to, the arbitration agreement;

(ii) any place where a substantial part of the obligations of the commercial relationship is to be performed or the place with which the subject-matter of the dispute is most closely connected;

(c) The subject-matter of the arbitration agreement is otherwise related to more than one State.

(3) For the purposes of paragraph (2), if a party has more than one place of business, the relevant place of business is that which has the closest relationship to the arbitration agreement. If a party does not have a place of business, reference is to be made to his habitual residence.

#### Article 2. Definitions and rules of interpretation

For the purposes of this Law:

(a) "arbitral tribunal" means a sole arbitrator or a panel of arbitrators;

(b) "court" means a body or organ of the judicial system of a country;

(c) where a provision of this Law leaves the parties free to determine a certain issue, such freedom includes the right of the parties to authorize a third party, including an institution, to make that determination;

(d) where a provision of this Law refers to the fact that the parties have agreed or that they may agree or in any other way refers to an agreement of the parties, such agreement includes any arbitration rules referred to in that agreement;

\* Article headings are for reference purposes only and are not to be used for purposes of interpretation.

\*\* The term "commercial" should be given a wide interpretation so as to cover matters arising from all relationships of a commercial nature. Relationships of a commercial nature include, but are not limited to, the following transactions: any trade transaction for the supply or exchange of goods; distribution agreement; commercial representation or agency; factoring; leasing; construction of works; consulting; engineering; licensing; investment; financing; banking; insurance; exploitation agreement or concession; joint venture and other forms of industrial or business co-operation; carriage of goods or passengers by air, sea, rail or road.

(e) unless otherwise agreed by the parties, any written communication is deemed to have been received if it is delivered to the addressee personally or if it is delivered at his place of business, habitual residence or mailing address, or, if none of these can be found after making reasonable inquiry, then at the addressee's last-known place of business, residence or mailing address. The communication shall be deemed to have been received on the day it is so delivered.

**Article 4. Waiver of right to object**

A party who knows or ought to have known that any provision of this Law from which the parties may derogate or any requirement under the arbitration agreement has not been complied with and yet proceeds with the arbitration without stating his objection to such non-compliance without delay or, if a time-limit is provided therefore, within such period of time, shall be deemed to have waived his right to object.

**Article 5. Scope of court intervention**

In matters governed by this Law, no court shall intervene except where so provided in this Law.

**Article 6. Court for certain functions of arbitration assistance and supervision**

The Court with jurisdiction to perform the functions referred to in articles 11 (3), (4), 13 (3), 14 and 34 (2) shall be the ... (blanks to be filled by each State when enacting the model law).

**CHAPTER II. ARBITRATION AGREEMENT**

**Article 7. Definition and form of arbitration agreement**

(1) "Arbitration agreement" is an agreement by the parties to submit to arbitration, whether or not administered by a permanent arbitral institution, all or certain disputes which have arisen or which may arise between them in respect of a defined legal relationship, whether contractual or not. An arbitration agreement may be in the form of an arbitration clause in a contract or in the form of a separate agreement.

(2) The arbitration agreement shall be in writing. An agreement is in writing if it is contained in a document signed by the parties or in an exchange of letters, telex, telegrams or other means of telecommunication which provide a record of the agreement. The reference in a contract to a document containing an arbitration clause constitutes an arbitration agreement provided that the contract is in writing and the reference is such as to make that clause part of the contract.

**Article 8. Arbitration agreement and substantive claim before court**

(1) A court before which an action is brought in a matter which is the subject of an arbitration agreement shall, if a party so requests not later than when submitting his

first statement on the substance of the dispute, refer the parties to arbitration unless it finds that the agreement is null and void, inoperative or incapable of being performed.

(2) Where, in such case, arbitral proceedings have already commenced, the arbitral tribunal may continue the proceedings while the issue of its jurisdiction is pending with the court.

**Article 9. Arbitration agreement and interim measures by court**

It is not incompatible with the arbitration agreement for a party to request, before or during arbitral proceedings, from a court an interim measure of protection and for a court to grant such measure.

**CHAPTER III. COMPOSITION OF ARBITRAL TRIBUNAL**

**Article 10. Number of arbitrators**

(1) The parties are free to determine the number of arbitrators.

(2) Failing such determination, the number of arbitrators shall be three.

**Article 11. Appointment of arbitrators**

(1) No person shall be precluded by reason of his nationality from acting as an arbitrator, unless otherwise agreed by the parties.

(2) The parties are free to agree on a procedure of appointing the arbitrator or arbitrators, subject to the provisions of paragraphs (4) and (5) of this article.

(3) Failing such agreement,

(a) in an arbitration with three arbitrators, each party shall appoint one arbitrator, and the two arbitrators thus appointed shall appoint the third arbitrator; if a party fails to appoint the arbitrator within thirty days after having been requested to do so by the other party, or if the two arbitrators fail to agree on the third arbitrator within thirty days of their appointment, the appointment shall be made, upon request of a party, by the Court specified in article 6;

(b) in an arbitration with a sole arbitrator, if the parties are unable to agree on the arbitrator, he shall be appointed, upon request of a party, by the Court specified in article 6.

(4) Where, under an appointment procedure agreed upon by the parties,

(a) a party fails to act as required under such procedure; or

(b) the parties, or two arbitrators, are unable to reach an agreement expected of them under such procedure; or

(c) an appointing authority fails to perform any function entrusted to it under such procedure,

any party may request the Court specified in article 6 to take the necessary measure,

unless the agreement on the appointment procedure provides other means for securing the appointment.

(5) A decision on a matter entrusted by paragraph (3) or (4) to the Court specified in article 6 shall be final. The Court, in appointing an arbitrator, shall have due regard to any qualifications required of the arbitrator by the agreement of the parties and to such considerations as are likely to secure the appointment of an independent and impartial arbitrator and, in the case of a sole or third arbitrator, shall take into account as well the advisability of appointing an arbitrator of a nationality other than those of the parties.

#### Article 12. Grounds for challenge

(1) When a person is approached in connection with his possible appointment as an arbitrator, he shall disclose any circumstances likely to give rise to justifiable doubts as to his impartiality or independence. An arbitrator, from the time of his appointment and throughout the arbitral proceedings, shall without delay disclose any such circumstances to the parties unless they have already been informed of them by him.

(2) An arbitrator may be challenged only if circumstances exist that give rise to justifiable doubts as to his impartiality or independence. A party may challenge an arbitrator appointed by him, or in whose appointment he has participated, only for reasons of which he becomes aware after the appointment has been made.

#### Article 13. Challenge procedure

(1) The parties are free to agree on a procedure for challenging an arbitrator, subject to the provisions of paragraph (3) of this article.

(2) Failing such agreement, a party who intends to challenge an arbitrator shall, within fifteen days of the constitution of the arbitral tribunal or after becoming aware of any circumstance referred to in article 12 (2), whichever is the later, send a written statement of the reasons for the challenge to the arbitral tribunal. Unless the challenged arbitrator withdraws from his office or the other party agrees to the challenge, the arbitral tribunal shall decide on the challenge.

(3) If a challenge under any procedure agreed upon by the parties or under the procedure of paragraph (2) is not successful, the challenging party may request, within fifteen days after having received notice of the decision rejecting the challenge, the Court specified in article 6 to decide on the challenge, which decision shall be final; while such a request is pending, the arbitral tribunal, including the challenged arbitrator, may continue the arbitral proceedings.

#### Article 14. Failure or impossibility to act

If an arbitrator becomes de jure or de facto unable to perform his functions or for other reasons fails to act, his mandate

terminates if he withdraws from his office or if the parties agree on the termination. Otherwise, if a controversy remains concerning any of these grounds, any party may request the Court specified in article 6 to decide on the termination of the mandate, which decision shall be final.

#### Article 14 bis

The fact that, in cases under article 13 (2) or 14, an arbitrator withdraws from his office or a party agrees to the termination of the mandate of an arbitrator does not imply acceptance of the validity of any ground referred to in article 12 (2) or 14.

#### Article 15. Appointment of substitute arbitrator

Where the mandate of an arbitrator terminates under article 13 or 14 or because of his withdrawal from office for any other reason or because of the revocation of his mandate by agreement of the parties or in any other case of termination of his mandate, a substitute arbitrator shall be appointed according to the rules that were applicable to the appointment of the arbitrator being replaced, unless the parties agree otherwise.

### CHAPTER IV. JURISDICTION OF ARBITRAL TRIBUNAL

#### Article 16. Competence to rule on own jurisdiction

(1) The arbitral tribunal has the power to rule on its own jurisdiction, including any objections with respect to the existence or validity of the arbitration agreement. For that purpose, an arbitration clause which forms part of a contract shall be treated as an agreement independent of the other terms of the contract. A decision by the arbitral tribunal that the contract is null and void shall not entail ipso jure the invalidity of the arbitration clause.

(2) A plea that the arbitral tribunal does not have jurisdiction shall be raised not later than in the statement of defence. A party is not precluded from raising such a plea by the fact that he has appointed, or participated in the appointment of an arbitrator. A plea that the arbitral tribunal is exceeding the scope of its authority shall be raised promptly after the arbitral tribunal has indicated its intention to decide on the matter alleged to be beyond the scope of its authority. The arbitral tribunal may, in either case, admit a later plea if it considers the delay justified.

(3) The arbitral tribunal may rule on a plea referred to in paragraph (2) either as a preliminary question or in an award on the merits. In either case, a ruling by the arbitral tribunal that it has jurisdiction may be contested by any party only in an action for setting aside the arbitral award.

#### Article 18. Power of arbitral tribunal to order interim measures

Unless otherwise agreed by the parties, the arbitral tribunal may, at the request of a party, order any party to take such interim



measure of protection as the arbitral tribunal may consider necessary in respect of the subject-matter of the dispute. The arbitral tribunal may require any party to provide security for the costs of such measure.

#### CHAPTER V. CONDUCT OF ARBITRAL PROCEEDINGS

##### Article 19. Determination of rules of procedure

(1) Subject to the provisions of this Law, the parties are free to agree on the procedure to be followed by the arbitral tribunal in conducting the proceedings.

(2) Failing such agreement, the arbitral tribunal may, subject to the provisions of this Law, conduct the arbitration in such manner as it considers appropriate. The power conferred upon the arbitral tribunal includes the power to determine the admissibility, relevance, materiality and weight of any evidence.

(3) In either case, the parties shall be treated with equality and each party shall be given a full opportunity of presenting his case.

##### Article 20. Place of arbitration

(1) The parties are free to agree on the place of arbitration. Failing such agreement, the place of arbitration shall be determined by the arbitral tribunal.

(2) Notwithstanding the provisions of paragraph (1) of this article, the arbitral tribunal may, unless otherwise agreed by the parties, meet at any place it considers appropriate for consultation among its members, for hearing witnesses, experts or the parties, or for inspection of goods, other property, or documents.

##### Article 21. Commencement of arbitral proceedings

Unless otherwise agreed by the parties, the arbitral proceedings in respect of a particular dispute commence on the date on which a request for that dispute to be referred to arbitration is received by the respondent.

##### Article 22. Language

(1) The parties are free to agree on the language or languages to be used in the arbitral proceedings. Failing such agreement, the arbitral tribunal shall determine the language or languages to be used in the proceedings. This agreement or determination, unless otherwise specified therein, shall apply to any written statement by a party, any hearing and any award, decision or other communication by the arbitral tribunal.

(2) The arbitral tribunal may order that any documentary evidence shall be accompanied by a translation into the language or languages agreed upon by the parties or determined by the arbitral tribunal.

##### Article 23. Statements of claim and defence

(1) Within the period of time agreed by the

parties or determined by the arbitral tribunal, the claimant shall state the facts supporting his claim, the points at issue and the relief or remedy sought, and the respondent shall state his defence in respect of these particulars. The parties may annex to their statements all documents they consider to be relevant or may add a reference to the documents or other evidence they will submit.

(2) Unless otherwise agreed by the parties, either party may amend or supplement his claim or defence during the course of the arbitral proceedings, unless the arbitral tribunal considers it inappropriate to allow such amendment having regard to the delay in making it or prejudice to the other party or any other circumstances.

##### Article 24. Hearings and written proceedings

(1) Subject to any contrary agreement by the parties, the arbitral tribunal shall decide whether to hold oral hearings or whether the proceedings shall be conducted on the basis of documents and other materials.

(1 bis) Notwithstanding the provisions of paragraph (1) of this article, if a party so requests, the arbitral tribunal may, at any appropriate stage of the proceedings, hold hearings for the presentation of evidence or for oral argument.

(2) The parties shall be given sufficient advance notice of any hearing and of any meeting of the arbitral tribunal for inspection purposes.

(3) All statements, documents or other information supplied to the arbitral tribunal by one party shall be communicated to the other party. Also any expert report or other document, on which the arbitral tribunal may rely in making its decision, shall be communicated to the parties.

##### Article 25. Default of a party

Unless otherwise agreed by the parties, if, without showing sufficient cause,

(a) the claimant fails to communicate his statement of claim in accordance with article 23 (1), the arbitral proceedings shall be terminated;

(b) the respondent fails to communicate his statement of defence in accordance with article 23 (1), the arbitral tribunal shall continue the proceedings without treating such failure as an admission of the claimant's allegations;

(c) any party fails to appear at a hearing or to produce documentary evidence, the arbitral tribunal may continue the proceedings and make the award on the evidence before it.

##### Article 26. Expert appointed by arbitral Tribunal

(1) Unless otherwise agreed by the parties, the arbitral tribunal

(a) may appoint one or more experts to

report to it on specific issues to be determined by the tribunal;

(b) may require a party to give the expert any relevant information or to produce, or to provide access to, any relevant documents, goods or other property for his inspection.

(2) Unless otherwise agreed by the parties, if a party so requests or if the arbitral tribunal considers it necessary the expert shall, after delivery of his written or oral report, participate in a hearing where the parties have the opportunity to interrogate him and to present expert witnesses in order to testify on the points at issue.

Article 27. Court assistance in taking evidence

(1) In arbitral proceedings held in this State or under this Law, the arbitral tribunal or a party with the approval of the arbitral tribunal may request from a competent court of this State assistance in taking evidence. The request shall specify:

(a) the names and addresses of the parties and the arbitrators;

(b) the general nature of the claim and the relief sought;

(c) the evidence to be obtained, in particular,

(i) the name and address of any person to be heard as witness or expert witness and a statement of the subject-matter of the testimony required;

(ii) the description of any document to be produced or property to be inspected.

(2) The court may, within its competence and according to its rules on taking evidence, execute the request either by taking the evidence itself or by ordering that the evidence be provided directly to the arbitral tribunal.

CHAPTER VI. MAKING OF AWARD AND TERMINATION OF PROCEEDINGS

Article 28. Rules applicable to substance of dispute

(1) The arbitral tribunal shall decide the dispute in accordance with such rules of law as are chosen by the parties as applicable to the substance of the dispute. Any designation of the law or legal system of a given State shall be construed, unless otherwise expressed, as directly referring to the substantive law of that State and not to its conflict of laws rules.

(2) Failing any designation by the parties, the arbitral tribunal shall apply the law determined by the conflict of laws rules which it considers applicable.

(3) The arbitral tribunal shall decide ex aequo et bono or as amiable compositeur only

if the parties have expressly authorized it to do so.

Article 29. Decision making by panel of arbitrators

In arbitral proceedings with more than one arbitrator, any decision of the arbitral tribunal shall be made, unless otherwise agreed by the parties, by a majority of all its members. However, the parties or the arbitral tribunal may authorize a presiding arbitrator to decide questions of procedure.

Article 30. Settlement

(1) If, during arbitral proceedings, the parties settle the dispute, the arbitral tribunal shall terminate the proceedings and, if requested by the parties and not objected to by the arbitral tribunal, record the settlement in the form of an arbitral award on agreed terms.

(2) An award on agreed terms shall be made in accordance with the provisions of article 31 and shall state that it is an award. Such an award has the same status and effect as any other award on the merits of the case.

Article 31. Form and contents of award

(1) The award shall be made in writing and shall be signed by the arbitrator or arbitrators. In arbitral proceedings with more than one arbitrator, the signatures of the majority of all members of the arbitral tribunal shall suffice, provided that the reason for any omitted signature is stated.

(2) The award shall state the reasons upon which it is based, unless the parties have agreed that no reasons are to be given or the award is an award on agreed terms under article 30.

(3) The award shall state its date and the place of arbitration as determined in accordance with article 20 (1). The award shall be deemed to have been made at that place.

(4) After the award is made, a copy signed by the arbitrators in accordance with paragraph (1) of this article shall be delivered to each party.

Article 32. Termination of proceedings

(1) The arbitral proceedings are terminated by the final award or by agreement of the parties or by an order of the arbitral tribunal in accordance with paragraph (2) of this article.

(2) The arbitral tribunal

(a) shall issue an order for the termination of the arbitral proceedings when the claimant withdraws his claim, unless the respondent objects thereto and the arbitral tribunal recognizes a legitimate interest on his part in obtaining a final settlement of the dispute;

(b) may issue an order of termination when the continuation of the proceedings for any other reason becomes unnecessary or

inappropriate.

(3) The mandate of the arbitral tribunal terminates with the termination of the arbitral proceedings, subject to the provisions of articles 33 and 34 (4).

Article 33. Correction and interpretation of awards and additional awards

(1) Within thirty days of receipt of the award, unless another period of time has been agreed upon by the parties, a party with notice to the other party, may request the arbitral tribunal:

(a) to correct in the award any errors in computation, any clerical or typographical errors or any errors of similar nature;

(b) to give an interpretation of a specific point or part of the award.

The arbitral tribunal shall make the corrections or give the interpretation within thirty days of receipt of the request. The interpretation shall form part of the award.

(2) The arbitral tribunal may correct any error of the type referred to in paragraph (1) (a) of this article on its own initiative within thirty days of the date of the award.

(3) Unless otherwise agreed by the parties, a party, with notice to the other party, may request, within thirty days of receipt of the award, the arbitral tribunal to make an additional award as to claims presented in the arbitral proceedings but omitted from the award. The arbitral tribunal shall make the additional award within sixty days, if it considers the request to be justified.

(4) The arbitral tribunal may extend, if necessary, the period of time within which it shall make a correction, interpretation or an additional award under paragraph (1) or (3) of this article.

(5) The provisions of article 31 shall apply to a correction or interpretation of the award and to an additional award.

CHAPTER VII. RECOURSE AGAINST AWARD

Article 34. Application for setting aside as exclusive recourse against arbitral award

(1) Recourse to a court against an arbitral award made [in the territory of this State] [under this Law] may be made only by an application for setting aside in accordance with paragraphs (2) and (3) of this article.

(2) An arbitral award may be set aside by the Court specified in article 6 only if

(a) the party making the application furnishes proof that:

(i) the parties to the arbitration agreement referred to in article 7 were, under the law applicable to them, under some incapacity, or the said agreement is not valid under the law to which the parties

have subjected it or, failing any indication thereon, under the law of this State; or

(ii) the party making the application was not given proper notice of the appointment of the arbitrator(s) or of the arbitral proceedings or was otherwise unable to present his case; or

(iii) the award deals with a dispute not contemplated by or not falling within the terms of the submission to arbitration, or contains decisions on matters beyond the scope of the submission to arbitration, provided that, if the decisions on matters submitted to arbitration can be separated from those not so submitted, only that part of the award which contains decisions on matters not submitted to arbitration may be set aside; or

(iv) the composition of the arbitral tribunal or the arbitral procedure was not in accordance with the agreement of the parties, unless such agreement was in conflict with a provision of this Law from which the parties cannot derogate, or, failing such agreement, was not in accordance with this Law; or

(b) the Court finds that:

(i) the subject-matter of the dispute is not capable of settlement by arbitration under the law of this State; or

(ii) the award or any decision contained therein is in conflict with the public policy of this State.

(3) An application for setting aside may not be made after three months have elapsed from the date on which the party making that application had received the award or, if a request had been made under article 33, from the date on which that request had been disposed of by the arbitral tribunal.

(4) The Court, when asked to set aside an award, may, where appropriate and so requested by a party, suspend the setting aside proceedings for a period of time determined by it in order to give the arbitral tribunal an opportunity to resume the arbitral proceedings or to take such other action as in the arbitral tribunal's opinion will eliminate the grounds for setting aside.

CHAPTER VIII. RECOGNITION AND ENFORCEMENT OF AWARDS

Article 35. Recognition and enforcement

(1) An arbitral award, irrespective of the

country in which it was made, shall be recognized as binding and, upon application in writing to the competent court, shall be enforced subject to the provisions of this article and of article 36.

(2) The party relying on an award or applying for its enforcement shall supply the duly authenticated original award or a duly certified copy thereof, and the original arbitration agreement referred to in article 7 or a duly certified copy thereof. If the award or agreement is not made in an official language of this State, the party shall supply a duly certified translation thereof into such language. \*

(3) Filing, registration or deposit of an award with a court is not a pre-condition for its recognition or enforcement in this State.

Article 36. Grounds for refusing recognition or enforcement

(1) Recognition or enforcement of an arbitral award, irrespective of the country in which it was made, may be refused only:

(a) at the request of the party against whom it is invoked, if that party furnishes to the competent court where recognition or enforcement is sought proof that:

(i) the parties to the arbitration agreement referred to in article 7 were, under the law applicable to them, under some incapacity, or the said agreement is not valid under the law to which the parties have subjected it or, failing any indication thereon, under the law of the country where the award was made; or

(ii) the party against whom the award is invoked was not given proper notice of the appointment of the arbitrator(s) or of the arbitral proceedings or was otherwise unable to present his case; or

(iii) the award deals with a dispute not contemplated by or not falling within the terms of the submission to arbitration, or it contains decisions on matters beyond the scope of the submission to arbitration, provided that, if the decisions on matters submitted to arbitration can be separated from those not so submitted, that part of the award which contains decisions on matters submitted to arbitration may be recognized and enforced; or

\* The conditions set forth in this paragraph are intended to set maximum standards. It would, thus, not be contrary to the harmonisation to be achieved by the model law if a State retained even less onerous conditions.

(iv) the composition of the arbitral tribunal or the arbitral procedure was not in accordance with the agreement of the parties or, failing such agreement, was not in accordance with the law of the country where the arbitration took place; or

(v) the award has not yet become binding on the parties or has been set aside or suspended by a court of the country in which, or under that law of which, that award was made; or

(b) if the court finds that:

(i) the subject-matter of the dispute is not capable of settlement by arbitration under the law of this State; or

(ii) the recognition or enforcement of the award would be contrary to the public policy of this State.

(2) If an application for setting aside or suspension of an award has been made to a court referred to in paragraph (1) (a) (v) of this article, the court where recognition or enforcement is sought may, if it considers it proper, adjourn its decision and may also, on the application of the party claiming recognition or enforcement of the award, order the other party to provide appropriate security.

\* \* \* \* \*

Country profile - Peru

Legislation

A. Foreign Investments

1. Laws and Regulations in force

Decision No. 24, 47, 48, 70, 103, 109, 124, 125 of the Andean Pact.

Decree Laws 18900, 19533, 19534, 20827, 21826, 22535.

Resolution of the Board of Directors of CONITE No. 002-81-EFC/35.

2. Scope

Resolution No. 970-77-EF-35 provides that any corporation having direct foreign investment must declare before CONITE the name of their foreign investors, the amount of their participation in the paid-in capital existing at the close of the tax year 1971 as well as variations in such participation by reason of new contributions, capitalization by reinvestment and capitalization of credit accomplished since the beginning of the tax year referred to.

B. Industrial Property

1. Laws and regulations in force

Provision in the Constitution

General Law of Industry and Regulation

Decision 85 of the Comisión del Acuerdo de Cartagena.

2. Scope

Patents, drawings, industrial models, manufacturing trademarks, service trademarks, commercial names.

C. Technology Transfer

1. Laws and regulations in force

Article 137 of the constitution provides that the state authorities, registries and supervisors of transfer of foreign technology complement it with national technology, provided it promotes employment, capitalization of the country and contributes to the development consistent with the economic plans and integration policies.

Article 129 of the constitution provides that the State protects industrial and trade names, brands, designs and models. The contracts on the transfer of technology, patents and trademarks originating abroad are subject to the provisions set forth in Decisions 24, 84 and 85 of the Andean Pact approved by Decree Laws 18900, 21170 and 22532.

2. Scope

Resolution of the Board of Directors of CONITE No. 005-81-EFC-35.

1. All contracts related to the transfer of and license for the sale of technology, patents, trademarks or other elements of industrial domain originating abroad and which must operate in the national territory.

2. Includes:

(a) Supply of technical know-how through formulae, blueprints, diagrams, statements on elaboration and manufacture, instructions relating to procedures, specifications or practical advice related to execution, technical data, information regarding methods for the control, training and education of personnel, managing and administrative assistance or other forms of supply of technical know-how.

(b) License for the use of, or authorization to operate commercial systems.

(c) License for the sale of, or authorization to operate under trademarks.

(d) License for the use of, or authorization to operate under patents.

(e) License for the use of, or authorization for models, industrial drawings or other elements of industrial domain. (Technical services, understanding as such any specific sporadic and short-term services which do not constitute a supply of technical

data and which are paid for with a fee or tariff independent of the volume of production or sales, are not subject to this resolution.)

Restrictive practices

(a) Obligation to acquire or use capital goods, equipment, intermediate products, raw materials or other technology of the licensor or of a certain source, or to use permanently the personnel designated by the licensor.

(b) Licensor's rights to fix the selling or reselling prices for products manufactured from the compensation provided for in the contract.

(c) Restrictions relating to the production volume and structure.

(d) Prohibition of the use of rural technology.

(e) Limitations on the licensee's sales.

(f) Licensor's option to purchase in whole or in part.

(g) Licensee's obligation to transfer to the licensee the inventions or improvements obtained by reason of the use of the technology and patents.

(h) Obligation to pay for the technology, patents, trademarks or elements of industrial domain not utilized.

(i) Other restrictive practices with results similar to those indicated in the preceding items.

Taxation

The licensor is required to bear the withholding tax on technology transfer fees. The Dirección General de Contribuciones provides for a 55 per cent tax on intangibles (any payment measured in royalties as percentage of sales, production, etc.) on tangibles (technical assistance with no training involved) the rate is 16 per cent.

Competent approval authority

National Commission of Foreign Investment and Technology (CONITE)  
Avenida Abancay 500, office 634  
Lima 1, Peru.

Office Staffing:

Management - 2

Evaluation - Engineers - numerous, spread throughout various specialized institutes

Lawyers - 2 )  
  ) CONITE  
Economists - 5 )

Study/Evaluation: Done by lawyers and economists previously mentioned.

Competence

CONITE is the national competent authority for:

(a) The proposal and execution of the

national policy on foreign investment, technology and trademarks, enacting the corresponding regulations.

(b) The application of the rules on the treatment of foreign investment, technology and trademarks as well as on national investment, technology and trademarks made or authorized abroad.

(c) Evaluation of foreign investment, technology and trademark contributions.

(d) Other related matters.

#### Co-ordination

1. Ministerio de Industria, Turismo e Integración
2. Instituto de Investigaciones Tecnológicas Industrial y Normas Técnicas (IINTEC)
3. Instituto Geológico, Metalúrgico, Minero (INGEMET)
4. Ministerio de Energía y Minas
5. Ministerio de Pesca
6. Ministerio de Económico, Finanzas y Comercio
7. Dirección General de Contribuciones (DGC) on tax related matters.

#### Evaluation

Resolución del Directorio de CONITE No. 005-81-EPC-35 artículo 9. For evaluation purposes CONITE considers the following:

(a) Fulfilment of the legal requirements in force, especially the rules relating to this resolution.

(b) The contractual conditions existing in each type of activity on a national and international scale and the existing market conditions at the moment of executing the contract.

(c) Effects on technological development in such aspects as the productive process, licensee's capacity for assimilation, utilization of local services and resources, among others.

(d) Effects on the balance of payments and income generation.

(e) Nature, currency and scope of the technology.

(f) Contribution to specific development programmes which are of interest to the country or to the subregion, and effects on the environment.

\* \* \* \* \*

#### China enacts patent law

Until now, China had no patent law, but the Chinese Patent Office, which will administer the Law, already existed, having been established in 1980. Under the new Law, which will enter into force on 1 April 1985, foreigners may obtain patents in China provided that they are nationals of countries with which China has treaty or reciprocity relations in the field of patents. Foreign applicants for patents will have to be represented by one of the Chinese agencies which are being established for this purpose. The Law provides for the usual regime for claiming the priority of applications filed outside China.

Applications will be published after 18 months, and the applicant will have to ask for examination as to substance within three years of the filing of the application. If the Patent Office finds that the invention is patentable, it will publish it for opposition, and, depending on the result of the opposition proceedings, will grant or refuse the patent.

To be patentable, an invention must have world-wide novelty.

Patents will be obtainable in China for the usual fields of technology in which patents are granted, except that for food, beverages, and pharmaceutical and chemical products, as well as for animal and plant varieties, only the processes for making them will be patentable. However, where a product, whether chemical or other, is similar to a product produced by a patented process, the burden of proof will be on the producer of the similar product to show that he did not use the patented process.

The Law also provides for the grant of patents for utility models and industrial designs.

The duration of the patent for inventions is fifteen years from the date of filing. The duration of utility models and industrial designs is five years extendable for an additional period of three years.

There are various legal remedies provided for parties dissatisfied with the decisions of the Patent Office, and there are detailed provisions for preventing and sanctioning infringement, including criminal sanctions in serious cases.

English and French translations of the Chinese Patent Law will shortly be published by the Chinese Patent Office. They will be available from WIPO.

(Source: WIPO Press Release No. 35, Geneva, 13 March 1984.)

## *Registry news*

#### New appointments at Portugal's Foreign Investment Institute

José Viana Baptista, 52, was appointed chairman of the Foreign Investment Institute.

The new chairman has a degree in mechanical engineering from the Technical University of Lisbon. He was Minister of Transport and Communications in 1980/81 and Minister of Housing, Public Works and Transport in 1981/83.

At the time of his appointment he was president and chief executive of A.N.A.-Empresa Pública de Aeroportos e Navegação Aérea, a post he occupied in 1978/1980.

Mr. António Santos Labisa, 54, has been appointed as a member of the Board of Directors of the Foreign Investment Institute. An economics graduate with a degree from the Technical University of Lisbon, Mr. Antonio Labisa was chairman of C.N.N.-Companhia Nacional de Navegação since January 1982 and was formerly vice-chairman of G.A.S.-Gabinete da Area de Sines (1979/1982) and alternate executive director of the World Bank (1978/1979).

All TIES members and collaborators will join UNIDO in wishing Mrs. Elsa de Sousa Ferreira every success in her new job. She is well remembered as an active participant in TIES activities while she worked at the Foreign Investment Institute, and she assures us of future collaboration if the need arises in her new capacity as a Member of the Board for TAP - Air Portugal.

\* \* \* \* \*

#### Experience of the National Technology Transfer Registry of Mexico, with respect to the registration of software contracts

Article 2, paragraph (m), the Law on the Control and Registration of the Transfer of Technology and the Use and Operation of Patents and Trade Marks refers to computer software (computation programmes) as subject to registration.

Within a year of the introduction of the mandatory registration of computer software, the Registry found itself faced with a number of problems involving the analysis of programmes with an eye to determining those which, in terms of the national interest, required registration and those which because of their relative importance, it would be best not to register.

The Regulations governing the Technology Law (Ley de Tecnología) did much to clear up many of the doubts which had arisen during the first months of the Law's application. For example, article 23 of the Regulations exempts from the registration requirement programmes whose sole purpose is recreation or entertainment, along with incorporated (built-in) operational systems and electronic systems whose purpose is not the management of information.

The following conclusions have emerged from this framework in the light of the experience of one year of the application of the Law.

A total of 296 contracts were submitted

to the National Technology Transfer Registry (RNIT) for formal registration; of these, 204 were approved and 92 were denied.

A sizeable percentage of the industrial enterprises with sufficient economic capacity to be part of the select group of data-processing users consists of branches or affiliates of foreign companies. In the data-processing area, these enterprises are supplied by the information systems of their parent companies, most of which are based in the United States of America. As a result, the major data-processing facilities in the industrial sector are heavily dependent on the United States and the effort at local technological development is very limited.

#### Financial sector

The financial sector is comprised of enterprises (banks, financing institutions, insurance companies, etc.) whose function consists essentially of the management of information vital to this group. This is evident from the demand for this information as expressed in terms of costs.

Because of this situation, the national banking community, specifically its four most important institutions (BANCOMER, BANAMEX, COMERME and BANCA SERFIN), leads the country in the development of data-processing. Mexican banking makes use of more than 80 per cent of the data-processing applications to be found in world banking practice and spends proportionately more money on information systems than do the other sectors of the economy.

#### Commercial and service sector

These sectors consist mainly of majority-ownership groups - facilities which directly sell computer services and enterprises which require credit control systems. Other facilities belong to consultancy organizations and the like.

Market research suggests that a large proportion of enterprises call on the information services of third parties on a regular basis. On the other hand, the only computer service centres which are in a position of being able to plan their development independently are those which belong to groups and corporations which are their natural customers. Some of the most important are: DESC, DINAMICA, KRONOS, PSI and TELEINFORMATICA DE MEXICO.

Other organizations, in the face of the need to operate credit systems, have created important computer centres. These are both credit organizations, such as American Express, Promoción y Operación, etc., and commercial enterprises whose expansion-oriented policies have made necessary the introduction of credit sales systems; examples of this group are Puerto de Liverpool, Sears and High Life.

#### Educational sector

For a variety of reasons, the use of data-processing in the educational system has been limited, even though the Autonomous National University of Mexico (UNAM) was one

of the pioneers in the history of the country's information sciences. The 1977 survey of data-processing units showed that, as in the other production sectors, in education the computer tends to be used for administrative tasks (enrolment, examinations, payroll management, etc.), with less money spent on research and planning. The proper use of the computer as a tool for more effective teaching methods has not yet come about.

As a customer, education consumes only about 5.3 per cent of the information resources available. Most of the installations in use are mini-computers employed for school administration and for research programmes. Until the computer is integrated into the production process, the demand in this important sector will continue to be low.

#### Public administration

The public sector has been a leader in the assimilation of data-processing technology in the country since the installation of the first computers in 1956. Because of the nature, magnitude and complexity of the problems with which government must deal on a daily basis, the use of this tool has become indispensable. Official government agencies make up the most important organized group of users in the country, who are also the most independent in their decisions as far as suppliers are concerned.

In accordance with the Federal Budget of Expenditure, in 1978 government spending on data-processing (3,602 million Mexican pesos) represented only 0.41 per cent of total outlays.

Of the total demand, the economic policy sector (SHCP and SPP) accounts, in absolute terms, for the highest level of expenditure for information services. This is a reflection of the importance which this sector is acquiring as the focal point for national decision-making in the areas of administration, monetary and credit policy, etc.

Of the 3,905 million pesos budgeted for information services in the public sector (3,602 million for public administration plus 116 million for the State governments and 187 million in subsidies for the universities), more than 50 per cent goes for the salaries of data-processing personnel, with 34 per cent absorbed in annual payment for the equipment, most of which is leased.

#### Geographical distribution

The concentration pattern characterizing the consumption of computer service resources in the country is determined by the geographical distribution of economic activity, especially secondary activity (industry) and tertiary (trade and services).

The country's principal centres of socio-economic development are also the zones where there is the greatest use of computer services. The metropolitan area of Mexico City accounts for 81 per cent of the available

computation capacity, and together with Monterrey (9 per cent) and Guadalajara (3 per cent) is the main centre for the use of this technology, with 93 per cent of all data-processing equipment to be found in these three areas.

This situation can be explained by the fact that it does not cost the same amount to provide data-processing services in Mexico City, where 4/5 of all the equipment is located, as in remote areas in the provinces, where it would be economically unsound to maintain properly equipped computer centres in permanent operation.

#### (a) Suppliers of information equipment and services

In the world-wide context, the Mexican data-processing market has no impact on the commercial activities of the computer manufacturers, since they are able to manage this market in such ways that its expansion is in response to a specific strategy. Accordingly, the country is dealing not with a group of suppliers of goods and services, but with a set of commercial policies based on objectives that are irrelevant or inimical to Mexican national interests.

Thus, the strategy begins at the decision-making level of the parent company, which monitors and plans all foreseeable developments in the data-processing area with an eye towards the use of its influence for the marketing of its products in the various markets served by its representatives or affiliates.

In accordance with this strategy, the affiliates are basically designed to operate as the distributors or commercial representatives of the parent company, not only for the products which might be manufactured in the country, but also for the sale of all the components which the transnational corporation as such may produce. For this reason, its principal activity is limited to the import and sale of these products, given that, as a "national" enterprise, it is allowed to do this.

Accordingly, this method of operation on the part of the parent corporation is based on a financial, production and commercial structure which minimizes any risks that might occur anywhere in the world. To achieve this structure, small cells (branch companies or affiliates) are established, which are then assigned predetermined sales quotas; in turn, these quotas are set according to the growth requirements of the parent corporation itself. Then, once the market for which each of the affiliates is responsible has been evaluated, the next step is to plan actual production in physical units.

As a general rule, computers are sold against a delivery date which may be as much as two years in the future; i.e. sales may often involve a piece of equipment that does not yet exist. As a result, the transnationals do business under the convenient conditions of markets secured through letters of intent.



In marketing the equipment, the affiliate makes use of patents, trade marks and technologies to which the parent corporation holds title through international registration, with the consequence that the user is obliged to pay not only for the actual equipment, but also royalties for the use of patents, trade marks and technical processes.

In setting the sales quotas for its affiliates, the parent company does this by assigning the affiliate a total amount, expressed not in physical units but in monetary terms, as the most advantageous way of repatriating the profits of its affiliates without them violating the national laws of the countries in which they operate. As a result, the affiliate operates just slightly above its break-even point, since nearly all of what it earns is sent abroad under the headings already mentioned, leaving a balance for costs and operating expenses plus a small profit margin to disguise its status of dependence on the parent corporation.

The implication of this kind of operational and financial strategy on the part of the parent corporation is that the affiliate must submit to the policy directives which the parent firm imposes on it; this factor, coupled with the technical complexity of the physical goods which the affiliate markets, has led to a situation in which the customer has become the sole victim. The supplier knows that the customer's information requirements can only be met through the acquisition or leasing of his products, with the consequence that what might well be called a "captive market" is created. This situation will remain the same even if the user should decide to replace the data-processing equipment of one supplier by that of another, since the tactics and modus operandi of all the suppliers are similar.

Until 1976, the affiliates of the transnational corporations controlled the Government's policy with respect to the development of data-processing in Mexico, primarily in matters having to do with the import of equipment and the acceptance of new suppliers in the national market through the machinery of the Import Committees of the former Ministry of Industry and Commerce.

Since 1977, control in this area has been put in the hands of an ad hoc body within the SPP, <sup>1/</sup> but there is still a long way to go before genuine national sovereignty over this "crucial activity" is achieved.

(b) Training of human resources

In a modern society, the availability of trained human resources, in the numbers and with the skills required, is a basic condition for the successful performance of any activity. As a sustained function, data-processing is a complex and changing technology, also subject to this dictum.

At the present time, the unsatisfied demand has been estimated at about 15,000 data-processing specialists in Mexico,

<sup>1/</sup> Ministry of Budget and Planning.

a figure which reveals the severe deficiency which must be remedied in order to surmount one of the main obstacles to the expansion of this field.

The problem of the shortage of trained specialists first made itself known in the country around the period 1966-1967. Prior to that time, the data-processing sector had been able to draw on a pool of qualified personnel, trained in the use of electromechanical equipment, known as single-register equipment.

Because the applications of the second-generation computers were similar to those of the centres equipped with the single-register models, the technicians operating these computers were easily able to make the transition to the electronic equipment after only some basic training.

Towards the beginning of the 1970s, the old operators and other staff at the single-register centres became employees and officials of the electronic data-processing units, and there suddenly arose the problem of the lack of suitably trained specialists. The computer manufacturers took note of this situation, realizing that if they were to be able to sell their new equipment models they had to undertake a major effort in the personnel training area - which, moved by the profit motive, they in fact did.

At first, most of the professional training courses were organized by the manufacturers themselves, often at their own plants. At the same time, compelled by the requirements of research and development, the manufacturers sought to provide specialized training for high-level engineers, on the one hand, and for technically literate sales staff, on the other.

By around 1967, the growing demand for training arising out of the interest which this technology had begun to awaken in broad sectors of the population started to exceed what was being offered by the equipment manufacturers in the way of training courses.

It was at that time that there first made their appearance the commercial electronic computer schools, most of which were sponsored by the actual suppliers, who offered special terms for the leasing of equipment and the supply of teaching materials and accessories.

By 1978, more than 60 training establishments of this type were operating in the country, offering basic courses in coding, programming and what they called "systems analysis".

The academic requirements for admission to these trade schools, where they exist at all, are minimal; analysis and programming courses can be found for which the admission requirements are less than a completed secondary education. In addition, most of these schools lack the right kind of practical equipment with which to complement the theoretical aspects of the training. The study programme curricula suffer from the absence of any standard criteria, with the result that there is considerable non-uniformity in the teaching approaches of different institutions. What is more, the

knowledge displayed by the students completing these programmes is usually superficial.

A recent survey conducted by the SPP in 1977 revealed that the principal source of training for data-processing personnel in Mexico has been the suppliers of the computer equipment, and foremost among them the IBM Corporation, which has been involved in 52 per cent of all the courses given. Following in order of importance are the universities, with 18 per cent, and the private commercial schools, with 15 per cent (table 3).

Table 3

Sources of training	Relative participation * %
Equipment suppliers (IBM)	67 (52)
Universities	18
Commercial schools	15

\* There is some overlap in the participation of the various training sources, and for this reason the figures represent a general estimate.

Source: Censo de Unidades de Informática, DPN-SPP, 1977.

It should be noted that graduate-level programmes were first introduced in 1968 at the Monterrey Technological Institute of Higher Studies (ITESM) with a programme in Computer System Engineering; however, as early as 1962 the Higher College of Mechanical and Electrical Engineering (ESIME) of the National Polytechnical Institute had started to offer students data-processing training programmes at the master's level.

Currently, there are 162 institutions of higher education offering a total of 172 study programmes which, in one way or another, incorporate specific subject areas.

In this context, because of the promotion and popularization of the concept of electronic data-processing for modern administration, it became necessary, during the 1970s, to make the subject of computer-assisted data-processing part of business administration courses. Frequently, because of the lack of qualified teachers and in-house computer equipment, these programmes have gradually degenerated into courses or laboratory work on programming and management applications, and even into simple theoretical instruction in the use of the COBOL computer language.

There is the evident fact that the national educational system continues to lag in its specialist training programmes, since at the higher level only 18.5 per cent of the demand is being met, and at the intermediate level 19 per cent. Moreover, there is an annual deficit of 500 and 700 specialists, respectively, at these levels, which yields a cumulative deficit for 1980 of 2,500 and 3,500 specialists, respectively.

In a study prepared by the Rosenbluth Foundation it is estimated that the number of personnel working in the data-processing area reached 62,020 in 1980, and it is calculated that by 1985 and 1990 this figure will rise to 84,300 and 108,600, respectively.

These facts reveal that after 24 years of data-processing in Mexico, and 21 years after the introduction of the first information sciences programme in the country's educational system, education is still, generally speaking, in the hands of the suppliers.

## 2. Effects of the import of computer systems

### (a) Dependence on foreign suppliers

Virtually all the suppliers of information resources and services operating in the domestic market are affiliates of transnational corporations. Specifically, there are seven transnational companies which have cornered the Mexican market: IBM, NCR, UNIVAC, BURROUGHS INC., HONEYWELL INFORMATION SYSTEMS, CONTROL DATA INC, and DIGITAL EQUIPMENT INC. Reference is also made to the fact that until 1976 the affiliates of the transnational corporations controlled government policy regarding data-processing in Mexico, particularly with respect to the import of equipment and the acceptance of new suppliers in the national market through the machinery of the import Committees of the former Ministry of Industry and Commerce.

In addition, since software is an intangible item, its import cannot be classified and controlled under the customs system.

Thus, the influence of the United States in the data-processing area in Mexico is an incontrovertible fact, one of the consequences of which has been to generate a tendency to favour, in the information sciences field, patterns of consumption copied from foreign models. This has negative effects for the national industry, which is in this way encouraged to follow these patterns in the technological area, despite the fact that its conditions, and its requirements as well, are quite different.

The effect of these factors has been to inhibit the creation and consolidation of an applied research capability in line with the technological needs of the data-processing branch. Instead, the transfer of foreign technology has been promoted, with no serious effort made to adapt this technology to local conditions. Our problems are very different, particularly with regard to the country's production and public sectors.

The repercussions of this situation are serious: as a dependent country, we are losing capitalizable surpluses to foreign suppliers, our production and income-distribution structures are being distorted, and our potential for technical and cultural progress is being diminished.

### (b) Impact on the balance of payments

Throughout the world, software is becoming exorbitantly more expensive. This

Royalty Payments Abroad (Current Prices)  
(in millions of dollars)

Year	GDP (1)	Royalties (2)	Software payments * (3)	SW payments as percentage of GDP (3/1)	SW payments as percentage of royalties (3/2)
1979	134,481	328.7	225 *	.167	68.5
1980	186,339	462.7	244 *	.131	52.7
1981	201,432	734.7	264 *	.131	35.9

\* Estimated figures

Sources: Bank of Mexico and the Department of Foreign Investments and Technology Transfer.

fact, coupled with the Mexican pesos' loss of purchasing power, will make it increasingly difficult for national operators to acquire the appropriate or strategic software of that kind that might be adapted to the specific requirements of our country.

For example, in 1980 a total of 5,037 computers were installed and operating; assuming an annual growth rate of 30 per cent, it has been estimated that by 1982 as many as approximately 8,500 computers could be in place. Now, considering that, on the average, \$10,000 are spent annually on imported software, this would mean the expenditure of \$85,000 a year, which, calculated at the rate of exchange of \$1.00 = 150 pesos, would represent for 1982 an amount in the order of 12,750 million pesos, equal, on the one hand, to the equity capital of 360 medium-sized enterprises and, on the other, to the annual salaries of 9,800 specialized technicians.

Even if there is evidence of a downward trend in the total payments for the acquisition of technology, one must keep in mind the fact that, since the period considered, the Mexican peso has been sharply devalued vis-à-vis foreign currencies. Accordingly, for the years 1979, 1980 and 1981 the figures in the table expressed in pesos would be 5,300 million, 5,860 million and 6,700 million, respectively (these are estimated figures), the effect of which is capital depletion within the country.

To this must be added the flight of foreign exchange as dividend payments in the case of affiliated companies, along with interest payments to the parent corporation on short- and long-term liabilities.

Consequently, software payments abroad have a negative impact, first of all, in terms of the accelerated growth of the deficit of the external sector of the Mexican economy and, secondly, within the economy itself, since these payments eat up major resources which might otherwise have been allocated to the institutions which are responsible for nearly all the country's efforts in the area of research and development. These institutions, for their part, suffer from a chronic shortage of money, a factor which has impeded the establishment of soundly based working groups and, on occasion, has led to a loss of trained specialists to foreign countries.

(c) Impact on the educational and scientific sectors

The suppliers of data-processing equipment and services play an important role in the training of personnel, but do so under rigid structures, since the people they train are encouraged more to promote the qualities of the manufacturer's products and equipment than to deal with the genuine needs of the users.

As a result, the sale of these products is backed up by the support of personnel trained in their operation. Moreover, the manufacturers achieve greater penetration of the market through courses or "independent" schools which train technicians for specific products.

The consequence of this policy is that both the technicians as well as the professionals are trained to carry out only such basic tasks as analysis, programming and equipment operation, and very few of them are capable of working in areas considered to be of fundamental or secondary importance to the national technological effort, such as the preparation of proposals, cost/time evaluations, progress reports and audio-visual presentations, along with decision-making to correct mistaken policies.

\* \* \* \* \*

National Workshop on Technology Transfer Policies and Planning, Kuala Lumpur 12-14 December, 1983

A National Workshop on Technology Transfer Policies and Planning was held recently in Kuala Lumpur from 12-14 December, 1983. It was jointly organized by the National Co-ordinating Council on Industrial Technology Transfer, the Ministry of Science, Technology and Environment, the National Council for Scientific Research and Development and the United Nations Industrial Development Organization (UNIDO).

About 120 participants from a wide cross-section of the Malaysian private and public sectors took part. A total 14 working papers were presented and among the various speakers were Professor Masaru Saito of Chuo University, Tokyo, Japan, Professor S. J. Hahn

of Hanyang University, South Korea, Dr. Shigeichi Moriguchi, University of Tokyo, Japan, Professor Zae Quan Kim of Incheon University, South Korea, Dr. Han Woung Pack of UNIDO, Dr. Rahim Bidin of SIRIM Malaysia, Mr. Burkhan Abdullah of the Industries Division, Ministry of Trade and Industry and Dr. Chee Peng Lim of the University of Malaya.

The main objectives of the workshop were to discuss matters related to policies and strategies in technology transfer; to examine models of technology transfer in developed and developing countries; to review the existing technology transfer mechanisms, priorities and strategies in support of industrial programmes; to discuss technology transfer issues in Malaysia, and to formulate recommendations to the relevant authorities. The overriding objective was to provide a national forum for interaction between government policy makers and industrial and corporate strategists as well as planners at the institutional or organizational levels. It was anticipated that the workshop would initiate the formulation of useful recommendations for enhancing technology transfer to Malaysian industries and relevant organizations. The recommendations put forward at this Workshop helped in the formulation of a national policy and plan for technology transfer.

A total of nine recommendations were formulated at the end of the workshop. These recommendations, which will be forwarded to the Malaysian Government for consideration are as follows:

- (1) The Government should review the existing infrastructure that should form the package for the technology transfer process. Although there are infrastructures that already exist, the deficiencies and potential of such institutions must be closely examined.
- (2) Information flow should be developed to ensure that there is a good system for information to be fully utilised by policy makers, entrepreneurs, R&D scientists and other parties.
- (3) Development of science and technology to a higher level is desirable in terms of improving the management of policies and plans by experienced scientists and technologists together with their relevant counterparts in the Government. It is also necessary for clear cut policies and plan on technology importation, modification and development to be implemented to ensure that the desired objectives are obtained.
- (4) It is necessary that R&D training and technical information be incorporated as part of the technology transfer agreements undertaken by the Government or the industries.
- (5) A review on the education policy

should be carried out in order to ensure that the education policy relates to the manpower requirements in view of the industrialization programme.

- (6) Development of in-house technological capability to ensure that the country will have the desired level of expertise to absorb imported technologies.
- (7) The Government should implement a financial policy to support the development of the necessary infrastructures for the implementation of a technology plan. Such financial policies should encourage the development of R&D, innovation and inventiveness and it shall also provide for appropriate rewards and incentives for the development of appropriate indigenous technology.
- (8) A total planning system must also be developed by the Government on science and technology to ensure that the co-ordination of efforts on the implementation of the industrialization programme be made effective.
- (9) Use of the media to educate the public and the private sector on the various functions as well as the availability of appropriate facilities should be intensified.

A selection of papers presented at the workshop are included under the heading "Publications" in this issue of the Newsletter.

## Publications

### Division of Policy Co-ordination

UNIDO/PC.75 Promotion of industrial co-operation between Latin American and African countries and organizations. Report and recommendations of the 1st International Latin American-African Symposium, Rio de Janeiro, Brazil, 1-5 August 1983

UNIDO/PC.97 Expert Group Meeting on downstream processing activities in the vegetable oils and fats industry in developing countries, Vienna, Austria, 6-8 February 1984. Report

### Division for Industrial Studies

UNIDO/IS.433 A statistical review of the world industrial situation 1983

UNIDO/IS.440 Guidelines for software production in developing countries

UNIDO/IS.441 Industrialization and social development, 1960-1980. Social aspects of industrialization. Working papers

- UNIDO/IS.442 The leather and leather products industry: trends, prospects and strategies for development. Sectoral studies series, No. 11, Volume I
- UNIDO/IS.442/ Add.1 The leather and leather products industry: trends, prospects and strategies for development. Addendum. A statistical digest. Sectoral studies series No. 11, Volume II
- UNIDO/IS.444 A silicon foundry to service developing countries' needs: a preliminary approach
- UNIDO/IS.445 The UNIDO programme of technological advances: Micro-electronics
- UNIDO/IS.446 Software engineering: A survey
- UNIDO/IS.447 Report on assessment of energy conservation measures at plant level in Malaysia
- UNIDO/IS.448 Strategies for increasing the production of tanning chemicals in developing countries. Sectoral working paper series No. 17
- UNIDO/IS.449 Guide book for factory engineers on energy conservation diagnosis
- UNIDO/IS.452 Biotechnology and the developing countries: applications for the pharmaceutical industry and agriculture
- Division of Industrial Operations
- UNIDO/IO.559 Small-scale computer-based system for industrial management in developing countries
- UNIDO/IO.573 Financial management and industrial accounting practices. An overview for the technical manager within an enterprise
- Fourth General Conference of UNIDO  
Vienna, Austria, 2-18 August 1984
- ID/CONF.5/9 Item 5 (a) Accelerated development of human resources for industrial development. Background paper
- ID/CONF.5/12 Item 5 (f) Policies and measures for domestic industrial processing of raw materials in developing countries. Background paper
- ID/CONF.5/13 Item 5 (c) Mobilizing of financial resources for industrial development. Background paper
- ID/CONF.5/19 Item 5 (c) Mobilizing of financial resources for industrial development. Issue paper
- ID/CONF.5/20 Item 5 (f) Policies and measures for domestic industrial processing of raw materials in developing countries. Issue paper
- ID/CONF.5/21 Item 5 (a) Accelerated development of human resources for industrial development. Issue paper
- ID/CONF.5/23 Item 7. UNIDO's co-ordinating role in the United Nations system on industrial development. Issue paper
- ID/CONF.5/24 Item 7. UNIDO's co-ordinating role in the United Nations system on industrial development. Background paper
- ID/CONF.5/25 Item 6. The industrial development decade for Africa: Review of progress, and proposals on ways and means to attain its objectives. Background paper
- ID/CONF.5/26 Item 6. The industrial development decade for Africa: Review of progress, and proposals on ways and means to attain its objectives. Issue paper
- Third Consultation on the Leather and Leather Products Industry  
Innsbruck, Austria, 16-20 April 1984
- ID/WG.411/2 Checklist for contractual agreements in the tanning sector between enterprises from developed and developing countries. Background paper for issue no. 1
- ID/WG.411/3 Component and auxiliaries manufacture for the shoe and other leather products industry in the developing countries
- ID/WG.411/4 Soft leather substitute materials and their impact on the international leather and leather products trade
- ID/WG.411/5 Issue no. 1. Measures to maximize the potential of the leather and leather products industry in developing countries
- Selection of papers presented at the National Workshop on Technology Transfer Policies and Planning, Kuala Lumpur, Malaysia
- Internal Transfer and Technology Transfer from Abroad: Japanese Experience (ID/WG.410/3)  
by: Prof. Masaru Seito
- Assessment and Evaluation of Technology Needs in Relation to National and Socio-Economic Priorities (ID/WG.410/2)  
by: Prof. S.J. Hahn

Case Study of Japanese Experience of  
Technology Transfer in Electrical/Electronic  
Industry (ID/WG.410/1)

by: Dr. Shigeichi Moriguchi

Case Study of Korean Experience of Technology  
Transfer in Heavy Industry (ID/WG.410/4)

by: Prof. Zae Quan Kim

Internal Technology Transfer - Role of  
Research Institutes, Technology Transfer  
Agents and Universities in Relation to  
Commercialization of Technology - (ID/WG.410/5)

by: Prof. S.J. Hahn

## *Meetings*

14-30 May - Technical Course on Criteria for  
the Selection of Woodworking Machines, Milano,  
Italy.

19-26 May - Iron and Steel Industry Seminar,  
Karachi, Pakistan.

21-25 May - Second Expert Group Meeting on  
Industrial Planning, Kiev, USSR.

27 May - 2 June - Iron and Steel Industry  
Study Tour, India.

31 May - 1 June - Joint UNIDO/ICPTU Seminar on  
Selected Issues of World Industrial  
Restructuring, VIC, Vienna, Austria.

4-7 June - Investment Promotion Meeting for  
Nepal, Kathmandu, Nepal.

2-5 July - Investor's Forum for Colombia,  
Bogotá, Colombia.

10-12 September - Expert Group Meeting on the  
Energy-related Technology and Equipment, VIC,  
Vienna, Austria.

8-13 October - Ninth Meeting of Heads of  
Technology Transfer Registries, Beijing, China.

15-19 October - Second Consultation on the  
Food-processing Industry with special emphasis  
on Vegetable Oils and Fats, Copenhagen,  
Denmark.

---

---

### REQUEST FOR NEWSLETTER

For new subscribers only

UNITO  
TIES Newsletter  
Development and Transfer  
of Technology Branch  
P.O. Box 300  
A-1000 Vienna, Austria

Please type or print in block letters

NAME .....

TITLE .....

ORGANIZATION .....

ADDRESS .....

CITY .....

COUNTRY .....

