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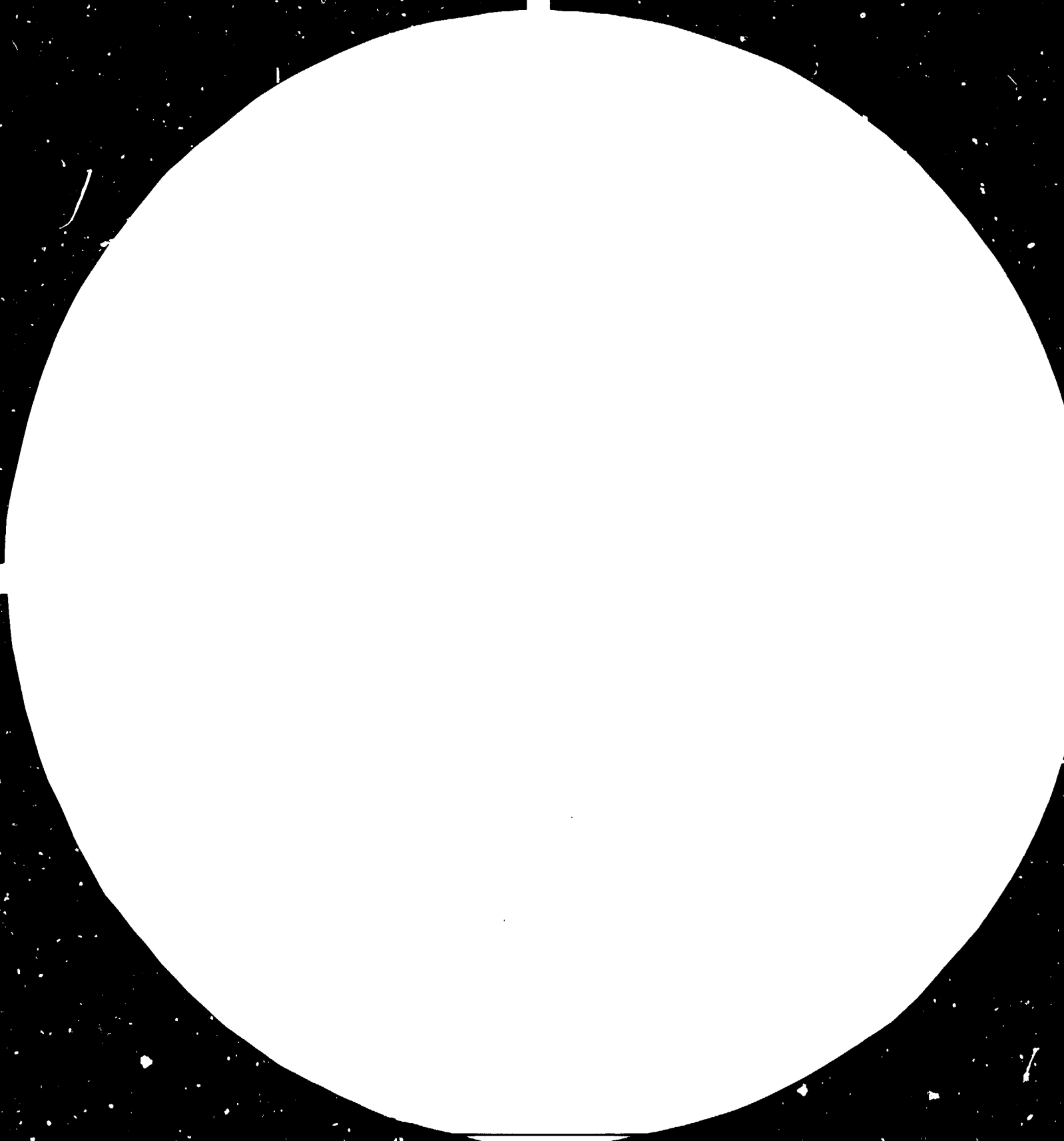
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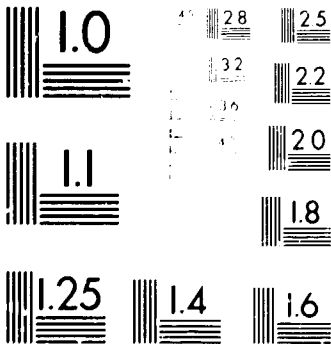
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UNIDO'S TRAINING PROGRAMME IN ACQUISITION  
OF TECHNOLOGY \*  
A Review

Prepared by  
the Secretariat of UNIDO

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## I. Introduction

At the TIES meeting held in Caracas on 17-20 October 1983, the subject of training for registry personnel was discussed and considerable interest expressed among the participants. The experience of the TIES members was that a high job rotation on the one hand and a heavy workload on the other left little time for improving the operation of technology regulatory agencies through the special training programmes. It was therefore agreed that a more comprehensive training programme should be evolved within the operational framework of TIES so as to enhance the operational activities of the technology registries. Various target groups in registries were identified as follows: those with little or no experience in evaluation of agreements; with experience in evaluation of agreements and having some managerial responsibilities; those with advisory responsibilities and those with final decision making responsibilities.

The need for the establishment of a more comprehensive training programme in the area of technology acquisition was also expressed in the background paper on accelerated development of human resources for industrial development submitted to the Fourth General Conference of UNIDO.

Within this framework, this paper analyses UNIDO's past training efforts, identifying ways and means to strengthen these training activities for consideration of the TIES meeting in Beijing.

## II. UNIDO's activities in training for the acquisition of technology

### II.1. Technology transfer regulatory agency management

In response to the request of developing countries, UNIDO has developed, within the context of the Technological Information Exchange System (TIES),

training programmes for personnel in the technology regulatory agencies. Such training programmes were undertaken as part of technical assistance projects aimed at strengthening or establishing technology transfer regulatory agencies. The most salient components of these programmes were:

(A) Study tours

Study tours were organized with the objective of acquainting registry personnel with technology transfer policies and technology contract evaluation criteria and procedures adopted by comparatively more experienced technology transfer registries in other countries. Such study tours were organized, for instance, for the benefit of the Technology Transfer Board of the Philippines, the National Research Council of Sudan, the Board of Investment of Thailand, various ministries and departments in the People's Republic of China, the Technology Transfer Committee of Cameroon and more recently for the National Office for Industrial Property of Nigeria. The duration of the visits to each registry varied from two to three days when it concerned policy aspects, or one to two weeks when it concerned contract evaluation criteria and procedures. No standard procedures were followed as the study tours were tailor-made to the requirements of each individual case.

(B) Workshops/on-the-job training

As part of the technical assistance projects, on the job training was given on specific subjects related to technology transfer contract evaluation procedures, guidelines in application, etc. through the fielding of high level experts. Such assistance was given among others to the Technology Transfer Registries of the Philippines, Nigeria and Venezuela. In some cases, on-the-job training was complemented by specialized workshops on particular issues related to technology transfer regulations (e.g. evaluation, information processing, etc.)

(C) Training material

Apart from direct training activities such as study tours, workshps and on-the-job training, UNIDO prepared a variety of publications and documents providing guidance on various technology acquisition aspects. For example, Guidelines for the Evaluation of Technology Transfer Agreements,<sup>1/</sup> addresses itself to the major issues related to contract negotiation and evaluation. The publications on contract evaluation in selected sectors reflect software, hotel and fast food sectors <sup>2/</sup> provided for guidance for sectoral contract evaluation. Analytical material is also made available on technology transfer payment evaluation. These publications were prepared with the active co-operation of the technology transfer registries themselves, and are reviewed by the yearly TIES meeting with recommendations made as to their improvement.

II.2. Technology acquisition negotiation

The training activities aimed at improving the negotiating skills for the acquisition of technology by public and private enterprises of developing countries were either implemented within training programmes for technology transfer regulatory agencies or independently from such programmes. The principal objective of these training activities has been that both the private and public enterprise will be able to negotiate technology transfer contracts which, within the framework of a national technology transfer policy, will be fair and equitable.

UNIDO has organized such training seminars in various forms. Seminars of an intersectoral nature were designed to introduce the participant to the intricacies and major pitfalls in technology transfer contract negotiation, and were tailored to the requirements of the different clients. For example

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<sup>1/</sup> Development and Transfer of Technology Series, No. 12.

<sup>2/</sup> See ID/WG.405/1, ID/WG.405/2 and ID/WG.383/3

a seminar was organized in Sydney, Australia, in co-operation with the Licensing Executive Society (LES) on negotiating techniques of technology transfer agreements for selected ESCAP countries. National oriented seminars were organized for, among others, the following countries: China, Portugal, Philippines and Venezuela. A typical outline for such a training seminar is attached as Annex I.

Although the presentations were adjusted to the level and background of the participants, a set of training material (manuals, case studies, simulated negotiation, etc.) have been compiled by UNIDO. In addition, and whenever appropriate, the results of UNIDO's system of consultations in the establishment of model contracts, guidelines or checklists for technology transfer agreements in specific industrial sectors (e.g. leather, fertilizers, petrochemicals, pharmaceuticals) were incorporated in the seminars.

### II.3. Technology transfer policies and institutional infrastructure

Sensitization of technology transfer regulatory agencies to their potential pivotal role in the formulation and execution of technology transfer policies has been through national or regional workshops. Such workshops often addressed themselves to the role of technology in industrial development and its related institutional infrastructure, focussing on technology policy measures. In particular, discussions were geared to issues such as monitoring technology transfer trends, the monitoring of technology transfer agreements implementation and the assessment of effectiveness of technology transfer regulatory measures. An outline of the seminar in Malaysia is annexed to this paper (Annex II). Although each seminar requires a different set of background papers, UNIDO has prepared some general publication material on this subject. <sup>1/</sup>

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<sup>1/</sup> E.g. Development and Transfer of Technology Series, No. 17.



#### II.4. Activities of other organizations

An analysis of training opportunities in the area of acquisition of technology has revealed that only a limited number of training opportunities exist on the basis of the information available to UNIDO. A listing of the training services available has been prepared (Annex III). This listing should be regarded as illustrative and not as exhaustive. It can be observed that from the United Nations organizations, UNCTAD and UNCTC are active.

#### III. Future orientation of UNIDO's training programme in technology acquisition

It can be observed from the foregoing that UNIDO has developed expertise in organizing training for technology acquisition. However, it can also be observed that only a limited number of developing countries possess such capabilities for training their own personnel. A large number of countries depend on assistance in training from international organizations. The Fourth General Conference of UNIDO, recognizing this area of concern, outlined an increased role for UNIDO to assist developing countries in strengthening their training activities.

UNIDO could strengthen its training programmes in the acquisition of technology, provided resources were made available.

The Ninth Meeting of Heads of Technology Transfer Registries is requested to comment on the further work of UNIDO in this area. It would be useful to indicate specific areas of training, type of personnel to be trained, dynamical resources required ect. The goal of UNIDO will always be to ensure that capabilities are built up on the countries themselves. It would therefore be necessary to identify these countries and institutions who could undertake to provide training for their own personnel as well as for those from other developing countries. A project concept, which may form the basis for the establishment of comprehensive training programme has been attached as a possible orientation towards such a training programme.

ANNEX I

Typical programme of a UNIDO training workshop on technology acquisition negotiation

- |              |  |
|--------------|--|
| Session I    | Technology transfer in (country, region, etc.) today, its nature, potential and constraints (prepared specifically for the seminar)                  |
| Session II   | Role of technology transfer in the industrialization process   |
| Session III  | Forms, channels and contents of technology transfer e.g. joint ventures, licensing, services, etc., direct sales, arms length, product in hand, etc. |
| Session IV   | Negotiation strategies and preparation for technology acquisition  |
| Session V    | Appraisal of technology payments   |
| Session VI   | Legal issues in technology transfer agreements (e.g. guarantee and warranty provisions, restrictions, etc.)  |
| Session VII  | Role of technology regulatory agencies in technology transfer  |
| Session VIII | Case studies/simulated negotiations/actual cases in negotiation.   |

The programme will be tailored to the professional background of the participants and the available time for the seminar. A trend has been observed to put more emphasis on case studies/simulated negotiations/actual cases in negotiation.

ANNEX II

WORK PROGRAMME, MALAYSIAN WORKSHOP ON TECHNOLOGY TRANSFER

POLICIES AND PLANNING 12 - 14 DECEMBER 1983

SESSION I: POLICIES AND PLANNING

- Theme 1: Technology transfer policies and planning as 'tools' for industrial development
- Theme 2: Internal transfer and technology transfer from abroad: Japanese experience

SESSION II: MECHANISMS, STRATEGIES AND CASE STUDIES IN TECHNOLOGY TRANSFER

- Theme 3: Technology transfer policies and planning: Japanese experience  
Discussions
- Theme 4: Assessment and evaluation of technology needs in relation to national and socio-economic priorities  
Discussions

SESSION III: REGULATIONS AND INCENTIVES

- Theme 5: Overview of existing guidelines on regulation of technology transfer
- Theme 6: Incentives for indigenous (internal) technology and importation (external) for technology
- Theme 7: Regulations for technology transfer in Malaysia

SESSION IV: CASE STUDIES

- Theme 8: Case study of Japanese experience of technology transfer in electrical/electronics industry
- Theme 9: Case study of Korean experience of technology transfer in heavy industry
- Theme 10: Technology transfer issues: Malaysian experience

SESSION V: INFRASTRUCTURE AND LICENSING

- Theme 11: Technology transfer through licensing, joint ventures, turnkey, etc.
- Theme 12: Internal technology transfer - role of research institutes, technology transfer agents and universities in relation to commercialization of technology
- theme 13: Industrial infrastructure in relation to technology transfer

SESSION VI: HUMAN RESOURCES

- Theme 14: Skills development for technology transfer

ANNEX III

Training opportunities in technology transfer evaluation and acquisition

- I. Guide to training opportunities for industrial development - UNIDO/P1/90
  - (a) Formation de specialistes en transfer de technologie  
IBF dans les locaux de Societe Nationale d'Investissement (SNI), Bruxelles, Belgium
  - (b) Development and Transfer: two weeks workshop on development of endogenous technologies and transfer of exogeneous technologies for North African states (April 1984)  
Training Division  
African Regional Centre for Technology, Dakar, Senegal
  - (c) Technology development and transfer two week course in development of endogeneous technologies and transfer of exogeneous technologies for Western Africa (April 1984)  
Training Division  
African Regional Centre for Technology, Dakar, Senegal
  - (d) Short course on marketing of technology and know-how  
International Management Institute, Geneva, Switzerland
  - (e) Trade and technology: training courses or seminars on technology policies and planning. (dates and places to be arranged)  
UNCTAD, Geneva, Switzerland
- II. Other training opportunities not included in the guide and not offered by UNIDO
  - (f) Training courses for technology transfer negotiations  
Inter-American School for Public Administration, Fundacion Gelulio Vargas, Rio de Janeiro, Brazil
  - (g) On-the-job training programmes for technology transfer regulatory personnel  
Board of Agreement of Carthagena, Secretariat Technological Information System (Board of Agreement of Cartagena)
  - (h) Training workshops and seminars related to TNC with a view to strengthening the negotiation capacity of governments in developing countries  
Advisory and information services, division, UNCTC
  - (i) Technology transfer negotiation capability forming programme  
Colciencias, Colombia

Annex IV

PROJECT CONCEPT

Development of a training capacity to increase the negotiation skills of (target group) from selected developing countries in (country, region) in the selection and acquisition of technology.

Background

UNIDO's Technology Programme was established, among others, to assist developing countries in the selection of technology and the negotiation of technology contracts. These services include training activities aimed at strengthening the negotiating capacity at the enterprise level. The activities are usually carried out upon specific government requests or within the framework of technical assistance projects. They differ in duration and character depending on the requirements. The thrust of the training programmes focusses on issues closely related to the preparation for, and negotiation of, various technology arrangements such as licensing and know-how arrangements, supply of turnkey plants, supply of management and technical assistance services.

The training programme of this project focusses on (specific subjects). In the preparation and execution of the course, close co-operation will be established with the (centre of excellence in developed or developing countries).

Development objectives

To increase the entrepreneurial skills of senior management (target groups) in the selection of technology and negotiation of its acquisition.

Immediate objective

1. The training of local experts from appropriate institutions in selected developing countries engaged in the design and implementation of training seminars and advisory services in the selection of technology and the negotiation of its acquisition, through the preparation and implementation of a pilot training course.
2. The training of 14 senior managers of (target groups) in the selection of technology and negotiation of its acquisition, taking into consideration the specific environment in which such acquisition will take place by means of their participation in the pilot training course.
3. To increase the entrepreneurial skills of 200 senior managers of private and public enterprises from selected countries in the selection and negotiation of technology through the organization of a training course in the selection and acquisition of technology in selected institutions with local experts.
4. The preparation, publication and dissemination, of training material suitable for the training courses and advisory services.

Output

1. Improved skills of senior managers of (target groups) in the selection of technology and the negotiation of its acquisition.
2. Training material (case studies, simulated negotiations, checklists, manuals, etc.) for the selection and negotiation of technology taking into consideration the specific requirements of the countries selected.
3. Improved skills of a selected number of people from appropriate institutions in the selected developing countries to design and implement training seminars and advisory services in technology selection and negotiation.

4. A manual to assist the potential advisors in the design and implementation of training seminars and advisory services in the selection and negotiation of technology.

Inputs

The selected countries will ensure that:

1. An appropriate institution will make available the necessary training infrastructure for the organization of two training courses for a duration of approximately three weeks each. In addition, the institution will assign a local course director to participate in the pilot training course (estimated cost is US\$ 10,000 in kind for each country).
2. The centre of excellence will provide appropriately furnished offices for the secretariat of the course and adequate teaching facilities. Already available literature and materials will also be provided to the participants free of charge as well as access to the library.

UNIDO will secure suitable financing for:

- (i) travel/per diem of participants participating in the pilot course
- (ii) travel and per diem of two international consultants for participation in the pilot course
- (iii) travel and per diem of two UNIDO staff for participation in the pilot course
- (iv) travel, per diem and fee for international consultants to assist in the preparation and implementation in training courses in selected countries.



