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DEVELOPMENT OF TECHNOLOGY INFORMATION SERVICES

DP/PHI/86/016

REPUBLIC OF THE PHILIPPINES

Technical report: Design of databases, networking and
services; development of information sources,
equipment and training*

Prepared for the Government of the Republic of the Philippines
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of Erik I. Vajda,
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Vienna

* This document has not been edited.

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EXPLANATORY NOTES

Currency

According to the actual UN operational rates 1 USD is equivalent to 27.70 Pesos of the Philippines what means that the Peso has the value of 0.0361 USD.

Acronyms and short terms

AIBA	- Agricultural Information Bank for Asia
APCTT	- Asian and Pacific Centre for Technology Transfer
BSMBD	- Bureau of Small and Medium Business Development
CD-ROM	- Compact disc - read only memory; an opto-electronic medium for the storage of large amount of retrievable data on a special diskette
CDS/ISIS	- short name of a database management system developed by Unesco for the storage and retrieval of textual data
DATANET	- Short name of the packet switched data transmission system of PT&T
DOST	- Department of Science and Technology
DTI	- Department of Trade and Industry
IIA	- Industrial Information Adviser
IDRC	- International Development Research Centre
IDRIS	- International Development Research Information System
INDAB	- Industrial Development Abstracts
INTIB	- Industrial and Technological Information Bank (of UNIDO)
MINISIS	- Short name of a database management software developed by IDRC for the storage and retrieval of textual information on mini-computers

- NTE** - National Training Expert (on technological information)
- PT&T** - Philippine Telegraph and Telephone Corporation
- STII** - Science and Technology Information Institute
- TECHTIPS** - Short name of a database and publication of STII containing information on available technologies
- TIS** - Technology Information Services
- TUNE** - Technology Information Users and their Needs (database of TIS Regional Centers, part of the TIS integrated database structure)

ABSTRACT

Personal author: Erik I. Vajda
Corporate author: UNIDO
Title of project: Development of Technology Information
Services
Number of project: DP/PHI/86/016
Title of report: Design of databases, networking and services;
development of information sources, equipment
and training

The main objective of the second mission of the industrial information adviser was the detailed design of databases and their use in the network consisting of regional centers and central agencies of the Technology Information Services (TIS). This objective was attained. Additional activities of the IIA in cooperation with the national counterpart were: the preparation of the survey of technological information needs, the conduct of an orientation workshop for central and regional TIS staff and preparation of further training actions; requisition of information sources and of equipment for the establishment of the physical, computer- and telecommunication based network of TIS. The IIA visited one TIS Regional Center. This visit and the contributions of Regional Centers at the orientation workshop proved the readiness of the centers to start regular TIS activities. On the job training was given by the IIA for members of TIS staff.

INTRODUCTION

This report is based on the activities accomplished during the mission of the industrial information adviser (hereinafter: IIA) from 14 June to 13 August 1991, including travel and work in the field from 16 June to 12 August but excluding briefing which took place at 10 June 1991 and debriefing which is planned for 15 August 1991 (both in Vienna).

The **original objectives** of this phase (further development of coordination and cooperation mechanisms; training of TIS staff and planning of training abroad; assessment of information needs of users; acquisition of computer and telecommunications hardware and software, survey and extension of information sources, design and establishment of databases, design of information services) **were not revised and were attained** with minor deviations as described in the body of the report. Recommendations for further development are given in the report.

I. ACTIVITIES

This chapter is organized by planned project activities as included in the **revised work plan**. This means some deviations from the activities listed in the original project document. For the revised work plan and the reasons of its preparation as well as for its correspondence of activities as listed in the work plan to the project document see the technical report on the first mission of the IIA, referred to in detail in Annex 7. (1).

A. Organizational, coordinating and planning activities

The coordination of the activities of the Project Management, as well as, of the two agencies acting on behalf the **two governmental bodies** responsible for the development of the Technology Information Services (hereinafter: TIS) the Science and Technology Information Institute (STII) of the Department of Science and Technology (DOST) and the Bureau of Small and Medium Business Development (BSMBD) of the Department of Trade and Industry (DTI) was accomplished in accordance with their agreement on the common execution of this project. The practical coordination of activities and the taking of harmonized decisions was enhanced by the decision to organize **regular meetings of the project management** every second week.

The **organization of the regional TIS Centers** in the four regions selected for the project (in Regions I. and XI. where the TIS Centers are based at DTI Regional Offices and in Regions VII. and X. where the TIS Centers are based at DOST Regional Offices) has been **completed**. In the regions, where the TIS Center is DTI based also the Regional Offices of DOST and in the regions where the TIS center is DOST based also the Regional Offices of DTI appointed their staff members to the common TIS regional staff. For the list of senior staff members see Annex 2. However, in the

practical coordination and cooperation, including common planning and accomplishment of activities, the problems of sharing costs, the flow of management information between the headquarters of DOST/STII and DTI/BSMBD and the Regional Centers and also between the cooperating Regional Offices there are still unsolved problems which need appropriate decisions and regulations in operations manuals.

The preparation of coordination and **management manuals** as well as of the **regional centers' manual** has been started by outlining their possible contents but it needs further inputs on behalf of the participating central and regional agencies. The necessity of appropriate agreements and of the manuals was also mentioned by the participants of the Orientation Workshop on TIS (see Section B.) The organization of a **planning workshop** was proposed to discuss the above mentioned and related questions, as well as the monitoring of the project implementation and the exchange of information on project results and constraints.

The **financing** of TIS activities, including the **charges to be paid by users** of information services was also discussed at the workshop. There was a general agreement on the principle that information services should be considered as a kind of commodity for which users (or at least most users for most services) should pay charges and that the survey on information needs of users should contain questions on the willingness of users to pay for services.

Following the orientation workshop the IIA had the possibility to **visit Region VII**. together with Mr. Hindrik Gommer, Junior Professional Officer of UNIDO at the office of the UNDP Resident Representative and of the UNIDO Country Director in the Philippines. This region could not be visited during the first mission of the IIA because a devastating typhoon in November 1990. The visit has proved the rapid development of this TIS center and its good

background and initial activities which will contribute to the full development of TIS activities. Nevertheless the necessity of coordination and better flow of project information is also a requirement stressed by the head and staff of this Center.

B. Selection and training of TIS staff

There was a change in the expert team to the project. After the withdrawal of Professor Baaha el-Hadidy, Technology Information Training Expert to the project, it has been decided by the project management and UNIDO to invite a National Technology Information Training Expert (hereinafter: NTE). Dr. Josephine C. Sison, Project Officer to the Agricultural Information Bank for Asia (AIBA) has been selected for this post but she will be available from January 1992 only. However she voluntarily took part in the preliminary planning of study tours and fellowships abroad, in discussions concerning the programme of the Orientation Workshop and she kindly presented lectures and organized demonstrations on this Workshop. In spite of this the withdrawal of the former training expert and the problems mentioned above caused some delays in the preparation of training packages and in the planning of fellowships and study tours but these delays will not have final negative impact on the accomplishment of training objectives.

For the selection of TIS staff see Section A. and Annex 2. The main development in this area was the organization of the TIS staff at Region 10 and the appointment of the counterpart staff of DOST to the DTI based Regional Centers in Regions I. and XI. Some changes in the appointed staff are unavoidable because of changes in the staff of the Regional Offices. However further efforts are planned by the Directors of Regional Offices to keep as permanent TIS staff members those who will be selected for training abroad.

A general outline of the **plan on in-service training** has been developed by Dr. Sison and the IIA. According to this plan the major part of local training will have the character of **on-the-job training**, not only at the central agencies but also **in the regions**. The NTE and the IIA will visit the Regional Centers to provide training of the establishment and use of the TIS databases, on the use of the network of TIS and on the selection of material for and the repackaging, packaging and editing of information services. This training activity will be supported by the TIS staff of the central agencies as well as by computer specialists of STII. These activities will be started in the first quarter of 1992 and will be concentrated on the third quarter of the same year. **Training packages** will be prepared by the NTE for this training and as reference tools for TIS staff. One final **central course** is planned for the last quarter of 1992 for the whole TIS staff to summarize the knowledge on TIS. **Workshops** will be organized in addition if necessary, first of all the planning workshop mentioned is in Section A.

Finally a **workshop for technology information users** (small and medium size enterprises and their associations) is planned for late 1992 to introduce TIS to its users, if funds for this workshop will be available. This workshop could replace the workshop proposed by the Industrial and Technological Information Bank (INTIB) of UNIDO for 1991 and considered by the Project Management as premature for TIS purposes.

In accordance with recommendation 4) of the previous Technical Report of the IIA, **local training courses** were organized by the Project Management at the Regional Centers and at DTI/BSMBD for TIS staff **on the use of the software** provided by the project. These courses were conducted with the support of UNDP in February/May 1991. A report on the courses was prepared by the IIA.

An **Orientation Workshop** (some findings of which were described in Section A.) was organized for the Regional Directors of the Regional Offices where the TIS centers are based, as well as, for the TIS staff in the regions and at the central agencies. For the programme, venue etc. see Annex 6. Some changes were made in the programme (e.g. the lectures planned for the second day on information needs and information services were condensed to one lecture) to give more time for discussions. This time was used very effectively by the participants from the regions who formed two working parties and made **recommendations to the Project Management** on further actions. The workshop was successful and contributed to the development of TIS.

The use of **CD-ROMs** and **local databases** for information retrieval, including a factual database of AIBA and a preliminary version of the TIS database containing descriptions and offers of technologies, as well as, databases of DTI containing export trade data and data of registered business, was **demonstrated** successfully to the participants.

A detailed report on the workshop is under preparation. The workshop was supported by UNDP using the budget funds of the project allocated for in-service training.

Preliminary planning of **fellowship training and study tours** was made by the IIA and the selected NTE. The plan of this training needs further information of training possibilities, inputs and discussion by the project management and the selection of personnel for training before the submission of application forms. Because of this and also because of the climatic conditions of training sites in the USA and in Europe, the majority of fellowships and study tours is preliminarily planned for the second and third quarter of 1992.

C. Assessment of technology information needs

The TIS staff at BSMBD prepared a draft **survey questionnaire** on technological information needs. This draft was circulated for comments to the Regional TIS Centers and was discussed with the TIS staff of STII and also with the IIA. On this basis a second draft has been prepared. Following further discussions, involving also the selected NTE, the content of the questionnaire and the conduct of the survey was discussed at the orientation workshop. The participants agreed on the content and the draft of the final questionnaires. The explanations and some methodological guidelines will be sent to the Regional Centers in due course and the surveys will be conducted in August/October.

The Regional Center in Region XI. conducted a **pilot survey** on the basis of the second draft of the questionnaire. The results of this survey proved the feasibility of the survey and the interest of users in TIS.

The structure of a **database** called Technology Information Users and their Needs - TUNE as a part of the TIS integrated database structure based on the CDS/ISIS and MINISIS software has been designed by the IIA (see also Section E.). This database can accommodate the general data of and the information needs expressed by users of technological information. The primary input to the TUNE databases in the regions will be based on the survey questionnaires. The database can be used for quantitative and qualitative evaluation of survey results and can be used as an up-to-date registry of users and their needs. The content and structure of this database was discussed at the Orientation Workshop together with the draft questionnaire.

In addition to the survey the every day **contacts to users as well as to associations, chambers of commerce and industry** are used

by the regional centers to collect further information on technological priorities and users' needs.

Priority areas for TIS (including areas for the preparation of technology packages) will be defined on the basis of the evaluated survey results, as well as, on existing listings of investment and development priority areas.

D. Acquisition and installation of computer and telecommunication hardware and software

The majority of computer equipment (including microcomputers, printers, uninterruptable power supplies and accessories for the regional centers and the central offices, CD-ROM drives and laser printers for the central offices) arrived and has been installed. The solving of some minor problems is going on. Similarly the basic software was also delivered and has been installed (see also Section B. concerning the training on the use of the software). A second part of the software (Paradox and Quattro Pro) has been ordered and delivered but did not arrive to the project site to date.

For the building of a TIS network the upgrading of the Hewlett-Packard 3000 computer of STII, including the purchase and installation of network software and the training of relevant personnel was proposed, together with other measures to build the network of TIS and to assure the access to international information sources (see also Section E.). The appropriate budget revision was approved by the Tripartite Review Meeting and the authorization for local purchase was given by UNIDO. The office of the UNDP Resident Representative was requested to order the upgrading of the computer from the local dealer of Hewlett-Packard. Modems for the network were ordered by UNIDO Headquarters but have not arrived yet.

The further and final step in building of the physical network will be the installation of dedicated lines to and the joining of a **packet switched data communication network**. Price quotations were given by the Philippine Telegraph & Telephone Corporation (PT&T) and the necessary budget funds can be made available. The Project Management took a decision in principle to join DATANET (the packet switched data network of PT&T), but the requisitioning and ordering was postponed, because the intensive and efficient use of this communication channel can be expected only after the establishment and/or upgrading of TIS databases and following the appropriate training of the TIS staff. The preliminary deadline for starting the use of the packet switched network is July 1992.

UNIDO/INTIB kindly provided to the central and regional offices of TIS the configured software and the rights to use the **General Electric Electronic Mail System**. The installation and the pilot use of the system by STII and BSMBD (using dial up facilities) is planned for the near future. The Regional Centers have still to wait for the ordered modems and for the software what has not arrived yet to the regions.

E. Surveying, designing and establishment of information sources, databases

The existing **CD-ROM-based databases** were analyzed by the IIA and by the TIS staff of the central agencies to define those databases which are first of all relevant to TIS needs, which cannot be replaced by local databases and could be requested within the limits of the budget. The relevant databases have been selected and their purchase was requested from UNIDO Headquarters. The requisition of one further CD-ROM database will be possible because the diskette-based Micro-Metadex database, which was also selected will be free of charge for DTI being the focal point of INTIB and

the amount reserved for its requisition can be used for the purchase of a CD-ROM.

The survey of online accessible foreign/international databases was postponed because the Tripartite Review Meeting postponed the decision on a possible budget revision which could allocate the initial funds for the online access of databases at major vendors (hosts) and because the necessary reference tools were not available.

The existing databases at DTI and DOST/STII were analyzed. Based on this analysis the conclusion was drawn, that a part of these databases can be used for TIS reasons directly or as supporting databases in their present form. These are the Business Name Register database and the export market database (CTIS/PRODEX) of DTI as well as the IDRIS database provided by the International Development Research Centre (IDRC - Canada) and the Industrial Development Abstracts (INDAB) database of UNIDO/INTIB, both available at STII. Some other databases (databases of institutions and experts) can be used by TIS (first of all for referral services), but this needs the extension of the relevant data records by access points (e.g. industrial classification systems' codes).

Further databases of STII (the bibliographic databases on book holdings and on abstracted Philippine and South-East Asian articles, as well as the database of research and development projects) contain many highly relevant records but also many records which are not relevant for TIS. The relevant records are also overloaded with data fields which are not necessary for TIS staff and users and cannot be integrated into a single integrated database (see below). Therefore it has been primarily decided that the relevant records of these databases will be flagged by a few new data elements (among others by access points mentioned above)

and then these records (condensed to the information needed for TIS) will be transferred to the TIS database(s).

The other existing databases (database of descriptions and offers of technologies, called presently TECHTIPS) and the database of patents will entirely be transformed and transferred to the TIS database(s). Similarly some databases which were just in the phase of their initial planning or establishment will be parts of the integrated TIS database (the database of standards as well as that of technological information users and their information needs).

The integrated database approach of TIS means that all databases of TIS can be established individually but they can also be put together in one single database, because the content of fields and subfields is only overlapping among databases of various items if they have the same meaning and can be handled in the same way. This approach has the big advantage that if necessary all kinds of items can be searched together for a given inquiry. Additionally the use of fields and subfields can be described in a much more simple way and the personnel can learn the input and search techniques easily.

For the preparation of the integrated TIS database structure of the existing and planned databases considered as supplying input to TIS by transfer of records or as future components of the TIS database were analyzed. An inventory of all fields and subfields was prepared. On the basis of this inventory and based on former similar works of the IIA, as well as, on the Common Communication Format of Unesco (Annex 7., items (2) and (3)) and on a study of Buxton and Hopkinson describing an integrated database (Annex 7., item (4)), the data elements for the TIS database were created. This was the starting point for the design of fields and subfields and their main characteristics. The database design was made in parallel for the application of the Micro CDS/ISIS and the MINISIS software.

The results are presented in a comprehensive matrix of data elements and their use for various items. Details were discussed with STII and BSMBD staff members respectively. For some items (e.g. technological information users and their information needs) draft descriptions of the use of data elements were prepared. A data element specification (manual) will describe the application of all data elements for all items as a part of the TIS system's manuals. An experimental database for demonstration at the Orientation Workshop was prepared on the basis of this design and records describing offers of technologies have been transferred successfully to this database from the databases of INTIB and the Asian and Pacific Centre for Transfer of Technology (APCTT).

The database networking principles, i.e. the roles of Regional Centers and of STII and BSMBD respectively concerning the input to and the output from the databases, as well as, the physical distribution, merging, updating and downloading of databases have been designed by the IIA and by the TIS staff of the central agencies. For the types of databases, their distribution and use see Annexes 4. and 5. These are copies of overhead transparencies used at the Orientation Workshop for the introduction of the database design and the networking principles. The participants of the workshop agreed on these principles.

Some further databases (on product design, on users inquiries and information supplied when servicing these inquiries etc.) will be probably designed in addition. These databases can fit in to the structure described above.

The information sources for regular input to the databases are or can be made available. However further sources should be studied and/or approached within the system of institutions of DOST and DTI and also within the national and international environment. The appropriate actions are going on and will be continued.

**F. Establishment and provision of technology
information services**

The present phase of project development was concentrated on the survey of information needs, on the design and establishment of the databases and the TIS network and on training of TIS staff. However, the types of planned services were extended.

In addition to the inquiry services (remaining the decisive type of services) and to the preparation of technology packages as referred to in the previous technical report of the IIA, referral services will be provided by TIS. This means that experts and institutions will be referred to the users in all cases when their inquiry could not or not fully be answered by TIS, or when additional input can be got from them. TIS will serve the users of information not only by providing the users with the data of experts or institutions but by establishing contacts between the information user and the personal/institutional information sources.

The development of information/extension services, i.e. visiting the users to find out their technological problems on the spot seems to be necessary and, to a given extent, feasible. The survey of information needs will provide useful experiences on the possibilities of this kind of services.

Not only the planning of types of information services, but also the planning of the technologies and procedures for the preparation of services was further developed by the clarification of the distribution and use of databases and information sources. It became obvious that the central agencies have to take part in most cases in the preparation of the services, but for inquiry services the selection of information from the available and retrieved sources, as well as, the packaging of services in a user-friendly form will be the task of the Regional Centers. The regional

services will have also a definitive role in follow-up actions asked for by the users.

G. Marketing of TIS

It would be still premature to launch a marketing campaign of TIS. However, the Regional Centers started the marketing activities based on their present information activities and using their contacts to the local mass media, associations etc. The systematic marketing of TIS can be started in the second quarter of 1992.

II. CONCLUSIONS

The following conclusions can be drawn from the experiences gained during the reporting period:

a) **Significant progress** was achieved in the establishment by the stable organization of Regional Centers, by their growing activities and also by the design of the databases and of the networking structure.

b) **Further revision of the project budget** will be necessary to finalize the networking, complete information sources, access international databases and extend training activities.

c) **The coordination of project activities and the flow of information** on the project achieved a higher level in comparison with the previous reporting period. However, further planning efforts and strengthening of the management information system of the project deem necessary.

RECOMMENDATIONS

The following recommendations are arranged according to the work plan and to the body of the report because this arrangement seems more consistent than the arrangement in priority order and because most recommendations have similar priorities.

1) The consideration of a further **budget revision** is recommended to the Project Management and to UNIDO, taking into account further needs concerning the equipment component (access to foreign databases and extension of information sources) and the training component (more in-service-training). This budget revision can probably be covered by savings on the budget line for international and national experts.

2) The preparation of a **planning workshop** to be held in November 1991 which will involve the participation of the Project Management, the representatives of the Regional Centers and of the central agencies, as well as, of the IIA is recommended to the Project Management.

3) The organization of a **pilot project monitoring and information system** is recommended to the Project Management. This system could be implemented prior to the planning workshop referred to in recommendation 2) and could be based on periodical (e.g. bimonthly) reports prepared by the Regional Centers, BSMBD and STII, following the arrangement of the work plan. A summarized state-of-the-art report could be distributed by the central agencies to the interested parties, in printed form or via electronic mail .

4) The preparation of the final plan for **fellowships and study tours**, its approval by the Project Management and the submission of the application forms is recommended to the Project Management. The

plan can be based on the preliminary outline prepared by the selected NTE and the IIA, on further information what should be collected from envisaged trainor institutions about training possibilities and conditions, as well as on further input from the Project Management and the Regional Centers.

5) The conduct of the survey of technological information needs, the establishment of the respective databases (TUNE) and the evaluation of the survey is recommended to the Regional Centers. It is also recommended to the Project Management to provide methodological assistance in the establishment and use of the regional databases by the TIS staff of BSMBD and STII and by the computer specialists of STII.

6) It is recommended to the Project Management to consider the requisition of further price quotations from other carriers than PT&T on packet switched data connection between the regions and the central agencies. The ordering of this network is recommended for January 1992 the latest.

7) Pilot run of the available electronic mail system is recommended to the TIS staff of BSMBD and DTI and, after the arrival of the configured software to the Regional Centers, too.

8) The urging of pending delivery of equipment (modems, software) and of correcting actions on delivered equipment (laser printer memory expansion) is recommended to the TIS staff at STII.

9) The requisition of the free submission of the Micro-Metadex database by UNIDO/INTIB is recommended to the Project Manager and to the TIS staff at BSMBD. The requisition of subscription to the PERINORM CD-ROM database, using the funds saved by the free submission of Micro-Metadex is recommended to the Project Management.

10) The sending of requests to APCTT and UNIDO/INTIB for the regular submission of the **databases on offered technologies** and of the **UNIDO/INDAB database** is recommended to the TIS staff of BSMBD and STII, respectively.

11) The requisition of sending documentation on services and databases and of later provision of free demonstration passwords by the most significant **online database hosts** is recommended for consideration by the project management.

12) Preparatory work for the **establishment of the TIS database** and for the transfer of records from existing databases to the TIS database is recommended to the TIS staff at the central agencies. This can be based on the matrix of data elements and on oral advice given by the IIA.

13) A continuing survey of **technological information sources** within DTI and DOST but also at other institutions in the country (e.g. the Philippine Center for Appropriate Technologies) and abroad (institutions distributing appropriate technologies) is recommended to the staff of the central agencies. This survey should also include the existing information sources on technological training.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Project in the Republic of the Philippines

JOB DESCRIPTION

DP/PH/86/016/11-01/J12101

Post title	Industrial Information Adviser
Duration	Twelve months in three split missions (2, 5 and 5 months respectively)
Date required	As soon as possible
Duty station	Manila with travel within the country
Purpose of project	Linking existing technology data banks at the Department of Science and Technology (DOST) and the Department of Trade and Industry (DTI) and establishing of Technological Information Service Centres at four regional offices of DOST and DTI to facilitate effective sourcing and usage of scientific and technological information for technology innovation, upgrading and venture syndication in the rural areas.
Duties	The expert will be attached to the DOST and the DTI and will work under the general guidance of the National Coordinators and in close co-operation with the training expert assigned to the project. The expert will specifically be expected to:
Duties	<ol style="list-style-type: none"> 1. Elaborate a detailed work plan for the different phases of the missions and prepare a master plan for the organization and operation of the central and regional offices including organizational chart, staff and equipment needed. 2. Establish contacts with current and potential users of industrial, technological information for assessing their information needs. Prepare manuals for TIS Centres. 3. Select the appropriate computer hardware and software required for the establishment of computerized data banks, computerized information and documentation services, networking and supervise its installation and putting into operation.

...../...

Applications and communications regarding this Job Description should be sent to:
 Project Personnel Recruitment Branch, Department of Industrial Operations
 UNIDO, Vienna International Centre, P.O. Box 300, A-1400, Vienna, Austria

4. Elaborate a permanent machinery for the collection and processing of the data/information.
5. Design and organize information services.
6. Design and develop computerized data banks of technological and techno-economic information.
7. Organize on-the-job training and in co-operation with the training expert prepare fellowship and study tour programmes abroad.
8. Identify the best ways and means of establishing links with other national data banks and international information sources, including UNIDO's INTIB.
9. Initiate the issuance of a periodic publication/newsletter for dissemination of industrial and technological information.

The expert will be expected to prepare two technical reports and a terminal report, setting out the findings of his missions and his recommendations to the Government on further action which might be taken.

Qualifications

University degree or equivalent in engineering and/or information science with exclusive experience in the planning and operation of industrial information services. Experience in application of computers in information services is essential. Experience in developing countries, particularly in Asia, is an asset.

Language

English

Background
Information

This project is primarily envisioned as a follow-up to the completed UNDP-assisted project PHI/79/018 Strengthening the National Scientific Information System which had laid the groundwork for the establishment of a national information system for science and technology (NISST). Among the achievements of this project are:

- a. The establishment of the NISST with 116 member-participating institutions linked to the main base, i.e., Scientific Clearinghouse and Documentation Services Division of the National Science and Technology Authority (NSTA) now the Department of Science and Technology (DOST);

Mission-oriented specialized networks have been established such as HERDIN for health, based at PCHRD; PASFIS for aquatic science and fisheries based at UPV; agriculture at PCARRD; industry and energy information network based at PCIERD; EINET based at National Engineering Center; NUTRINET based at FNRI; rootcrop information network at VISCA;

- c. The capacity of the Clearinghouse has been strengthened to play a central and effective role in the NISST and to respond to the variety of information needs of the different categories of personnel in the system;
- d. Substantial development of the components of the information infrastructure; and
- e. Substantial development in science information services and products namely: on-going research information; current awareness and S&T; data bases of documents; information clearing and referral services; document delivery services tailored to user needs; S & T experts profiles; and S & T institutions profiles.

While the activities of the completed project were faithfully complied with, it was found that an effective science and technology information system has remained incomplete. Since the outputs have not reached the desired target groups. A second phase was deemed necessary not only because of the importance of a strong infrastructure for technology information utilization, but also in view of the importance of technology information in the light of the Philippine's needs to recover economically in the coming

years. Thus, this new project will follow a different approach as it will link COST with DTI and will aim to develop and strengthen the science and technology information infrastructure in the countryside, combining the demand and supply sides of the

S & T information system through innovative ways of sourcing, processing, packaging, disseminating and servicing of information. It shall identify outputs which would find immediate application in trade and industry, and it shall be demand-oriented. The focus shall be on commercial technologies, with a view to developing local capability for adaptation and use.

The project is also envisioned to be linked to the major technology information network globally, including the Technology Information Pilot System (TIPS) of United Nations Fund for Science and Technology for Development; the UNISISTS and ASTINFO of UNESCO; the Technology Information Exchange System (TIES) and Industrial Technological and Information Bank (INTIB) of UNIDO and others.

SENIOR COUNTERPART STAFF*

DOST/STII Headquarters

Dr. Jose L. Guerrero	Director of STII, Project Manager
Mr. Enrico Florencio	Head of EDP Division of STII and of TIS staff at STII
Ms. Imelda O. Casal	Database Manager
Ms. Maribel Palafox	Database Manager

DTI/BSMBD Headquarters

Mr. Zafrullah G. Masahud	Director of BSMBD, Project Manager
Ms. Alicia M. Opena	Chief Trade and Industry Development Specialist, Head of the TIS staff at BSMBD
Ms. Elvira P. Tan	Supervising Trade and Industry Development Specialist
Ms. Gladina M. Aquino	Senior Trade and Industry Development specialist

Region I. - DTI

Mr. Mario B. Piedad	Senior Trade and Industry Development specialist, Head of the TIS regional staff
Ms. Josefa Catherine C. Tayaban	Senior Trade and Industry Development Specialist
Mr. Renato O. Coloma	Senior Trade and Industry Development Specialist

- DOST

Ms. Paulina P. Nebrida	Senior Science Research Specialist
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* Those persons whose function in TIS is not presented are TIS staff members

Region VII. - DOST

Mr. Edilberto L. Faradela Senior Science Research Specialist,
Project Leader, TIS regional staff

- DTI

Ms. Brenda A. Orosco Officer-in-charge, DTI Cebu Provincial
Office

Mr. Roberto A. Vasquez Chief Trade and Industry Development
Specialist

REGION X. - DOST

Ms. Roselyn V. Arellano Science Research Specialist (considered as
senior as) Project Leader, TIS regional
staff

- DTI

Ms. Elisabeth C. Tagaylo Senior Trade and Industry Development
Specialist

Ms. Emilia A. Lasquites Senior Trade and Industry Development
Specialist

REGION XI. - DTI

Mr. Larry N. Digal Chief Trade and Industry Development
Specialist, Head TIS regional staff

- DOST

- - (No senior TIS staff member)

Annex 3.

LIST OF PEOPLE MET

This list does not contain the names of the Directors of DOST and DTI Regional Offices met at the Orientation Workshop, the names of senior national counterpart staff members listed in Annex 2. and the names of junior counterpart staff members met.

Department of Trade and Industry, Welding Industry Bldg. Sen. Gil Puyat Avenue, Makati, Metro Manila

Mr. Francis Lopez - Project Manager, Export Development Project

Mr. Ronald Flormata - Officer-in-Charge. Systems Development Operations Division

Design Center of the Philippines, Cultural Center of the Philippines Complex, Roxas Blvd. Manila

Ms. Fe Gonzales - Chief, Research Division

Ms. Babes Adonis - Administrative Division

DOST Regional Office, Cebu City

Dr. Araceli G. Almase - Regional Director

National Training Expert (selected)

Dr. Josephine Sison - Project Officer, Agricultural Information Bank for Asia. UPLB College, Laguna

TYPES OF DATABASES

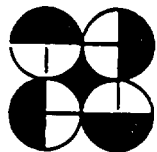
- a) Regional input - regional output
Database of information users and needs
(Technology Information Users and their Needs - TUNE)
- b) Regional and central inputs, central merging,
downloading - regional output with central backing
(Description and Offers of Technologies - DOT)
- c) Central input by
- processing for TIS
- transferring from other databases
- transferring from imported databases
and central output based on regional inquiries
and technology profile plans.
(various database)
- d) Central - non TIS - input to existing databases at
headquarters and central output (export markets,
specialists, institutions etc.)
- e) Foreign input and central output (CD-ROMs)
- f) Foreign input - remote access - foreign/central output

DATABASES AND THEIR USE IN THE NETWORK

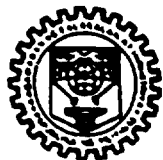
TYPES OF DATABASE	I N P U T S			O U T P U T S		
	REGIONS	HEADQUARTERS	OTHERS	REGIONS	HEADQUARTERS	OTHERS
REGIONAL	X	← - - - - - →		X		
REGIONAL/ CENTRAL	X	→ ←	X	X	X	
CENTRAL - TIS		X		R → (?)	X → R(?)	
CENTRAL - NON TIS		X		R → (?)	X → R(?)	
IMPORTED			X	→	X	
REMOTE ACCESSED			X		X → R	X → R

X - YES
 → - DATABASE TRANSFER
 ← - POSSIBLE DATABASE TRANSFER
 → - DEPENDS ON CONDITIONS

- - - - - → - TRANSFER OF ENQUIRIES
 ← - - - - - AND SEARCH RESULTS
 R → - REMOTE SEARCH BY...
 → - REMOTE SEARCH AT...



DEPARTMENT OF SCIENCE AND TECHNOLOGY



DEPARTMENT OF TRADE AND INDUSTRY



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

ORIENTATION WORKSHOP ON TECHNOLOGY INFORMATION SERVICES (TIS)

31 JULY - 02 AUGUST 1991

venue: THE AIT HOTEL
Diliman, Quezon City

ORIENTATION WORKSHOP ON TECHNOLOGY INFORMATION SERVICES (TIS)

31 July-02 August 1991

Venue: The AIT Hotel

Day 1		
31 July (Wednesday)	8:30-9:00 a.m.	Registration of Participants
	9:00-9:30 a.m.	Opening addresses by the members of the Project Steering Committee: Mr. Ernesto M. Ordoñez Undersecretary, DTI Dr. Eduardo R. Magtoto Undersecretary, DOST Mr. Christian A. Newman UNIDO Country Director Presentation of Participants
	9:45-10:15 a.m.	The aims and main principles of the Project DP/PHI/86/016 By: Dr. Jose L. Guerrero Project Manager, DOST
	10:15-11:00 a.m.	The networking principles; work sharing between regional and national centers By: Mr. Erik I. Vajda Industrial Information Adviser
	11:00-12:00 noon	Open Forum
	1:00- 2:30 p.m.	TIS and its users: needs, services, feedback By: Dr. Josephine C. Sison Technical Information Training Expert

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Annex 6.

This serves as an invitation

2:45- 3:45 p.m. Demonstration of Databases

3:45- 5:00 p.m. Workshop

Day 2

**01 Aug.
(Thursday)**

8:30- 9:15 a.m. Survey and evaluation of user's
information needs
By: J.C.Sison

9:15-10:00 a.m. The databases and network of TIS
By: E.I.Vajda

10:15-12:00 noon Open Forum/Consultation

1:00- 2:00 p.m. Information services of TIS
By: J.C.Sison

2:00- 3:00 p.m. Sources of Marketing Information
By: Mr. Gerry Anigan
NCR Project Manager
PITO-P Project

3:15- 5:00 p.m. Demonstration

Day 3

**02 Aug.
(Friday)**

8:30-10:00 a.m. Workshop: Administrative/
Operational Issues
By: Project Management

10:15- 11:30 a.m. Open forum

11:30- 12:00 noon Closing addresses:
Dr. Jose L. Guerrero
Project Manager, DOST
Mr. Zafrullah G. Masahud
Project Manager, DTI

MASTERS OF CEREMONIES:

Mr. Enrico F. Florencio
Ms. Alice M. Opasa

BIBLIOGRAPHY

- (1) DP/PHI/86/016 Technical report: Planning and starting the development of technology information services (TIS).** Prepared by the United Nations Industrial Development Organization, based on the work of Erik I. Vajda, Industrial Information Adviser. UNIDO, Vienna, 1990. 41 p.
- (2) CCF/B : The Common Communication Format for Bibliographic Information.** Draft. Ed. by P. Simmons and A. Hopkinson (General Information Programme and UNISIST. Ad hoc Group on the Establishment of a Common Communication Format). Unesco, Paris, 1991. 192 p.
- (3) CCF/F : The Common Communication Format for Factual Information.** Draft. Ed. by A. Hopkinson and P. Simmons (General Information Programme and UNISIST. Ad hoc Group on the establishment of a Common Communication Format). Unesco, Paris, 1991. 95 p.
- (4) Integrated Database Implementing the CCF on CDS/ISIS.** Manual and Accompanying Diskette. First Experimental Draft. Prepared by A. Buxton and A. Hopkinson. 1990. Without page numbering.