OCCASION

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

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 for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

18834

DEVELOPMENT OF TECHNOLOGY INFORMATION SERVICES

DP/PHI/86/016

REPUBLIC OF THE PHILIPPINES

Technical report: Planning and starting the development of technology information services (TIS)*

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

Based on the work of Erik I. Vajda
Industrial Information Adviser

Backstopping officer: Juraj Pavlik
Institutional Infrastructure Branch

United Nations Industrial Development Organization
Vienna

---

*This document has not been edited

TABLE OF CONTENTS

EXPLANATORY NOTES

Currency

The Peso of the Philippines has the official value of 0.0357 US $, which means that 1 US $ is equivalent to 28.00 Pesos.

Acronyms and short terms

APCTT	- Asian and Pacific Center for Technology Transfer
BSMBD	- Bureau of Small and Medium Business Development (of DTI)
CD-ROM	- Compact disc - read only memory; an opto-electronic medium for the storage of large amount of retrievable data on a small, machine readable disk
CDS/ISIS	- short name of a database management software developed by Unesco for the storage and retrieval of textual data.
DATANET	- Short name of the package switched data transmission system of the Philippine PTT.
DOST	- Department of Science and Technology
DTI	- Department of Trade and Industry
IDRC	- International Development Research Institute
IIA	- Industrial information adviser
STII	- Science and Technology Information Institute (of DOST)
TIPS	- Technological Information Pilot System
TIS	- Technology Information Services (used also for Technology Information System)
TITE	- Technology information training expert
UNIDO/INTIB	Industrial and Technological Information Bank of the United Nations Industrial Development Organization.

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:	Planning and starting the development of technology information services

The main objective of the first mission of the industrial information adviser (hereinafter: IIA) was to prepare a revised, detailed and realistic work plan and to start the organizational and substantive project activities. The national project staff has been selected by the national project management in consultation with the IIA. General and special information needs were primarily assessed. A survey of databases and other information sources existing at the responsible counterpart agencies and other offices was prepared and further development was planned. Information services (inquiry services; provision of technology and market packages; follow up services, extension services) were designed and linked to databases. Problems concerning the establishment of a long distance on-line information network for messaging and retrieval were discussed and clarified. The IIA and the national counterpart staff from the headquarters of the responsible agencies visited the regional centers for technology information services to clarify the tasks of the centers at present and in the future. On the job training was given for members of the national staff.

INTRODUCTION

This report is based on the activities accomplished during the mission of the industrial information adviser from 04 November to 08 December 1990 (including briefing, travel, work in the field from 07 November to 02 December and preparation of the present report). This was the first part of split missions (see: Annex 1.).

The original objectives of this phase (to prepare a detailed work plan and start the essential project activities: the organization of the network for technology information services, the assessment of information needs, the establishment of databases, the purchase and installation of computer hardware and software, the design of information services and marketing activities) were not revised and were attained. The results are reflected in the detailed report on the project activities, as well as, in the recommendations.

I. ACTIVITIES

This chapter is organized by planned project
activities as listed in the draft revised work plan.
(Annex 1.) This means some deviations from the listing of
activities in the project document and the original work
plan. The reasons for this deviation are explained in the
recommendations and in the introductory remarks to the
draft revised work plan.

A. Organizational, coordinating and planning activities

The technology information services (hereinafter
(TIS) are planned as a common undertaking of two
responsible government agencies, the Department of
Science and Technology (hereinafter: DOST) and the
Department of Trade and Industry (hereinafter: DTI). The
organizational units of these department appointed to act
on behalf of them for the TIS are: the Science and
Technology Information Institute of the DOST
(hereinafter: STII) and the Bureau for Small and Medium
Business Development (hereinafter: BSMBD) of the DTI.

DOST and DTI signed an agreement on the common
execution of the TIS project. They selected the
membership of a steering committee to the project and the
four regional centers of DOST and DTI being in charge of
the execution of the regional tasks in the establishment
and provision of technology information services. Two of
the selected regional centers (Regions VII and X) are
based at the regional offices of DOST and the other two
centers (Regions I. and XI.) at the regional offices of
DTI. According to the agreement the TIS regional centers
based at DOST regional centers will include one or more
staff from the DTI regional center of the region and the
DTI-based regional centers will include staff member(s)
from the DOST regional center in charge.

The establishment o: the regional centers TIS
centers has been accelerated after the mission of the
technology information training expert (hereinafter TITE)
to the project, Dr. Bahaa El-Hadidy, who visited

(together with the junior professional officer of UNIDO
in the Philippines Mr. M. Winther) the regional centers
in Regions VII. and XI. The IIA (accompanied by TIS staff
members from DOST and DTI headquarters) visited the
regional centers in Regions I., X. and XI. A planned
visit to the TIS regional center in Region VII. had to be
cancelled because of heavy devastation caused by a
typhoon during the period covered by this report.

Based on the experiences of personal visits the
organization of the regional TIS centers and the starting
of their activities reached a favorable development stage
and offers an appropriate basis for further development,
except in Region X., where the organization of the
regional TIS center will be started on the basis of the
findings of the IIA and the headquarter staff members
visiting the DOST regional office in charge.

During the visits at the regional TIS centers the
IIA and the staff members of DOST and DTI headquarters
discussed the development of the regional centers and
their tasks, in general and concerning the assessment of
information needs of the end users of TIS, the contacts
with users' organizations, the definition of priority
areas for TIS, the preparation and/or further development
of local databases and the installation of the computer
hardware and software provided by the project, in
particular. The general framework of TIS, including the
planned structure of databases, the communication network
between TIS centers and headquarters, the contents and
form of primarily designed information services was
outlined and discussed with the staff of the regional TIS
centers and their heads at DOST and DTI regional offices.

STII and BSMBD respectively are not the only
institutions of DOST and DTI being relevant from the
point of view of TIS. More detailed information on those
agencies maintaining information sources and databases
which could and should be used for TIS are included in
Section E. All agencies involved declared their
willingness for cooperation and provision of information.
However, organizational and financial questions should be
clarified to assure the smooth functioning of the system

and its co-operating units.

This leads to the last organizational feature. The questions of financing the regular TIS activities are not clarified in the project documentation. Similarly the sharing of costs among agencies taking part in TIS operations and the pricing policies of information services were not discused preliminary. The IIA discussed the principles of financing and pricing with the national project management and with some target end users of TIS.

B. Selection and training of TIS staff

The international personnel selected to the project started its activities in July 1990 (TITE) and in November 1990 (IIA). The planning and harmonization of the project activities as included in the draft revised work plan requires some changes in the number and dates of missions of international experts. The relevant proposal was discussed with the national counterpart and is included in the recommendations and in Annex 5.

A steering committee for TIS was composed of undersecretaries of the national implementing agencies (DOST and DTI), the directors of STII and BSMBD and the UNIDO director in the field.

The TIS staff at DTI headquarters had been selected prior to the mission of the IIA and the DOST headquarters staff in consultation with the IIA. Staff members for DTI office-based regional TIS centers and DTI staff for DOST office-based regional centers has been appointed. The staff of DOST regional office-based TIS centers and the staff representing DOST regional offices at DTI based regional centers has also been appointed, except of Region X., where the appointment will take place soon. For the list of senior national counterpart staff see Annex 2.

On-the-job training was given by the IIA to the national counterpart staff on the development of databases, selection of information sources, planning and designing services , development of retrieval languages and other topics. Training courses conducted by the computer experts oі STII headquarters will be organized

for the TIS staff at the headquarters (first course) and
regional offices (second course) on the use of the
application oriented software, CDS/ISIS selected for the
establishment and use of most planned databases.

The presentation of an orientation workshop is
planned for June/July next year. This workshop can be
combined with lectures and demonstrations on the
UNIDO/INTIB databases. The organization of a workshop
limited to UNIDO/INTIB databases does not seem feasible
and justified.

As a next step fellowship training and study tours
should be organized for TIS staff members selected by the
national counterpart, the TITE and the IIA. Finally a
training course should be planned for the TIS staff and
interested users of technology information services in
the second half of 1992 demonstrating the existing
databases and communication network of the system as well
as the retrieval, processing and repackaging of
information for TIS services. The duration of this course
is planned for at least two weeks and not only the
activities and facilities of the headquarters but also
regional activities should be demonstrated at the site of
one or more regional centers.

Teaching aids (training packages) on technology
information services and on the techniques of their
preparation will be compiled by the TITE. On-the-job
training of the staff will continue.

C. Assessment of technology information needs

The regional TIS centers play a decisive role in the
assessment of information needs. They have close contacts
to the various industrial associations, chambers of
commerce and other non-governmental organizations.
Information needs expressed by local entrepreneurs can be
registered at the regional centers. They were encouraged
to register these needs, to establish databases on their
clientele and activities.

Other important sources for the assessment of
information needs are the lists of technological and
investment priority areas in the regions. These lists

were made available for the TIS staff.

The available data on information needs are sufficient for the overall design of information services, background databases and other sources. The actual needs will be expressed by the inquiries of the users. For the preparation of "aggressive" information services, i. e. for the provision of technology and market information packages to "would be" entrepreneurs and other potential users a list of priorities is envisaged. This will be based on the existing lists of technological development and investment priorities, as well as, on the collected and evaluated experiences of the regional centers and other agencies dealing with the promotion of technological development.

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

The main components of the development of data processing equipment are:

a) the strengthening of the computer facilities at the TIS regional centers by the provision of micro-computers and appropriate software for database management and for the preparation of information services;

b) the development of information retrieval and of output techniques at DOST and DTI headquarters by the provision of CD-ROM drives, microcomputers, laser printers and appropriate software;

c) the establishment of an on-line information network connecting the TIS regional centers and the headquarters through the package switched communication network of the Philippines (DATANET) and enabling remote information retrieval and electronic messaging.

Components a) and b) mentioned above do not cause special problems, the purchased equipment arrived to DOST and DTI one day before the end of the present mission of the IIA. The equipment will be installed at the regional centers with the help of the headquarters' computer experts.

The establishment of the on-line network causes

various problems. At present DTI headquarters and the
regional office of DTI in Region XI (the TIS regional
center) are already connected to DATANET. For the
connection of the DOST (STII) host computer to the
network plans were prepared by DOST computer experts in
consultation with the expert of UNIDO/INTIB. The
connection of STII to the network is essential because
the majority of TIS databases are established on the
Hewlett-Packard (HP) 3000 computer and on the
microcomputers of STII. For the connection the HP 3000
computer should be upgraded,, modems should be purchased,
appropriate telecommunication lines from STII and from
three regional centers to the DATANET ports should be
established and the regular connecting and traffic costs
should be covered. For these reasons a revision of the
equipment component in the project budget seems to be
necessary (see the recommendations and Annex 6.)

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

The technology information services should be based
on databases containing technological and market
information. Some databases are already existing at DOST
and DTI respectively, although most of them need
upgrading or at least the amendment of subject indexing
and/or the flagging of those records which are relevant
for TIS. Some other databases (first of all databases
containing data of potential TIS users) have been
established at the TIS regional centers. Databases of
UNIDO/INTIB, of the Asian and Pacific Center for
Technology Transfer (APCTT) and of the International
Development Research Center (IDRC) are also available.
These databases contain data on technologies available in
the Philippines and abroad, on patents, on various
published documents concerning manufacturing
technologies, on foreign markets, on research and
development projects, on institutions and experts active
in the field of technological development etc.

Other useful information is available at various
agencies of DOST and DTI (Technology Application and
Promotion Institute of DOST, Bureau of Product Standards,

Bureau of Patents, Trademarks and Technology Transfer, Product Development and Design Center of the Philippines and other agencies of DTI). Preliminary agreements have been achieved with the managers of these agencies on the establishment of databases of their data in co-operation with STII. A further agreement was outlined as a result of consultations with the director of the National Bureau of the UNDP/DEVNET Technology Information Pilot System (TIPS) on the areas of cooperation.

In spite of the availability or of the possible establishment of databases mentioned above, the technology information services cannot avoid the access to other international and foreign databases. For these reasons the purchase of databases on CD-ROM and the establishment of connections to the major database hosts abroad is essential. At the present phase neither the basic information for the selection of databases nor the financial sources are available.

The library collections and publications of STII as well as the information sources available in the subsystems of the National Scientific and Technical Information System can serve as a good background for TIS operations.

The upgrading of existing databases and the establishment of new databases and the availability of other sources was discussed with the national counterpart. Initial steps for upgrading and flagging of existing databases were planned.

F. Establishment and provision of technology information services

The types, sources, contents and the preparation techniques of technology information services were planned and discussed with the national counterpart and with a few information end-users.

According to these discussions and planning activities, two major types of technology information services are considered: inquiry services and the

provision of technology packages.

The contents of inquiry services will be determined by the users. The inquiry may concern complex technology (or technology and market) information, e.g. in the case if a would be entrepreneur intends to start new business in the field of industry. Other inquiries can be limited by scope e.g. concerning difficulties in the use of a given technology. The technology information services for inquiries ("servicing queries") will be presented in a packaged/repackaged form, i.e. the user will not receive a bibliography (list of references) but the full available factual information introduced and arranged in a user friendly way. The user can ask for regular update or express other wishes and comments concerning the service by the use of "feedback cards".

The technology packages will be prepared on the subjects of priority areas of technology development. This will be a kind of "aggressive" services, i.e. the technology packages will be distributed among would be entrepreneurs, small and medium scale businesses active in the given field and other potential users without waiting for their request. These packages will contain all available and useful information on the available technologies, equipment, raw materials, design, product development, product standards production requirements market possibilities etc. Every package will have a preface and/or an introduction summarizing the most important information included and explaining the contents and use of the package. The provision of technology packages should cover all priority development after a period of their step-by-step preparation. The regular updating of technology packages is considered.

The preparation of services is a common task of the regional centers and the headquarters. In most cases the inquiries will be collected and the development priority areas for technology packages will be defined by the regional centers. Some inquiries can be serviced directly by them on the basis of their regional databases and databases downloaded from or other information sources provided by the headquarters. However, in most cases the

service packages will be prepared by the headquarters, sent to the regional TIS center in charge and amended or extended by the latter.

The IIA discussed with the national staff the possibility of setting up extension services, i.e. visiting potential information users of information to help them in problem solving by information and make them aware of the usefulness of TIS. The development of this kind of services seems to be necessary but its introduction depends on manpower and financial sources available.

G. Marketing of TIS

The marketing aspects were discussed with the TIS staff at the headquarters and regional centers. The attention of the national staff was drawn to the fact that the establishment of sources for future marketing activities (e.g. lists and databases of individual users, users' organizations) and the general marketing of TIS should be started immediately, considering the present technology information activities of the centers. However, the essential marketing activities should start after the detailed design and launching of services.

II. CONCLUSIONS

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

a) The objectives as reflected by the project document can be attained.

b) The revision of the budget is necessary to assure the establishment and proper functioning of an on-line computer network and to provide for access to international databases.

c) The provision of technology information services is a real need of the economy and a major pre-condition of further development. The co-operation of the two major

departments is a big achievement and a guarantee for the success of the project. However, the financial sources remain a heavy problem and requires the consideration of pricing policies and cost sharing principles for technology information services.

RECOMMENDATIONS

1) The approval of the draft revised work plan is recommended, because of the necessary rephasing of activities and for a clear listing of tasks, excluding repetitions and overlaps, as far as possible. The activities of the restructured work plan can be connected to the immediate objectives and outputs as listed in the project document.

2) The further missions of international experts are recommended as specified in Annex 5. This schedule was discussed with the national counterpart and seems to be essential because it makes the detailed design of the system, the selection of trainees and the orientation training possible at a relative early date whereas the establishment of the system and the services, as well as further training can be accomplished after the development of databases and installation of the computer network.

3) The strengthening of the organizational framework and the final appointment of staff at TIS regional centers is recommended, including the preparation of essential and formal agreements on the cooperation of the DOST and DTI staff in the regional centers.

4) The conduct of training courses for TIS staff on the use of database management software (first of all CDS/ISIS) and word processing/desk-top-publishing software is recommended. In addition on-the-job training should be provided, combined with the installation of the hardware and software purchased for the regional centers.

5)   The presentation of lectures and demonstration of UNIDO/INTIB databases is recommended within the framework of the planned orientation workshop rather than as an individual workshop on UNIDO/INTIB.

6)   The TIS regional centers should continue the collection of data on users and their organizations.

7)   The computer hardware and software purchased for this project should be installed at the TIS regional centers. with the assistance of the computer experts of DOST and DTI.

8)   The revision of the equipmen': component of the budget is recommended on the basis of the data included in Annex 6. The present budget does not include the costs for the establishment of the on-line network (modems, upgrading of host computer, access to DATANET), the costs for the subscription to CD-ROMS and the costs of accessing international and foreign databases. Prior to the revision the cost estimates in Annex 6. should be examined and confirmed or modified by the national counterpart, taking into account in the case of the on-line network all TIS regional centers.

9)   The access to DATANET should be realized as soon as possible, subject to the availability of financial sources. If, however, the establishment of the on-line network fails, new plans should be prepared for   the communication within the system of TIS.

10) Directories of databases on CD-ROM and of on-line accessible databases should be purchased as soon as possible. CD-ROMs for subscription and the appropriate on-line host should be selected.

11) The establishment/development of databases on patents, product standards and design projects should be prepared by conclusion of final agreements between the

interested bodies and by selection of material for input.
The possibilities and conditions of the use of DTI
databases on export markets and database-components of
the management information system of DTI should be
clarified.

12) The development of the retrieval languages of
existing databases is recommended. The use of the
appropriate (Philippine and/or international) product
classification should be introduced. The thesaurus of
STII should be revised and updated following the
principles agreed upon.

13) The complete and up-to-date delivery of
UNIDO/INTIB and APCTT databases should be assured. The
regional TIS centers should have their own copies of
these databases.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Project in the Republic of the Philippines

JOB DESCRIPTION
DP/PHI/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	

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:

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.

..../..

---

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 SDI; 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 DOST 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, member of the TIS Steering Committee
Mr. Enrico F. Florencio	Head of the EDP Division and of the TIS staff at STII
Ms. Imelda O. Casal	Database Manager, member of TIS staff
Ms. Maribel Palafox	Database Manager, member of TIS staff

DTI/BSMBD Headquarters

Mr. Zafrullah G. Masahud	Director of BSMBD, member of the TIS Steering Committee
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, member of TIS staff
Ms. Gladina M. Aquino	Senior Trade and Industry Development Specialist, member of TIS staff

Region I.

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

The name of the representative of the DOST regional office is not available

Region VII.

The names of the regional TIS staff members from the DOST Regional Office are not available.

Ms. Brenda A. Orosco   Chief Trade and Industry Development Specialist, member of the reyional TIS staff on behalf of the DTI Regional Office

Region X.

The regional TIS staff members from the DOST Regional Office were not appointed.

Ms. Elizabeth C. Tagaylo   Senior Trade and Industry Development Specialist, member of the regional TIS staff on behalf of the DTI Regional Office

Ms. Josephine T. Turrecha   Senior Trade and Industry Development Specialist, member of the regional TIS staff on behalf of the DTI Regional Office

Region XI.

Mr. Larry N. Digal   Chief, Special Projects, Information and Institutional Development Division, Head of regional TIS staff

Ms. Evelyn A. Perin   Trade and Industry Development Specialist, member of the regional TIS Staff

Ms. Madel M. Morados   Head of Division and of the regional TIS staff members on behalf of DOST Regional Office.

SELECTED LIST OF ORGANIZATIONS VISITED AND PEOPLE MET

DTI, Bureau of Patents, Trademarks and Technology
Transfer - Director **Mr. Ignacio S. Sapalo**

DTI, Product Development and Design Center of the
Philippines - Executive Director **Ms. Minerva P. Franco**

DTI, Bureau of Product Standards - The name of the
director is unfortunately not available at present

DTI, Bureau of Export Trade Promotion, Export Development
Project - Project Manager **Mr. Francis N. O. Lopez**

DTI, Management Information Services - **Mr. Danilo M.
Bungubung.**

DOST, Technology Application and Promotion Institute -
Deputy Director **Ms. Zinnia P. Teruel**

Technological Information Pilot System (UNDP/DEVNET),
National Bureau - Director **Mr. Benjamin H. Milano**

Davao City Chamber of Commerce and Industry - Vice-
president **Mr. Rey de Leon**

Association of Metalworking Industries - Davao Chapter -
President, Engr. **Mr. Nelson Maglana.**

WORK PLAN

Project No. and Title: DP/PHI/86/016
                        Development of Technology Information
                        Services

                Version: 1990-11-21

Introductory Remarks

        This work plan is being compiled to meet the actual
requirements of the project. The original (tentative) work plan
as attached to the project document, as well as. its last revised
version prepared for twelve months ending July 1991 are outdated
in terms of phasing project activities. The project document and
the tentative work plan scheduled project activities for
1989,1990 and 1991. In reality the essential project activities
were started in July/November 1990, and the activities cannot be
finished before 1992. The actual draft rephases the project
activities accordingly.
        Activities were listed in the original and in the revised
work plan following the order of immediate project objectives and
outputs with some exceptions. However, the inclusion of
overlaping activities and the lack of logical links between
certain activities, as well as, the omission of some essential
activities required a new and ammended list of activities. A
table of correspondence of the original and revised numbering of
activities is attached (pages 36 - 38.)
        The work plan consists of a basic textual plan containing
all information on project activities and of two annexes. In the
textual part, the persons participating in the various activities
are indicated by mnemonic codes as follows:

                PM - Project Management (National)
                HS - Staff members of DOST and DTI headquarters
                RS - Staff members of the regional TIS centers
                IIA -(UNIDO) Industrial Information Adviser
                TITE-(UNIDO) Technology Information Training Expert

        The dates (start and end of activities) are indicated by
year-month in all-numeric form. Start and end dates are separated
by slash (e.g. 1990-11/1992-06. The arrow (->) sign after the
deadline indicates activities continuing after their primary
accomplishment. The approval of some recommendations made by the
IIA is presumed.
        Annex A   to the workplan-contains the flowchart (line
diagram) of the project activities.

1. Organizational, coordinating and planning activities

1.1 Selection and fielding of international personnel.
PM - 1990-04/1990-09, IIA - 1990-11/1990-12, 1991-06/1991-08,
1991-11/1992-03 and 1992-08/1992-12; TITE - 1990-07/1990-08,
1991-06/1991-07 and 1992-08/1992-10.

1 .2 Establishment of coordination and management
mechanisms for TIS. PM - 1990-03/1990-12 ->.

1.3 Preparation of manuals, guidelines on coordination and
cooperation features (including cost-sharing). IIA,
(preparation), PM (approval) - 1991-07/1992-03.

1.4 Establishment and functioning of TIS regional centers.
PM, HS, RS - 1990-07/1990-12.

1.5 Preparation of manuals, guidelines on TIS
regional centers operations. IIA. HS. RS (preparation),
PM (approval) - 1991-07/1992-10.

1.6 Building relations with NGO's, associations and the
private sector. See : 3.1

1.7 Preparation of medium- and long- range plans for
sustaining and development of TIS. PM, IIA,
HS - 1992-10/1992-12 ->.

2. Selection and training of TIS Staff

1. Selection of international personnel. See 1.1

2.2 Selection of TIS personnel for DOST and DTI headquarters
as well as for TIS regional centers. PM - 1990-06/1990-12.

2.3 Training of TIS staff members at local courses and
workshops (organization and conduct of training). HS. RS.
TITE. IIA - 1990-07/1990-08, 1990-12/1991-04. 1991-06/1991-07.
1992-08/1992-09.

2.4 Preparation of training plans and packages. TITE, IIA,
HS - 1991-06/1991-07, 1992-08/1992-09.

2.5 Fellowship training and study tours for TIS staff
members. (organization and conduct) TITE, IIA, HS,
RS - 1991-07/1991-10, 1992-06/1992-09.

2.6 On-the-job training of TIS staff. IIA, TITE. HS,
RS - 1990-11/1990-12, 1991-06/1991-08. 1991-11/1992-03,
1992-08/1992-12.

3. Assessment of technology information needs

3.1 Building and sustaining relations with NGOs, associations and the private sector, to survey and update information needs of TIS users. HS, RS - 1990-07/1992-12 ->.

3.2 Assessment of information needs of TIS users. IIA, HS, RS - 1991-07/1992-12.

3.3 Preparation of a manual on the continous surveying and assessment of TIS users' information needs. IIA, HS - 1992-09/1992-10.

3.4 Definition of priority areas for technology information services. PM, HS, RS - 1991-07/1991-08 ->.

4. Aquisition and installation of computer and telecommunication hardware and software.

4.1 Selection, requisition and installation of computer and telecommunication hardware for the headquarters and regional offices. PM, TITE, IIA, HS, RS - 1990-07/1991-90.

4.2 Leasing and installation of telecommunication connections between the headquarters and the regional centers as well as, to access international database hosts. HS (preparation), PM (approval) - 1990-12/1991-12 ->.

4.3 Selection ans installation of application oriented software for database management, information retrieval, electronic mail, text processing and desk-top publication. TITE, RS (preparation), PM (approval) - 1990-07/1991-03.

4.4 Development of user interfaces as well as guidelines, for remote information retrieval and electronic mail. HS, IIA - 1190-11/1991-12.

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

5.1 Survey and analysis of existing indigenous (including central and regional) and international information sources. IIA, HS - 1990-11/1991-08.

5.2 Extention of information sources by collection and acquisition. IIA, HS, RS - 1990-11/1992-12 ->.

5.3 Establishment and upgrading of technological and market-oriented databases at DOST and DTI headquarters. IIA, HS - 1990-07/1992-10 ->.

5.4 Establishment and upgrading of technological and user-oriented databases at the regional centers. IIA. RS - 1990-11/1992-10 ->.

5.5 Linking (including up- and downloading) of databases. IIA, HS, RS - 1991-06/1992-10 ->.

5.6 Selection of and access to online accessible and imported international databases. IIA, HS (preparation), PM (approval) - 1991-02/1992-09 ->.

5.7 Preparation of guidelines and manuals for the development and use of databases. IIA, HS - 1991-06/1992-03.

6. Establishment and provision of technology information services

6.1 Definition of types of services for the clientele. IIA, HS, RS - 1990-11/1991-07.

6.2 Linking services to databases. IIA, HS, RS - 1991-06/1992-09.

6.3 Designing and starting of inquiry services and publications. IIA, HS, RS - 1991-06/1992-02 ->.

6.4 Designing and starting of services providing technology and market profiles (information packages). IIA, HS, RS - 1992-02/1992-11 ->.

6.5 Development of extension services by visiting users for technological problem solving. IIA, RS - 1992-02/1992-11 ->.

6.6 Preparation of manuals, guidelines on the preparation and provision of services. IIA, HS, RS - 1991-07/1992-09.

7. Marketing of TIS

7.1 Marketing of information services by means of local (and if appropriate nation-wide) mass communication media. HS, RS - 1991-08/1992-12 ->.

7.2 Marketing information services by means of maintaining contacts with associations, NGOs. HS, RS - 1990-12/1992-12 ->.

7.3 Marketing information services and servicing querries at trade exhibitions and fairs. HS, RS - 1991-07/1992-12 ->.

7.4 Maintaining databases of potential users and approaching them by circulars, visits, provisions of "agressive" services etc. HR, RS - 1991-11/1992-12 ->.

FLOWCHART TO THE WORKPLAN TO THE PROJECT DP/PHI/86/016

A. SIGNS DESIGNATING THE PARTICIPATION OF INTERNATIONAL AND NATIONAL STAFF

```
...........    PM   (National Project Management)
...........    HS   (Staff members at DOST/DTI headquarters)
./././././.    RS   (Staff members at TIS Regional Center)
_____     IIA  (Industrial Information Adviser)
++++++++++++   TITE (Technology Information Training Expert)
```

B. FLOWCHART

ACTIVITIES		1990 QUARTERS				1991 QUARTERS				1992 QUARTERS			
No.	SHORT DESCRIPTION	I	II	III	IV	I	II	III	IV	I	II	III	IV
1	Organization, coordination, planning												
1.1	Selection & fielding, international experts												
1.2	Coordination & management mechanisms												
1.3	Coordination cooperation manuals												
1.4	Regional centers establishment												
1.5	TIS regional centers manual												
1.6	Building of relations with NGO's association. See:3.1												

- 31 -

ACTIVITIES		1990 QUARTERS				1991 QUARTERS				1992 QUARTERS			
No.	SHORT DESCRIPTION	I	II	III	IV	I	II	III	IV	I	II	III	IV
1.7	Medium and long term plans for TIS												
2	Selection and training of TIS staff												
2.1	Selection of international personnel. Sec.1.1												
2.2	Selection of TIS personnel (Headquarters & Regions)												
2.3	TIS local courses, workshops												
2.4	Training plans, packages												
2.5	Fellowship training, study tours												
2.6	On the job training												

ACTIVITIES

No.	SHORT DESCRIPTION
3	Assessment of technology information needs
3.1	Building relations with NGOs, associations, private sector, survey needs
3.2	Assessment of information needs
3.3	Manual on survey and assessment of needs
3.4	Definition of priority areas for TIS
4	Computer and telecom. hardware and software
4.1	Selection, requisition and installation of hardware
4.2	Telecommunication connections between regions and hquarters
4.3	Selection and installation of application softwares

(Gantt chart with columns: 1990 QUARTERS — I, II, III, IV; 1991 QUARTERS — I, II, III, IV; 1992 QUARTERS — I, II, III, IV)

ACTIVITIES		1990 QUARTERS				1991 QUARTERS				1992 QUARTERS			
No.	SHORT DESCRIPTION	I	II	III	IV	I	II	III	IV	I	II	III	IV
4.4	User interfaces and guidelines (for remote retrieval and email)												
5	Information sources, databases												
5.1	Survey of existing sources												
5.2	Extension of information sources												
5.3	Establishment and upgrading of databases at headquarters												
5.4	Establishment and upgrading of databases at regional centers												
5.5	Linking of databases, upgrading, downloading												
5.6	Selection of and access to international databases												
5.7	Guidelines and manuals for databases												

ACTIVITIES		1990 QUARTERS				1991 QUARTERS				1992 QUARTERS			
No.	SHORT DESCRIPTION	I	II	III	IV	I	II	III	IV	I	II	III	IV
5	Technology information services												
6.1	Definition of types of services												
6.2	Linking services to databases												
6.3	Designing and starting inquiry services and publications												
6.4	Designing and starting technology and market profile services												
6.5	Development of extension services												
6.6	Preparation of manuals and guidelines on services												

ACTIVITIES		1990 QUARTERS				1991 QUARTERS				1992 QUARTERS			
No.	SHORT DESCRIPTION	I	II	III	IV	I	II	III	IV	I	II	III	IV
7	**Marketing of TIS**												
7.1	Marketing by mass communication media							///	///		///	///	///
7.2	Marketing by maintaining contacts with NGO's, assocs.				///	///	///	///	///	///	///	///	///
7.3	Marketing and servicing querries at trade fairs							///	///		///	///	///
7.4	Databases of users and approaching by circulars, visits, services								///		///	///	///

Correspondence of activities as listed
in the actual work plan, in the project document
and in the original work plan

I.
Project document/original work plan => actual work plan

1.
1.1
1.1.1/3 => 1.1, 1.5, 2.1, 2.3, 2.6, 5.7
1.1.2/1 => 1.4
1.1.3/4 => 1.2, 1.6, 2.3, 2.4, 2.5, 3.1
1.1.4/2 => 2.2, 2.6

1.2
1.2.1/5 => 1.1, 2.1, 4.1, 4.2, 5.7
1.2.2/6 => 4.3
1.2.3/7 =. 5.6

2.
2.1
2.1.1/8 => 5.1, 5.2, 6.6
2.1.2/9 => 4.3
2.1.3/10=> 5.4
2.1.4/11=> 5.5

2.2
2.2.1/12 => 4.3
2.2.2/13 => 5.3, 5.7, 6.1, 6.2, 6.3
2.2.3/14 => 5.5, 5.6

2.3
2.3.1/15 => 3.2
2.3.2/- => 3.2, 4.4
2.3.3/16 => 5.3
2.3.4/17 => 6.4
2.3.4/18 => 6.4

2.4
2.3.1/19 => 7.1
2.4.2/20 => 1.6, 3.1, 7.2

2.5
2.5.1/- => 7.3
2.5.1/21 => 7.3

<u>3.</u>
<u>3.1</u>
3.1.1/22 => 1.2, 3.4
3.1.2/23 => 1.3
3.1.3/24 => 1.7

New => 3.3, 6.5, 7.4

II.
<u>Actual workplan => project document/original work plan</u>

<u>1.</u>
1.1 => 1.1.1/3, 1.2.1/5
1.2 => 1.1.3/4, 3.1.1/22
1.3 => 3.1.2/23
1.4 => 1.1.2/1
1.5 => 1.1.1/3
1.6 => 1.1.3/4, 2.4.2/20
1.7 => 3.1.2/24

<u>2</u>
2.1 => 1.1.1/3, 1.2.1/5
2.2 => 1.1.4/2
2.3 => 1.1.1/3, 1.1.3/4
2.4 => 1.1.3/4
2.5 => 1.1.3/4
2.6 => 1.1.1/3, 1.1.4/2

<u>3</u>
3.1 => 1.1.3/4, 2.4.2/20
3.2 => 2.3.1/15, 2.3.2/-
3.3 => 0
3.4 => 3.1.1/22

<u>4</u>
4.1 => 1.2.1/5
4.2 => 1.2.1/5
4.3 => 1.2.2/6, 2.1.2/9
4.4 => 2.3.2/-

<u>5</u>
5.1 => 1.2.1/8
5.2 => 2.1.1/8
5.3 => 2.2.2/13, 2.3.3/16
5.4 => 2.1.3/10
5.5 => 2.1.4/11, 2.2.3/14
5.6 => 1.2..3/7, 2.2.3/14
5.7 => 1.1.1/3, 1.2.1/5, 2.2.2/13

<u>6</u>
6.1 => 2.2.2/13
6.2 => 2.2.2/13
6.3 => 2.2.2/13
6.4 => 2.3.4/17, 2.3.5/18
6.5 => 0
6.6 => 8

<u>7</u>
7.1 => 2.4.1/19
7.2 => 2.4.2/10
7.3 => 2.5.1/-, 2.5.2/21
7.4 => 0

PROPOSED SCHEDULE FOR THE FIELDING OF INTERNATIONAL EXPERTS

Erik I. Vajda industrial information adviser

| Mission 1. 1990-11/12 | - | 35 days | (executed) |

Mission 1. 1990-11/12   -   35 days   (executed)

Mission 2. 1991-06/08   -   63 days

Mission 3. 1991-11/1992-03 -   136 days

Mission 4. 1992-08/12   -   131 days

                    Total: 365 days

Dr. Baaha El-Hadidy technology information training expert*

Mission 1. 1990-07/08   -   41 days   (executed)

Mission 2. 1991-06/07   -   31 days

Mission 3. 1992-08/10   -   50 days

                    Total: 122 days

---

*The proposed schedule was not checked up with Dr. El-Hadidy

- 41 -

Annex 6.

THE EQUIPMENT COMPONENT OF THE BUDGET

(expenditures and needs)

(in US $-s)

Purchased items:

Computer hardware and software	65,357
Vehicles	60,000*
Total:	125,357

Estimated costs of on-line network

Upgrading of HP 3000	23,883**
Modems	10,000
Access to package switched network (one year)	8,000
Total:	41,883

Estimated costs of accessing foreign databases

CD-ROM databases	12,000
On-line access	10,000
Total:	22,000
Grand total:	189,240

Equipment component total in the project budget — 148,400

Missing amount: 40,840

---

* Approximate amount

** Based on the price quotation of The Online Advanced Corporation (Distributor of Hewlett/Packard products in the Philippines).