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DP/PNG/86/002

PAPUA NEW GUINEA

Technical report: Development of an information management
system for the Department of Trade and Industry*
(Part two)

Prepared for the Government of Papua New Guinea
by the United Nations Industrial Development Organization,
acting as executive agency for the United Nations Development Programme

Based on the work of Danielle Wilson,
expert in computer science (information systems)

Backstopping Officer: W. H. Eckert, Industrial Planning Branch

United Nations Industrial Development Organization
Vienna

* This document has not been edited.

Explanatory Notes

Value of local currency in terms of United States Dollars
on 15 January 1989
1 Kina = US\$ 1.2116
1 Kina = 100 Toea

List of abbreviations

BDO	Business Development Officer
CTA	Chief Technical Adviser
DTI	Department of Trade and Industry
IMS	Information Management System
IS	Information System
ISIC	International Standard Industrial Classification
NIDA	National Investment and Development Agency
NSO	National Statistics Office
PNGSIC	PNG Standard Industrial Classification
PSBA	Provincial Small Business Association
SBDC	Small Business Development Corporation
SITC	Standard International Trade classification
UNV	United Nations Volunteer

List of technical abbreviations

C	Character field
DB	Database
DBF	Database file
D	Date field
L	Logical field
N	Numeric field

Abstract

This report entitled Development of an Information Management System for the Department of Trade and Industry has been prepared in the frame of the project Institution Building for Industrial Promotion, reference DP/PNG/86/002.

The aim of the project is to assist the strengthening of the industrial promotion activities of the PNG Department of Trade and Industry. The necessity to develop an efficient Information System was defined as a priority, aimed to disseminate information for industrial and trade promotion, to facilitate the project analysis management and to enhance the availability of socio-economic data on PNG for internal use to support decision-making activities.

A preliminary phase for the establishment of an industrial information system has been accomplished by Gerardo Pataconi, UNIDO Associate Expert in Industrial Economics and Statistics. The present report follows Mr. Pataconi's analysis and describes the consultant's activities during her 3 months' mission (28 October 1988 - 31 January 1989).

The first part analyses the results of the preliminary study and evaluates the IMS to date. Guidelines to the IMS have then been drafted: they include a users' guide and rules to input data. Procedures for computer control and data security have also been defined. A study of the role of DTI Information Service and recommendations for the management of the Information System, including the computerizing of the reference library and desktop publishing, are aimed at the establishment of an efficient Information Service. Finally, a comprehensive computer training programme has been set up for 1989 comprising a phase of formal training carried out by external PNG consultants and a phase of informal in-house training.

Recommendations include the necessity for the Department of Trade and Industry to recruit staff for the Information and Statistics Division as soon as possible and, for the UNIDO team, to complete and fully implement DTI Information Management System, including computer control and data security, to implement and supervise the computer training programme, to train the national officers who will be involved in the coordination and management of the IMS and of the library, to introduce communications technologies and, therefore consider long-term or short-term expertise. .

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INTRODUCTION

The need for the establishment of a computerized industrial information system was identified when the project PNG/86/002 was initially formulated by UNIDO. This was further emphasized when it was decided that DTI becomes the central point for all products and industries inquiries as a decision support to overseas and domestic investors and traders. To develop such a system, it was necessary to take into account all the activities and needs of DTI in terms of industrial and trade promotion, dissemination of information and some administration procedures. It was also necessary to take into account the foreseen start-up of regional DTI offices and PNG trade missions overseas.

The initial phase of the information project was implemented by G. Pattaconi, UNIDO Associate Expert in Industrial Economics and Statistics, who carried out a survey of users' needs, identified databases to be set up in order to respond to the users' needs, collected, analysed and processed appropriate data, initiated computerised statistical databases (mainly Highlands statistics, import/export statistics, feasibility studies, general economics, company register), with the assistance of the UNV computer programmer and the UNV statistician, and defined the overall architecture of the system. Advice on software/hardware was also provided.

To provide further assistance in the development of the IMS, UNIDO was requested to proceed with the recruitment of an Associate Expert in informatics/database administration mid 1988. Assistance from local computer experts was also investigated by the CTA. However, in view of the shortage of informatics expertise in the country, a short term computer/information systems consultant was required for 3 months, starting 29 October. The consultant was asked to carry out the following tasks, as per her terms of reference:

1. Analyse the results of the preliminary analysis for an industrial database/information system which will be available at the date of his/her arrival;
2. Identify the activities, procedures, data to be included in the computerised IS;
3. Design the architecture of the IS taking into consideration all the potential users and the data already stored on the presently available PC;
4. Identify the most suitable hardware to implement the IS, taking into account technical, cost and local availability criteria;
5. Begin the implementation of the system organizing the team to develop the software.

However, at the consultant's arrival, part of the work (mainly points 2, 3 4 & 5) had largely been carried out and the CTA redefined the terms of reference as follows:

Taking account of the status of the project and the particular background of the consultant, more detailed requirements are:

1. Evaluation of IMS
2. Work closely with UNV computer programmer to refine the software of the Information Data Bases
3. Assist in finalizing/procuring and installing hardware
4. Set up a computer management system including:
 - security control
 - back-up routines
 - diskettes/manuals/supplier storage
5. Assist in deliberation of a computer committee to discuss:
 - training
 - computer control
 - computerization of office procedures (approach to)
6. Advise training of UNV so that she can effectively manage the system after departure of consultant
7. Study/advise on computerizing the library reference system and publications possibilities - in Information System.

Apart from point 3 which was covered by the CTA, ie. finalizing and procuring hardware (excluding installing the hardware which was still awaited when the consultant left), the above tasks were carried out by the consultant under the supervision of the CTA and in close cooperation with Miss Kyi Kyi Myint, UNV computer programmer. A very useful contribution was made by Miss Mya Mya Kyi, UNV statistician attached to the Statistics and also Information Branch.

The evaluation of the IMS includes an analysis of the IMS to date and proposed modifications to enhance the quality of the contents of the databases in view of the users' needs, as well as the ease of use. Guidelines including a users' guide and rules to input data have been drafted and will have to be revised and updated when the system is fully implemented. A detailed study of an approach to computer control and data security is followed by an analysis of the development of the Information Division. Finally, a comprehensive computer training scheme has been scheduled for 1989, taking into account present needs and future expansion of the Department as well as that of the Provincial Small Business Association.

RECOMMENDATIONS

1. The Department of Trade and Industry has started the recruitment process and it is essential that adequate staff is recruited as soon as possible to cater for the needs of the Information Division as per the organigramme proposed in annex IX, so that the newly appointed staff can be trained, work in close cooperation with the UNIDO team and benefit from their expertise. In the absence of well trained nationals in the Information Division, the IMS will rapidly deteriorate and the newly acquired technologies may fall into disuse.

2. Particular attention should be given to the training of the Chief Information Officer and of the Computer Operator, so that the Information Service achieves the objectives described in chapter IV.

Further UNV computer programmer and/or computer/information systems consultant time (3 months in all) should be dedicated to their training.

3. The computer training programme was initiated in January. The success of the overall 1989 schedule will depend largely on close supervision and follow up. This will be particularly critical when the training programme reaches its phase of in-house informal training where the active participation of the UNV/UNIDO team, reduced to 5 people by the time the UNV statistician leaves in April, is required.

After the departure of the computer specialist, who has planned the schedule and supervised the early days of the training, it is important that the CTA coordinates the training with the national training officer until a UNV training coordinator is appointed.

4. DTI Information Management System is in the process of being implemented and the overall architecture of the system has been designed. However, as a result of the evaluation of the system, some areas of improvement have been stressed (see chapter I). It is therefore important that the IMS be fully implemented and finalized. This includes refining and finalizing existing databases and finalizing the guidelines to DTI IMS.

This work is to be carried out by the UNV computer programmer over a period of 9 months and by the UNV statistician over a period of 3 months.

5. Procedures for computer control and data security have been written by the consultant. They must be applied carefully in order to establish a routine. Such routine will be initialized by the UNV computer programmer. When the routine is well established, the UNV computer programmer must train DTI officers who will be involved in the management and update of the Information Management System as well as officers who will be responsible for computer control in their own divisions.

6. Special consideration should be given to the library. At present it is completed misused, due to the lack of qualified staff and it is vital that it is restored to its past standards.

Some training, by UNV computer programmer and/or by computer consultant,

will be required, particularly for library automation (1 month).

7. Communications technologies, including access to international databases and modem communications with the provincial offices and PNG Trade missions overseas, ought to be considered. Further training (about 2 months) by a computer and information systems consultant would then be required.

8. The above recommendations show the need for a long-term UNIDO computer /information systems consultant. In the absence of a long-term expert, two solutions can be envisaged:

- . either the CTA and UNV computer programmer share the load, in addition to their already heavy commitments,
- . or consideration is given to further short-term expertise.

I EVALUATION OF DTI INFORMATION MANAGEMENT SYSTEM

AS AT 25 NOVEMBER 1988

This chapter reviews DTI IMS , concentrating particularly on existing databases, but also gives an account of the databases which had been identified as a result of the analysis of the users' needs (see G.Pataconi's report) and which have not yet been implemented.

I.1 Databases

The master menu opens on a display of 7 options:

- | | |
|--------------------------|-----------------------------------|
| 1- Provincial database | 4- PNG import statistics |
| 2- Register of companies | 5- Projects & feasibility studies |
| 3- PNG export statistics | 6- COMFAR |

7- EXIT

The master menu reflects the work which has been done so far regarding the implementation of the databases.

I.1.1 Provincial Database

Current situation

The Provincial DB is well on the way. Data available from various sources including NSO, Department of Agriculture & Livestock, Department of Health, Department of Minerals & Energy, Department of Transport, Department of Police, Department of Education, ranging from 1978 to 88, has been entered on computer.

41 files constitute the Provincial database. They are divided into 4 groups:

- I Infrastructure
- N Natural resources
- S Social resources
- E Economic resources

Database file names

HLANDS1.dbf - HLANDS41.dbf

Database structure

Each file has a different structure adapted to the content of the files.

Updating the database

Each file can be updated selecting a range of years and a range of provinces (see standard list of provinces and province codes in annex I), including a total for each group of provinces and a total PNG.

Search options

Data can be retrieved from each database selecting a range of years and a range of provinces. The search can be either displayed on screen or printed according to a preset format.

Part of the data can be retrieved and saved in order to be transferred to another system (Lotus 123/SPSS PC+) and further processed.

Proposed modifications

Database coverage

The content of the files should respond to DTI requirements, with a strong emphasis on industrial and trade statistics. At present, the DB includes a large amount of social statistics (eg: 10 files for education and 5 files for post office statistics) as well as infrastructure statistics which ought to be revised. Screening and regrouping part of the data already entered on computer would provide easier access to relevant information.

Once the content of each file has been more clearly defined, it will be necessary to reorganize the structure of the files and transfer some data from one file to another. The proposed configuration of the DB is as follows:

Economic Resources (files 1-19)	Infrastructure (files 20-39)	Social resources (files 40-59)	Natural resources (files 60-79)
.Value of retail sales	.Building stats	.Population	.Temperature
.Coffee/tea production	.Registered veh/ road network	.Education	.Rainfalls
.Cocoa/copra/nat. rubber production	.Electricity consumption		
.Manufact.establish output/costs, employees	.Post office statistics		
.Lendings/deposits	.Telecommunications/ telephone		
.No of applications & values of loans applied			

The second phase will consist in extending the DB from the 5 Highlands provinces to all 20 provinces, plus groups of provinces and a total PNG.

Database file names

To reflect more accurately the extension of the DB, the name of the files ought to be changed from HLANDS.dbf (Highlands) to PDATA.dbf (standing for Provincial DB).

DB structure

The structure of each file will be modified accordingly.

Furthermore, all existing files need standardizing as follows:

HLANDS1.dbf to HLANDS10.dbf & HLANDS13.dbf to HLANDSA16.dbf: cancel field 01 and change the width of field 03 from 1 (sometimes 5) to 2 digits to allow the inclusion of 2 digit province codes

HLANDS11.dbf & HLANDS12.dbf: cancel field 01; change the width of field 02 from 5 to 4; change the width of field 03 from 5 to 2 for both year & province code fields

HLANDS17.dbf to HLANDS25.dbf: change the width of field 01 from 5 to 4 (year)

HLANDS31.dbf: cancel field 03 (Provname)

HLANDS39.dbf: move field 03 to 02 (additional information to year field)

DB programmes

The programmes will also have to be modified.

As far as the existing files are concerned, the programmes for files HLANDS3, 4, 8, 12, 19, 21, 22, 31.dbf are slightly incorrect (lines missing) and need to be corrected. The programme for HLANDS41.dbf has not been written yet.

Update

The data available for the outstanding provinces will be entered on computer as soon as the above modifications have been made.

Originally, 5 province codes had been used: 1-5 for the 5 Highlands provinces. This needs modifying so that the standard province codes are used throughout.

The subprogramme setting relation between the province codes and the province names should be finalized to allow the name of the province and not the code to appear on the output format and save hard disk space.

Search options

In the display/print format, it would be interesting to include the possibility to calculate percentages, ratios and growth rates (over a period of 10 years).

In the extract/save option, it should be possible to combine up to 10 files selecting a common range of years and provinces to allow further processing in a worksheet environment.

I.1.2 Company Register

Current situation

The company register is nearly completed. The data available at present has been provided by NSO and a further NSO update is expected by the end of the year.

5711 records were imported from the NSO file. They are in the process of being transferred to our own register and reformatted to our own requirements: the group of companies included in the manufacturing sector, ie ISIC codes 300-399, has already been transferred (over 400 companies).

Database name

REGMF.dbf

Database structure

01 NSO CODE	N	6
02 EMPLOYEES	N	4
03 ESTAB-ENTE	C	32
04 LOCATION	C	60
05 ACTIVITY	C	30
06 PROVCODE	N	2
07 PROVNAME	C	10
08 INDCODE	N	3
09 INDTYPE	C	60
10 TOWNCODE	N	2
11 TOWNNAME	C	20
12 ENTERPRISE	C	32
13 ADDRESS	C	44
14 TELEPHONE	C	6
15 AER	C	1
16 SECTOR	N	1

Updating the database

Each record can be updated and new records can be added. The input screen format is based on the above-mentioned DB structure.

Search options

Companies can be retrieved by province and/or by industrial code and/or by town; the companies answering the search criteria can be either displayed on screen or printed out according to a pre-defined output format. A set of records can also be saved in order to be transferred to another system and further processed.

Proposed modifications

Sources of information

The information so far provided by NSO lacks a number of essential elements (ie: Company registration number, date of incorporation etc). Various sources of information are available and could be used by DTI without breaking the rules of confidentiality such as the Registrar's General Office, NIDA, Department of Labour & Employment. Meetings have been held between the consultant and NSO, NIDA & the Registrar respectively in order to coordinate the existing company registers and set the basis for future

cooperation. NSO has agreed in principle to provide regular updates on diskette of the information they have provided so far. NIDA and the Registrar have also agreed in principle to provide us with company data available in their own computerized or manual files, with the exception however of confidential data from the Registrar's General Office files.

It may be interesting at this stage to organize a formal meeting between DTI and NSO, NIDA and the Registrar, at managerial level, in presence of the UNV computer programmer and UNV statistician, to consolidate the verbal agreements reached so far and emphasize the need to establish a network of resources between various government organizations.

Database structure

In order to adapt NSO register to DTI needs and provide substantial company data, a new database structure has to be defined.

Several fields should be deleted or the content modified as follows:

01 NSO code, which is not the unique registration code allocated by the Registrar's General Office but NSO internal code, is to be replaced by the official company registration number

15 AER, Area code, is an NSO code which DTI does not need

16 SECTOR, sector code, same comment

More fields should be added:

Telex number

FAX number

Name of Director

Parent/Subsidiary company

Ownership

Date of incorporation

Company status

Capital

Exporter

Date indicating when company stopped operating

Date of latest update

All fields should be rearranged in a different order so that the format of the input screen corresponds to that of the input sheet as follows:

01 REGISTRATION NUMBER	N	12	
02 NUMBER OF EMPLOYEES	N	6	
03 COMPANY NAME	C	32	
04 ESTABLISHMENT NAME	C	32	
05 INDUSTRIAL CODE	N	4	Subprogramme
06 MAIN ACTIVITY	C	30	
07 LOCATION	C	30	
08 PROVINCE CODE	N	2	Subprogramme
09 TOWN CODE	N	2	
10 TELEPHONE	N	6	
11 TELEX	N	6	
12 FAX	N	6	
13 ENTERPRISE & CONTACT ADDRESS	C	32	
14 NAME OF DIRECTOR	C	12	
15 PARENT/SUBSIDIARY	C	1	
16 OWNERSHIP	C	20	
17 DATE OF INCORPORATION	N	2	
18 DATE STOPPED OPERATING	N	2	

19 COMPANY STATUS	C	2	
20 CAPITAL	N	9	
21 EXPORTER	L	1	Subprogramme
22 DATE LATEST UPDATE	D	8	

Input sheet

If we are to use several sources of information, it is important to standardize the data which is going to be entered on computer. Therefore, an input sheet should be filled in for each company prior to entering the data on computer. A sample data sheet is given in annex II.

Menus

Company register first menu: 5. to be changed from "Exit the system" to "Go back to master menu".

Option menu: refine presentation of menu

Industrial codes

So far, a 3 digit ISIC code has been used (which is in fact the PNG modified version, PNGSIC), as per the NSO file. In order to be more specific, a 4 digit code must be introduced. NSO is also planning to adopt a 4 digit code.

A subprogramme relating the codes to the code definitions will allow the code definitions to appear on the output format instead of the code. This would improve the immediate accessibility to the information. The addition of a PNGSIC subprogramme represents a large amount of work and memory capacity (about 301 000 bytes) and, if this cannot be done, the code manual will have to be referred to.

Indexed fields/Search options

The indexed file corresponds to the following indexation: Industrial code + Province code + Town code + Activity. In order to carry out a search on a company name as well as on the province and/or the town code and/or the activity, it is necessary to index the file on Industrial code + Province + Town code + Activity + Company name.

Output format

A search can be displayed on screen or printed out. So far one screen/output format allowing to list companies by province, by industrial code or by town is available. A second output format displaying all data related to one particular company called "Company datasheet" is to be prepared (see example in annex III).

File coverage

Only companies officially registered in Papua New Guinea, local or foreign, small or large, should be included in the DTI company register. By "officially registered", we mean companies registered at the Registrar's General Office, concentrating on industrial enterprises in particular.

However, we have to bear in mind the needs of the Small Business Development Service whose activities concentrate essentially on small businesses. It seems that some SMIs escape the general rule of official registration although they are supposed to register in Port Moresby via local Commercial Departments or private accountants. A close cooperation with SBDC will be required on this matter.

In order to satisfy the needs expressed by the Trade Division for a register of exporters, an extra field called "Exporter" will allow to integrate the planned register to the company register to avoid duplication

of data. Although this field would only indicate if the company is an exporter or not, we could investigate the possibility of having it chained to a subsidiary file giving further information on the volume/value of exports. The proposed subprogramme is defined in section I.1.9.

File update

The information which has been recorded up to date is incomplete and will need updating. The NSO register is far from being comprehensive although it would be beyond our scope to include the 12000 companies currently registered at the Registrar's Office (a number of which are however extinct at present).

To summarize, at the moment it is essential to concentrate on the completion of the work being currently carried out, ie. the transfer of NSO data and the addition of complementary data.

I.1.3 PNG imports/exports statistics

Current situation

Two databases, including one file per year, have been implemented:

- Imports statistics, 1981-82
- Exports statistics, 1981-87

The data has been provided by NSO on diskette.

DB file Names

EXPORT81.dbf - EXPORT87.dbf
IMPORT81.dbf - IMPORT82.dbf

Structure of the DBs

01	PORT	N	2	
02	SITC-CODE	N	6	
03	COUNTRY	C	4	
04	DSR	C	1	
05	QTOTAL	N	13	3 (decimals)
06	VTOTAL	N	12	2 (decimals)

DB Updating

Each record can be updated and new ones added. More files can be included on the basis of one file per year up to 1992. After this, the programme will need modifying.

Search options

Data can be retrieved selecting a range of years, commodity codes (using PNG International Trade Classification), port of entry/shipment, type of import/export (ie. D for Domestic, R for Re-export, X for Exempted) and/or a country.

The search can be displayed on screen or printed out.

Part of the files can be extracted and saved in order to be further processed.

Proposed modifications

Database structure

It was suggested that the following fields should be added:

Country group
Commodity group
Trade partners

Country groups could be retrieved via a subprogramme related to the "country" field, which would allow to search on preset groups of countries such as the EEC or the forum Island countries. An authority list of country groups, considered as PNG partners, will have to be drawn.

Groups of commodities can be searched using the first 3 digits of the SITC codes. However, this is only possible for value and not for quantity, due to the various units used for quantity.

The third item (partners) is already included (countries mainly).

Therefore, the original structure can be preserved as such with the sole addition of the above mentioned subprogrammes.

Codes

The lists of country codes & port codes, should be entered on computer in relation to a subprogramme giving the code definitions.

It would be useful to include a subprogramme to the "SITC-CODE" field relating the code numbers to the code definitions so that the code definitions appear on the output document. The comments concerning ISIC codes (point 1.1.2) apply also to SITC codes. The size of the subprogramme may be a problem and the SITC code manual may be sufficient.

Output format

In the column "Quantity", the unit ought to be mentioned for each specific item and in the column "Value" the unit ought to be specified (in Kina).

At the bottom of each report a footnote explaining the codes used for the type of import/export should appear.

Update

Import statistics cover only 1981-82. They have been provided by NSO. At this stage the following years are not yet available.

I.1.4 Feasibility Studies

Current situation

The feasibility studies DB is well on the way and nearly completed. Approximately 40 reports have been currently analyzed and the input sheets filled in, 30 of which have been entered on computer.

Database file name

PROJECTS.dbf

DB structure

01	NTCODE	N	3
02	DATEINPUT	D	8
03	PROJECT-ID	C	10
04	RESTRICT	C	1
05	TITLE	C	60
06	SITC	N	6

07	ISIC	N	4
08	PROVINCE	C	10
09	PROV	N	2
10	TOWN	C	15
11	OBJECT	C	60
12	YEARMAD	D	8
13	AGENCYSTUD	C	20
14	SPONDORCOM	C	25
15	CONSULTANT	C	25
16	AGENCYFUND	C	20
17	YEARSTART	D	8
18	CURRENCY	C	6
19	PSALESVAL	N	10
20	UNITMEAS	C	6
21	QUANTITY	C	40
22	CAP	N	10
23	FIXEDINVES	N	9
24	WORKINGCAP	N	9
25	MANPOWER	N	6
26	RECOMMEND	C	50
27	STATUDATE	D	8
28	STATUS	C	15
29	LOCDOC	C	15
30	RESPONSIB	C	15
31	CONTACT	C	15

Updating the database

Each record can be updated and new ones added.

Search options

Feasibility studies can be retrieved by province, industrial code or trade code, status (ie, small-scale, defined as less than K100,000 capital cost, large or all). The search can be displayed on screen or printed according to a standard format.

A second output format allows to display/print a detailed project profile.

A set of records can be retrieved and saved, by selecting a project funding agency, in order to be transferred into another system and further processed.

Proposed modifications

Input datasheets

The information registered in the input sheets should be checked before entering the data in computer; the codes (SITC, ISIC & Province) in particular and some sheets are incomplete.

ISIC/SITC codes

The two ISIC and SITC subprogrammes which may be created for the company register and the import/export DBs could be used here to set relation between the codes and the code definitions.

Updating the figures

Feasibility studies are often subject to revision and the figures initially entered become outdated. It is important to update dates and figures whenever a revision occurs.

Data security

This file is confidential and should not be accessible to everyone. The

field RESTRICTED/OPEN indicates whether the file is accessible or not to external users. A system of protection has to be included, such as a password to be able to enter the database. This will be very important when the system is networked. Data security is further developed in chapter III.

Search options

To retrieve and save a set of records, the selection criteria (funding agency) is not appropriate and should be replaced by either a selection of ISIC or province code(s).

I.1.5 Project profile system

Current situation

The implementation of a computerized Project Profile System is dictated by the need to promote small and large projects to both national and overseas investors (see report by D.Edwards entitled Project Promotion by DTI of 26 June 1988).

An integrated system, including the above feasibility study database, would allow to collect and disseminate data, using appropriate report formats, to both the industry division and to potential investors.

Therefore, a DB called Project Profile System (PROSYST.DBF) would enable DTI to:

- Keep a standardized record of all projects
- Update the data regularly
- Publish professional reports
- Preserve confidentiality where necessary
- Tie in with DTI IMF.

Implementation of the Database

DB name

As suggested earlier, the existing REPORT.DBF would be expanded to allow the publication of promotional reports and become PROSYST.DBF.

Output format

Three types of reports are required:

- A broad summary listing of project profiles (for publication)
- A more comprehensive list (for circulation to interested parties)
- Detailed project profiles (published at request to advise investors of complete picture)

Report 1

The basic information required is already available, although some more information is necessary such as:

- type of project (N: new project, R: rehabilitation project, E: expansion project)
- rating (potential for success): 1 - 5
- Documents available
- Reserved for national business: Y/N
- Remarks

The report would have the following headings:

- Project name
- Project description
- Type of project
- Rating
- Documents available
- Reserved for national business
- Remarks

Report 2

This already exists

Report 3

This is a much more comprehensive report with detailed information of each project profile. It consists in a 5 page report comprising the following sections:

- Project name
- Introduction
- Product and uses
- Market potential
- Plant capacity
- Process description
- Raw materials
- Machinery and equipment
- Personnel
- Land and building area
- Capital outlay
- General remarks

This type of report cannot be handled by DBase III Plus since each component of the report is half a page long or more. A word processing programme must be used (Wordstar).

One way of integrating Report 3 to the Project Profile System is to link the PROSYST.DBF database to the WP file. This can be done via an extra field where mention would be made of the existence/nonexistence of a detailed report in WP standard format. The programme would allow to call up an existing report or to create a new one following the standardized format.

Database structure

The above suggestions imply small changes in the DB structure, in particular the addition of the following fields:

TYPE OF PROJECT	C	1
RATING	N	1
DOC AVAILABLE	C	15
RESERVED NATIONAL BUSIN	L	1
DETAILED REPORT	L	1

Input data sheets

They will have to be modified accordingly.

Data protection

The previous comments on data protection apply here.

I.1.6 COMFAR

The COMFAR DB is a computer model for feasibility analysis and reporting and is managed by the report analysis section. This file does not really fit here and should be taken out of the IMS master menu.

I.1.7 General economics database

Current situation

The users' needs have been identified and the required information has been broken down into three major categories, ie:

- Group 1 Country
- Group 2 Economic activity
- Group 3 Others

Group 1 includes foreign investment in PNG by country; group 2 includes PNG economic activities per industry, sector, division; group 3 includes a number of PNG economic indicators.

The analysis of the way the information has been broken down indicates that all the groups include three categories of economic indicators: finance, goods and labour.

Therefore, it would be more logical to divide the data into the above categories in relation to PNG as a whole.

If we consider the data already included in other databases, we realize that groups 2 and 3 (goods and labour) are partly included in the Provincial DB, in particular:

- Labour/employment
- Education/training
- Population
- Transport
- Energy

-where a total PNG field allows the inclusion of national data to the provincial records- and in the imports/exports statistics database.

However, the data available in the provincial/imports-exports databases is not comprehensive and the considerable work done recently by the UNV statistician, ie. collection and processing of statistical data using Lotus 123, ought to be integrated to the IMS and constitute a general statistical DB. This includes the following data:

- . Economic statistics
- . Manufacturing statistics
- . Trade statistics
- . Commodity prices, domestic and international
- . Employment

A detailed description of the files is given in annex IV.

Implementation of the DB

The general economics DB would appear on the master menu. However, a switch would have to be made from DBase III to Lotus. A list of all files would then appear on the screen so that adequate choice of data is made. Further programming is required to fully implement the integration of this DB.

I.1.8 Clients database

Current situation

This database has not been implemented. It has been defined as a result of the users' needs analysis previously carried out. The structure of the DB has been basically worked out. So far, very little data has been available.

Implementation of the DB

DB definition

The clients database needs further definition and analysis by the Statistics/Information Department and computer specialist. A record of all information requests has to be kept in order to be analysed and processed.

Data collection

A comprehensive list of government institutions, diplomatic missions, trade and promotion organizations, trade fair authorities, small business associations, international organizations has to be drawn.

A record of all information requests made by the above institutions, as well as internal requests, will have to be kept over an initial period of 3 months. This should allow to supply sufficient data to start implementing the DB. A sample information request form is given in annex V. A long term record of information inquiries will allow to evaluate the quantity/quality of the information service.

Unless we actually collect the above mentioned data, it seems difficult to implement the database. The shortage of human resources could be a drawback, especially for continuous updating.

I.1.9 Register of exporters

Current situation

This register, requested by the Trade Division, has not yet been done. Little information is available at present, only a Directory of Producers and Exporters published by the Trade Division.

Implementation of the database

As mentioned earlier, an extra field added to the existing company register would avoid the duplication of data as most exporters are registered companies and will be included in the company register.

A subprogramme chained to this extra field would allow to expand on exporters activities including:

- SITC code
- Countries of export
- Type of export
- Volume of exports per year
- Value of exports per year

Data collection

The directory published by the Trade Division does not give any details of the type/volume/value of exports. This information has to be collected as yet.

A close cooperation with the Trade Division will be necessary to implement this DB.

I.2 Architecture of the IMS

The architecture of the IMS is reflected by the master menu. However, considering the proposed modifications, option 6 (COMFAR) is to be replaced by General economics database. A flow chart of the modified system has been designed by the computer programmer (see Annex VI).

II GUIDELINES TO DTI INFORMATION MANAGEMENT SYSTEM

This chapter is to be revised and completed by the UNV computer programmer when the system is fully implemented. Published separately with lists of codes in annex, it will constitute a document of reference for both users and system manager.

The guidelines include two parts:

- a users' guide
- a data input guide

II.1 Users' guide

II.1.1 Description of databases

- . list of databases from Master Menu
- . description of the content of each database, including list of files, to inform the users of the type of data they expect to find in the DBs, including time span.

II.1.2 Entering the system

Enter the system to have access to Master Menu (choice of option 4 for DBase III Plus); from the dot command .DO MENU, access the IMS Main Menu and select option 1-7:

- . 1 - Provincial Database
- . 2 - Register of companies
- . 3 - PNG exports statistics
- . 4 - PNG imports statistics
- . 5 - Projects and feasibility studies
- . 6 - General economics
- . 7 - Exit to master menu

II.1.3 Selecting 1: Provincial database

Menu 1: select option 1-5 to choose group of files corresponding to following topic or exit to Main Menu:

- . 1 - Infrastructure
- . 2 - Natural resources
- . 3 - Social resources
- . 4 - Economic resources
- . 5 - Back to Main Menu

List of files appears on screen with details of file name, description, availability and source.

Enter file name

Menu 2: select option 1-5 in order

- . 1 - To display the list of files
- . 2 - To update data records
- . 3 - To write a report
- . 4 - To extract/save part of the file
- . 5 - To exit to Main Menu

Display option

The display option allows to specify search criteria and to display selected data: select a year/range of years/non consecutive years from the range of years available for the file you are searching:

Eg: 82-84

85

82,84

If you do not specify year, the whole range of years available will be searched.

Enter the province code(s) or group of province codes or total PNG code (see standard list) you wish to search on:

Eg: 01

01-05

01,10

If you do not specify province(s), the whole range of provinces available will be searched.

At this point, you have to confirm whether you wish to go ahead with the search or modify the search criteria.

As a result of the search, the file will be searched sequentially and the relevant data displayed on screen. You may then either display further data selecting further year(s)/province code(s) and range of files and proceed as previously or end the search and go back to menu 1.

Print option

After selecting a group of files from menu 1, select option 3 from menu 2. Select a year or range of years, a province or range of provinces, make corrections if necessary and carry out print for which wide format paper is required.

Extract/save part of a file option

After selecting a group of files from menu 1, select option 4 from menu 2. Select a year or range of years, a province or range of provinces, make corrections if necessary and save file either on diskette or hard disk, specifying the new file name and drive, plus directory for drive C.

II.1.4 Selecting 2: Company register

Menu 1: select option 1-5 in order

- . 1 - To display the list of companies
- . 2 - To update the data records
- . 3 - To write a report
- . 4 - To extract/save the file
- . 5 - To exit to Main Menu

Display option

Select option 1 from menu 1. The display option allows you to specify search criteria and display result of search, selecting industrial code (4

digit PNGSIC codes), activity (using "free" text vocabulary - as opposed to "controlled" vocabulary - although the search words have to comply with the entry), province code, town code (refer to standard list of province/town codes) or company name.

The file is searched sequentially and one record is displayed at a time until the end of the file. At the end of the display, you go back to menu 1

Print option

Select option 3 from menu 1. Two print formats are available:

- . a list of selected companies selected by industrial code, province or town (wide format paper is required)
- . a company datasheet

Extract/save option

Select option 4 from menu 1. Part of the file can be extracted and saved by selecting a province code. Enter destination file name (specifying drive number and directory for drive C).

II.1.5 Selecting 3 or 4: PNG imports/exports statistics

Both databases have been designed similarly.

Display option

Select option 1 from menu 1 (identical to menu 1 of Company Register).

Data can be retrieved selecting a year, a range of years or non-consecutive years from range available, commodity code (using PNG International Trade Classification), port of entry/shipment (using list of standard codes), type of import/export (D for domestic, R for re-export, X for exempted) or country of destination (using list of country abbreviations).

You may wish to correct search criteria or display search.

Print option

Following the same procedure as that previously used for display, you may wish to print the search by selecting option 3 from menu 1. Wide format paper is required.

Extract/save option

Select option 4 from menu 1. Same procedure as previously.

II.1.6 Selecting 5: Feasibility studies

Menu 1 gives the following options:

- . 1 - To display the list of feasibility studies
- . 2 - To update the data records
- . 3 - To append the records
- . 4 - To write a report
- . 5 - To extract/save the file
- . 6 - To exit to main menu

Select option 1 from menu 1.

The choice of a standard format or special format is then available:

. standard format is obtained by replying "No" to question "Do you want a special format?": 1 record is displayed at a time, specifying record number

. special format is obtained by replying "Yes" to above question. The selection criteria are:

- select range of capital investment (S for small-scale, L for large scale above K 100 000, and A for all)
- select province code(s). or range of province codes
- select ISIC code(s) (PNGSIC, 3 digits) or range of codes

The 3 criteria must be combined to obtain results.

Print option

You may wish to print a standard or a special report by selecting option 3 from menu 1. The same procedure as above (display option) is to be followed.

Extract/save option

Select option 4 from menu 1.

Enter ISIC code or province code (to be determined). Enter destination file name and drive specification.

II.1.7 Selecting 6: General economics database

This database has to be integrated to the system and details are not yet available.

II.2 Data input guide

The aim of the data input guide is to standardize data entries when updating the databases.

II.2.1 Provincial database

Selecting option 1-4 from menu 1 and then option 2 from menu 2 allows to amend an existing record or to add a new one. Select a year or range of years followed by a province code or range of province codes. The selected records are displayed on screen and you may proceed with corrections. New records can be added until you decide not to proceed with update.

Data input

PDATA1.DBF

Value of retail sales, other retail sales, total sales

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	code of province or total PNG
3	RETSALGDS	N	8	retail sales of goods (unit:K)
4	RETSALOTH	N	8	other retail sales
5	TOTRETSAL	N	8	total retail sales

PDATA2.DBF

Coffee large/small holdings, production, areas, tea production, employees, labour cost

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code
3	COFLHOLD	N	8	coffee large holdings
4	COFAREA	N	8	coffee area under crop (ha)
5	COFTOTAL	N	8	coffee small & large holdings
6	COFLPROD	N	8	coffee large holds produc (t)
7	COFSPROD	N	8	coffee small holds produc
8	EMPLOYL	N	8	no employees large holdings
9	LABCOSTL	N	8	labour cost large holdings

PDATA3.DBF

Cocoa production

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code
3	COCLHOLD	N	8	cocoa large holdings
4	COCOAREA	N	8	cocoa area under crop (ha)
5	COCTOTAL	N	8	cocoa large & small holdings
6	COCLPROD	N	8	cocoa large holds produc (t)
7	COCSPROP	N	8	cocoa small holds produc
8	EMPLOYL	N	8	employees large holdings
9	LABCOSTL	N	8	labour cost large holdings

PDATA4.DBF

Copra production

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code
3	COPHOLD	N	8	copra large holdings
4	COPAREA	N	8	area under crop (ha)
5	COPTOTAL	N	8	copra small & large holdings
6	COPLPROD	N	8	copra large holds produc (t)
7	COPSPROD	N	8	copra small holds production
8	EMPLOYL	N	8	employees large holdings
9	LABCOSTL	N	8	labour cost large holdings

PDATA5.DBF

Tea production

Field no	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code
3	TEALHOLD	N	8	tea large holdings
4	TEAAREA	N	8	tea area under crop (ha)
5	TEATOTAL	N	8	tea large & small holdings
6	TEALPROD	N	8	tea large holdings produc (t)
7	TEASPROD	N	8	tea small holdings production
8	CATTLEL	N	8	cattle large holdings

PDATA6.DBF

Rubber production

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code
3	RUBLHOLD	N	8	rubber large holdings
4	RUBAREA	N	8	area under crop (ha)
5	RUBTOTAL	N	8	rubber small & large holds
6	RUBLPROD	N	8	rubber large holds prod (t)
7	RUBSPROD	N	8	rubber small holds prod

PDATA7.DBF

Manufacturing establishments and workshops, manufacturing output & employees

Field no	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code
3	ACT31	N	4	food & tobacco
4	ACT32	N	4	textile & leather
5	ACT33	N	4	wood products
6	ACT34	N	4	paper products
7	ACT35	N	4	chemicals & petroleum
8	ACT36	N	4	non-metallic
9	ACT37	N	4	basic metal
10	ACT38	N	4	fabricated metal
11	ACT39	N	4	other manufacturing

12	ACT99	N	4	manufacturing industries
13	WORK	N	4	factories & workshops
14	ALLIND	N	4	all industries
15	OUTPUT	N	8	manufacturing output
16	POWER	N	8	power
17	REPAIRS	N	8	total repairs cost (in K)
18	PACKING	N	8	cost packing
19	MATERIALS	N	8	total material cost
20	PRODUCTION	N	8	total production
21	LANDBLDG	N	8	land & buildings
22	PLANTMAC	N	8	plant & machinery
23	EMPT	N	8	total manufacturing employees
24	EMPM	N	8	male employment
25	EMPF	N	8	female employment
26	EMPWP	N	8	working proprietors
27	EMPMANG	N	8	managerial staff
28	EMPFAC	N	8	factory workers
29	SALARIES	N	8	salaries

PDATA20.DBF

PNG road network & number of registered vehicles

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code
3	NATSEAL	N	8 2 dec	roads: national sealed
4	NATGRAV	N	8 2 dec	roads: national gravel
5	NATTOT	N	8 2 dec	roads: national total
6	PROVSEAL	N	8 2 dec	roads: provincial sealed
7	PROVGRAV	N	8 2 dec	roads: provincial gravel
8	PROVTOT	N	8 2 dec	roads: provincial total

PDATA21.DBF

Aerodromes & air transport statistics

Field No	field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code
3	RESTAERO	N	4	restricted aerodromes
4	GOVTAERO	N	4	government aerodromes
5	COMAEROX	N	4	commercial aerodromes class X
6	COMAEROY	N	4	commercial aerodromes class Y
7	COMAEROZ	N	4	commercial aerodromes class Z
8	ALLTOT	N	4	total number of aerodromes
9	AIRMOVET	N	6	aircraft movement
10	PASSIN	N	6	number of passengers in
11	PASSOUT	N	6	number of passengers out
12	FRETIN	N	7	freight in (kgs)
13	FRETOUT	N	7	freight out (kgs)
14	MAILIN	N	7	mail in (kgs)
15	MAILOUT	N	7	mail out (kgs)

PDATA22.DBF

Post office statistics

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	4 digit date
2	PROV	N	2	province code

3	LOFFICIAL	N	4	average post boxes let out by official post offices
4	LAGENCY	N	4	let out by agency post offices
5	LTOTAL	N	4	total no of post boxes let out
6	VOFFICIAL	N	4	post boxes vacant by official post offices
7	VAGENCY	N	4	vacant by agency post offices
8	VTOTAL	N	4	total no of vacant post boxes
9	POSTED	N	7	total postal articles posted
10	DELIVERED	N	7	delivered
11	TOTAL1	N	7	total number of articles
12	POFFICES	N	4	official post offices
13	AGENCIES	N	4	agencies post offices
14	TOTAL2	N	4	total no of post offices

PDATA23.DBF

Telephone & teleccmmunications statistics

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	date
2	PROV	N	2	province code
3	NATIONSB	N	4	no of national subscribers
4	CONNECT	N	6	no of lines connected
5	INSTRUMT	N	6	no of instruments connected

PDATA24.DBF

Electricity tariffs, consumption & sales

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	date
2	PROV	N	2	province code
3	ADDIT	N	15	addit info to field 1 (month)
4	DFIRST10	N	5 1 dec	electricity tariff: domestic, first 10 KWH
5	DFIRST50	N	5 1 dec	domestic, first 50 KWH
6	DFIRST100	N	5 1 dec	domestic, first 100 KWH
7	DNEXT30	N	5 1 dec	domestic, next 30 KWH
8	DNEXT100	N	5 1 dec	domestic, next 100 KWH
9	DMIN	N	5 1 dec	domestic, minimum balance charge (KWH)
10	GFIRST50	N	5 1 dec	general supply, first 50 KWH
11	GFIRST100	N	5 1 dec	general supply, first 100 KWH
12	GNEXT200	N	5 1 dec	general supply, next 200 KWH
13	GNEXT400	N	5 1 dec	general supply, next 400 KWH
14	GNEXT4000	N	5 1 dec	general supply, next 4000 KWH
15	GMIN	N	5 1 dec	general supply, minimum balance charge
16	IEC	N	5 1 dec	industrial, energy charge
17	IDC	N	5 1 dec	industrial, demand charge (K per KWH)
18	IMC	N	7 1 dec	industrial, minimum charge (K)
19	CDOMEST	N	5	electricity consumption: domestic consumers
20	CGENERAL	N	7 2 dec	general supply consumers
21	CINDUST	N	5 1 dec	industrial consumers
22	SDOMEST	N	6	electricity sales: domestic
23	SGENERAL	N	6	general sales
24	SINDUST	N	6	industrial sales
25	ADOMEST	N	5 2 dec	domestic average

26	AGENERAL	N	5 2 dec	general average
27	AINDUST	N	7 2 dec	industrial average
28	STLIGHT	N	5	street lighting
29	MAXDEMD	N	5 2 dec	maximum demand
30	ATOTAL	N	5	load factor

PDATA25.DBF

Building statistics

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	date
2	PROV	N	2	province code
3	HOUFLACOMM	N	8	no of houses & flats commenced
4	HOUFLACOMP	N	8	completed
5	HOFLUNDCON	N	8	under construction
6	VHOFLCOMM	N	8	value of new houses & flats commenced
7	VHOFLCOMP	N	8	completed
8	VHOFLUNCON	N	8	under construction
9	VOTHERCOMM	N	8	value of other buildings commenced
10	VOTHERCOMP	N	8	completed
11	VOTHUNCON	N	8	under construction

PDATA40.DBF

Citizen population

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	date
2	PROV	N	2	province code
3	MAG0-14	N	7	male age 0-14
4	MAG15-44	N	7	male age 15-44
5	MAG45-64	N	7	male age 45-64
6	MABOVE-65	N	7	male age above 65
7	FAG0-14	N	7	female age 0-14
8	FAG15-44	N	7	female age 15-44
9	FAG45-64	N	7	female age 45-64
10	FABOVE-65	N	7	female age above 65
11	CTZPOPULAT	N	8	citizen population

PDATA41.DBF

Number of schools, staffing & enrolments

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	date
2	PROV	N	2	province code
3	P-STAFF	N	6	staffing in primary schools
4	H-STAFF	N	6	staffing in high schools
5	V-STAFF	N	6	staffing in vocational schools
6	T-STAFF	N	6	staffing in technical colleges
7	TE-STAFF	N	6	staffing in teachers train. colleges
8	U-STAFF	N	6	staffing in universities
9	P-ENROL	N	7	enrolments in primary schools
10	H-ENROL	N	7	enrolments in high schools
11	V-ENROL	N	7	enrolments in vocational schools
12	T-ENROL	N	7	enrolments in tech. colleges
13	TE-ENROL	N	7	enrolments in teachers train.

14	U-ENROL	N	7	enrolments in universities
15	P-NOS	N	4	number of primary schools
16	H-NOS	N	4	number of high schools
17	V-NOS	N	4	number of vocational schools
18	T-NOS	N	4	number of technical colleges
19	TE-NOS	N	4	number of teachers train coll
20	U-NOS	N	4	number of universities
21	GRADT-NOS	N	4	number of graduates

PDATA60.DBF

Mean temperatures in PNG in c (not available by year)

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	date
2	PROV	N	2	province code
3	PRONAME	C	10	province name
4	JANMAX	C	5	maximum mean temp January (c)
5	JULMAX	C	5	maximum temp July
6	JANMIN	C	5	minimum temp January
7	JULMIN	C	5	minimum temp July
8	ANNUAL	C	5	annual mean temperature

PDATA61.DBF

Rainfall in PNG (inches)

Field No	Field name	Type	Width	Field description
1	YEARS	N	4	date
2	PROV	N	2	province code
3	AVERAGE	N	7 1 dec	average rainfall
4	HIGHEST	N	7 1 dec	maximum rainfall
5	LOWEST	N	7 1 dec	minimum rainfall

II.2.2 Company Register

Prior to entering data on computer, an input data sheet is to be filled in for each company to facilitate and standardize data entry.

Select option 2 of menu 1 to update existing records. State record number. To add new records, use APPEND command from dot prompt (pressing ESCAPE key to escape from menu).

Field description (see input sheet):

Field No	Field name	Type	Width	Field description
1	REGNUMB	N	12	registration number (number of Registrar's General Office)
2	EMPLOYEES	N	6	number of employees
3	ENTERPRISE	C	32	legal company name as registered (name first + initials)
4	ESTAB-ENTE	C	32	trade name of establish (can be different from company name)
5	INDCODE	N	4	PNGSIC 4 digit code
6	ACTIVITY	C	30	specific activity, free text
7	LOCATION	C	30	registered office address
8	PROVCODE	N	2	province code
9	TOWNCODE	N	2	town code
10	TELEPHONE	N	6	telephone number
11	TELEX	N	6	telex number

12	FAX	N	6	fax number
13	CONTACTADD	C	32	contact address
14	DIRNAME	C	12	director name (family name followed by christian name)
15	PARSUBS	C	1	P for parent S for subsidiary
16	OWNERS	C	20	if subsidiary company name & country of parent company
17	DATEINC	N	2	date of incorporation(2 digit)
18	DATESTOP	N	2	date company stopped operating when appropriate
19	COMPSTAT	C	2	company status: PR for private PU for public, FO for foreign
20	CAPITAL	N	9	nominal capital in Kina
21	EXPORTER	L	1	Y or N, if Y can have access to subprogramme
22	DATEUPDATE	D	8	mm/dd/yy

II.2.3 Imports/exports statistics

The imports/exports databases have been designed identically. They include 1 file per year. Existing records can be updated by selecting option 2 of menu 1. Specify date, port/country and/or commodity/country.

New records will be imported from the NSO file.

Field description:

Field No	Field name	Type	Width	Field description
1	PORT	N	2	port code
2	SITC-CODE	N	6	6
3	COUNTRY	C	4	4 digit abbreviation (see standard list)
4	DSR	C	1	type of export: D for domestic R for reexport, X for exempted
5	QTOTAL	N	13 3 dec	quantity total
6	VTOTAL	N	12 2 dec	volume total

II.2.4 Feasibility studies

To modify existing records, select option 2 of menu 1 and select record number. Each record includes 4 pages. At the end of page 4, you can either modify another record or go back to menu 1.

To add new records, select option 3 of menu 1 and follow the same procedure.

Field description (see input sheet):

Field No	Field name	Type	Width	Field description
1	NTCODE	N	3	internal code
2	DATEINPUT	D	8	date of input
3	PROJECT-ID	C	10	project identification number used by Finance & Plann Depart
4	RESTRICT	C	1	R for restricted, O for open
5	TITLE	C	60	project title
6	SITC	N	6	SITC code to be assigned to item produced
7	ISIC	N	4	ISIC code
8	PROVINCE	C	10	province name

9	PROV	N	2	province code
10	TOWN	C	15	town name
11	OBJECT	C	50	brief description of project or feasibility study
12	YEARMADE	D	8	date of feasibility study
13	AGENCYSTUD	C	20	agency funding the study
14	SPONDORCOM	C	25	local company sponsor name
15	CONSULTANT	C	25	consultant in charge of study
16	AGENCYFUND	C	20	agency funding project
17	YEARSTART	D	8	start date of project
18	CURRENCY	C	6	estimated sales at full production: currency
19	PSALESVAL	N	10	" : value
20	UNITMEAS	C	6	" : unit of measure
21	QUANTITY	C	40	" : quantity
22	CAP	N	10	capital cost
23	FIXEDINVEST	N	9	fixed capital investment
24	WORKINGCAP	N	9	working capital investment
25	MANPOWER	N	6	manpower at full production
26	RECOMMEND	C	50	study recommendations
27	STATUDATE	D	8	date of project status
28	STATUS	C	15	project status
29	LOCDOC	C	15	location of document
30	RESPONSIB	C	15	institution/department/branch responsible for project
31	CONTACT	C	15	contact name

II.2.5 General economics database

To be determined.

III COMPUTER CONTROL AND DATA SECURITY

Hardware and software protection are inherent to any computerized system. Information stored on disk is easily copied, altered and erased: the corruptibility and vulnerability of the data dictate the need for some system controls. They comprise:

- . Administrative controls
- . System development controls
- . Processing controls

III.1 Administrative controls

III.1.1 Hardware and software inventory

A complete inventory of all equipment and software, including specifications, date of purchase, name of supplier, details of guarantee, maintenance and insurance contracts, has to be kept and updated regularly. A DBase III file, named INVENTORY.DBF has been set up to this effect.

III.1.2 Physical security

This is a system of protection for the hardware as well as for the software (application programmes, data files, system software including utilities). It includes:

- . access restrictions on computer room
- . hardware protection such as locks on computers and insurance
- . environmental controls (fire detection facilities, temperature and ventilation controls, dust, water, radiation, food spillage)
- . authorization for access to application programmes and files
- . no authority to alter system software
- . control over general software usage

The safeguard of computer site is important: locking computer room every evening, turning off the computer lock if any (there is one on the IBM AT), locking floppy disks and back-up copies in safe cupboard will discourage theft and vandalism. This applies particularly to open plan offices.

Backup facilities

They are provided for both data files and programs to ensure that:

- . data files can be reconstructed in the event of master loss or corruption (fire, theft or accidental loss such as head crashing onto hard disk or accidental deletion of file)
- . application and system software can be reinstated in the event of loss or corruption

These objectives are achieved by keeping copies of data files and programmes in a safe place, away from heat, light and radiations, in such a way that they can be reconstructed if necessary, magnetic tapes being the easiest way of doing this. However, the condition of the tape has to be checked now and then. The integrity of the data being copied should also be checked by including edit logic in the file dump software.

The backup procedure is especially critical for hard disk systems, due to the large amount of files and must be a regular routine, for example each morning for changed files and each week for the whole system.

There are several ways of backing-up files:

- . DOS back-up methods
- . Commercial back-up programmes

DOS back-up methods

DOS COPY COMMAND is not really adequate for hard disk back-ups as it works with only one directory at a time.

DOS BACKUP and RESTORE programs allow users to select or by-pass sub-directories of the current directory, copy all files or only modified ones and select for backup only files changed since a specific date. To recover the files, one can use a series of batch files to automate the backup and recovery procedures provided by the DOS commands.

Commercial backup programmes

Several commercial packages are available and 4 of them are described in details in annex VII. Not only do they facilitate the back-up and restore procedures but they allow to select a file or group of files by type and eventually by date.

Any of these packages can be recommended for DTI IMS, with a preference however for BACK-IT which allows the choice of files created between a pair of given dates.

Stand-by facility

Consideration should be given of alternate facility in case of extended breakdown of computer/printer equipment.

File control and online security

File control is to ensure limited access to the files and to avoid eventual accidental deletion. Files can be labeled internally/externally so that unauthorized persons cannot have access to the files. They can also be write protected: they become read-only files. MSDOS ATTRIB program allows such conversion. A system of passwords would restrict access to confidential files. This will be particularly critical when the computers are networked.

Control over personnel

Control over personnel serves two purposes: control of the computer system as well as planning the use of computers and peripherals. This includes:

- . defining personal duties, responsibilities and access restrictions
- . scheduling the use of computers
- . logging all transactions with indication of time and personnel identification

A weekly timesheet, to be displayed in the computer area at the beginning of the week, is proposed in annex VIII. One timesheet per computer would

allow to plan the use of the computer and to check its level of use. This would allow to verify that all (authorized) officers have had access to the computer as required and determine whether some equipment is overused or underused.

III.2 System development controls

Control over the development process of the system includes:

- . Documentation
- . Project management
- . Testing

Documentation

Controls over the documentation (guidelines to IMS and manuals) aims at providing a secure record of the system design, programming and maintenance activities as well as user procedures and recovery procedures. Access to the documentation must be controlled. One of the major problems is to maintain the accuracy of the documentation as the system is modified over the years.

Project management

The system will develop over the years in line with the users' needs and such development must be carefully controlled.

Testing

When the system is finalized and after any modification which may occur, tests should be carried out to minimize system faults.

III.3 Processing controls

Processing controls ensure the completeness, accuracy and authorization of the data processed. They include input controls, programmed controls (in order to detect by logic means any form of errors), output controls (verification of relationship between input and output) and file controls (to check file integrity).

IV PROPOSED DEVELOPMENT OF THE INFORMATION DIVISION

IV.1 Current situation

IV.1.1 Functioning of the Division

The Information Division includes a Statistics Branch and an Information Branch.

The Statistics Branch is responsible for collecting, analyzing and processing primary and secondary statistical data relevant to DTI activities, in particular research undertaken by the Trade & Industry Policy Branch; liaising with public and private bodies, both domestic and overseas, to maximize the variety of data sources; compiling and packaging data for the publication of statistical briefs and industry reviews; responding to daily requests and correspondence requiring statistical information.

The Information Branch is responsible for setting up a computerized IMS, including training of DTI staff, and for the library including publications.

IV.1.2 Human resources

The Statistics Branch includes 1 UNV statistician who will leave in April 1989 and will then be replaced by a national statistician, who is at present on a course abroad.

The Information Branch includes a UNV computer programmer (who will leave in June 1990) and a national acting publications officer.

IV.2 Proposed development

The Statistics Branch is to be distinct from the Information Branch and both functions clearly defined.

IV.2.1 Statistics Branch

The tasks defined above in paragraph IV.1.1 certainly fulfill the needs of the Department with regards to the management of statistics. However, part of the duties which should be carried out in the future by the Information Branch, in particular the dissemination of information to inquirers and follow up and analysis of such inquiries, have been so far handled by the UNV statistician.

There are three major areas where the Statistics Branch and the Information Branch are expected to work closely together:

- . identification and assessment of sources of information
- . collection of data
- . publications

The statistics Branch is expected to feed data to the Information Branch

(processed on computer or manually) to allow the Information Branch to update and maintain the Information Management System. The publication of statistical briefs and of any statistical material may require some publications skills, in particular with the introduction of desktop publishing software and hardware in the division: a close cooperation is required between the two branches to produce in-house high quality publications.

IV.2.2 Information Branch

DTI Information Management System will be fully operational in the course of 1989. Computer training is scheduled over a period of 6 months and, by June 1989, DTI staff will be fairly skilled in the use of computers.

In order to be exploited fully, DTI IMS needs to be coordinated and managed with efficiency. To achieve this, a structured Information Service which includes the library should be further developed.

Role of the Information Service

The role of the Information Branch, or rather Information Service which is a more appropriate name for it, is to respond to the Department's needs for information and therefore to provide, in due time, accurate up-to-date and retrospective (or historic) trade and industrial data to DTI officers. Identification of sources of information, processing, retrieval and dissemination of information using internal and external sources of information would be the major activities of the information service. Internal sources would consist mainly in DTI IMS and the library. External sources would be national and international. The publication of standard and tailor-made reports as well as any material required by DTI would be the responsibility of the library.

Management of internal resources

DTI Information Management System

The Information Service should supervise and coordinate all activities related to DTI Information Management System and advise the Department on any computer related activities.

IMS update and development

DTI information Management System has been set up in response to the needs of DTI officers. However, the information which has been processed so far will require regular updating and the system will have to be maintained and developed over the years. This will be the responsibility of the Information Service.

Maintenance of hardware

The good functioning of all computers and peripherals should be a permanent care. Maintenance contracts with suppliers must be renewed on a regular basis. Standby facilities should not be used on a permanent basis but only as temporary replacement. The computerised inventory of equipment is to be updated when need be.

Computer control and data security

All aspects of computer control and data security, detailed in chapter

III, come under the responsibility of the Information Service.

Computer advisory role

The Information Service is expected to assist and advise DTI staff on matters related to computers, including the use of software and hardware, as well as identification of further computer training needs and coordination of computer training with training officer.

Consideration should be given to the social/human aspect of the computerization of the department. Therefore in continuation with the work carried out by the computer committee, the Information Service ought to organize and animate computer users' groups, according to the areas of interest of the officers, which would meet on a regular basis to discuss the problems encountered in the use of software and hardware.

A further step would be for the users' groups to link up with other PNG computer users' groups and professional associations, if any.

Library management and automation

The library is to be part of the information service. The role of the library is to provide in-house data to the Department: the daily running of the library -ie. acquisition, classification, cataloguing and indexing of documents, management of loans, acquisition and management of periodicals including circulation - includes also the preparation of literature searches, bibliographies and catalogues and the attendance to reference inquiries.

Library automation, using appropriate software, would ease off the running of the library as described above. Annex VII gives details of library management software packages.

Desktop publishing will enhance the quality of DTI publications.

Management of external sources of information

Sources of information at the regional and national level should be identified and used in order to create a network between DTI and various private and public institutions.

Communications technologies, such as telephone, telex, FAX, modem communications, are efficient ways of communicating with the outside world. Consideration should be given to the use of on-line databases, as well as microfiches and CD ROM, provided by international institutions (such as UN, GATT/UNCTAD, ILO, ACP/EEC institutions, OECD) and by private information vendors (such as DIALOG). A communications software package is described in annex VII. Such technologies could be introduced when the Information Division is well established and fully operational.

Dissemination of information to DTI divisions

Replying to requests for information are the responsibility of the Information Service. A close cooperation with the Statistics Branch and with the library will also be vital to provide a complete and satisfactory service to information inquirers and to make full use of all resources available.

Dissemination of information in appropriate format

Adequate up-to-date and retrospective information is to be supplied to the inquirers in due time and in an adequate format. Word processing and publishing techniques, as well as downloading and uploading, should allow to select the information required and disseminate tailor-made reports answering the needs for information.

Management of information inquiries

A record of all inquiries is to be kept (see proposed form in annex V) by the Information Service in order to be analyzed periodically, say every six months. This would allow not only to evaluate the volume of information and time dedicated to its dissemination but, above all, to enhance the quality of the service and identify the areas of weakness of the information provided. This would also allow to implement the Clients database.

Communications with provincial offices and PNG trade missions overseas

DTI Information Service is to work in cooperation with the future PSBAs and with PNG trade missions overseas. Communications via modem and FAX should facilitate exchanges between them.

IV.2.3 Human resources

A proposed organigramme, based on duty statements defined by the Department of Personnel Management, is given in annex IX.

In the original plan, a librarian grade 2 is proposed. In fact, the librarian should be a well qualified person with a university background (2 years librarianship course at UPNG) and be recruited at the same level as the publications officer, ie. cc 8 (eventually cc7, according to experience).

An Assistant Publications Officer, cc 5, is proposed in the original organigramme. In fact, a Publications Officer full time should be sufficient. On the other hand, some contribution to publications, in connection with statistical publications, could be made by the Statistician Research Officer and both, Publications Officer and Statistics Research Officer, should be trained to the use of desktop publishing technologies.

One position is missing in the original organigramme: that of the Computer Operator. Updating the IMS, doing routine jobs such as maintenance of back-ups, will be a permanent task and a Computer Operator (cc 7) will be necessary. In fact, the position originally planned for an Assistant Publications Officer should be fulfilled by a Computer Operator.

V COMPUTER TRAINING

A comprehensive computer training programme for DTI staff has been proposed for 1989. The training programme is aimed at giving DTI staff some basic knowledge of the hardware and software they will be using, for both IBM and Macintosh environments, taking into account division priorities and the officers' requirements. All divisions will be using IBM compatibles except one, Business Development, who will be using Macintosh computers.

A Computer Committee was set up by the consultant, with representatives from all divisions, to discuss computer training (as well as all aspects of office automation and computer control).

Prior to organizing the training scheme, a survey of the officers' background was carried out in order to determine their level and requirements. A sample questionnaire form and a brief analysis of requirements is given in annex X.

The course includes:

- . basic computer operation
- . basic and advanced word processing
- . basic and advanced spreadsheets
- . data base management
- . graphics
- . desktop publishing
- . introduction to networks/modem communication/facsimile/file transfer

The programme comprises three phases:

- . initial phase free of charge
- . training programme (February-March/November-December 1989)
- . training of officers operating in the provinces in the frame of the small business development programme

V.1 Initial phase

As a result of the purchase of 9 computers from OMEGA CONSULTANTS, 8 days training free of charge are supplied by the supplier, starting 18 January. The programme is detailed in annex XI. It includes an introduction to computer basic operation, basic word processing using Wordstar and basic spreadsheets using Lotus 1,2,3. One more day will be dedicated to practical applications at a later date.

This initial phase is considered as a trial period for OMEGA with regards to the second phase for which they have made an offer. Trainees will be able to evaluate the course via an evaluation form which will be distributed at the end of the course. It will also be a trial period for the trainees and a good opportunity to study their reactions to the course.

V.2 Training programme scheduled in February-March and November-December 1989

Two PNG computer training specialists, based in Port Moresby, OMEGA CONSULTANTS and REMINGTON, have been approached to submit a proposal based on DTI training programme for 1989 given in annex XII. An analysis of both offers is given in annex XIII.

V.3 Training of officers based in the provinces

The computer training programme of 8 Business Development Officers operating in the provinces, which comprises information management and networking including the operation of selected basic computer systems based on Macintosh applications, will take place in two phases: an initial phase of formal training, carried out either on DTI premises or in the provinces, followed by an informal in-service training during which the trainer will be asked to travel from one province to another in order to assist each BDO in his office for two days. Details of the training requirements is given in annex XIV.

Three computer training institutions have been approached:

- . CHIMBU HOLDING ENTERPRISES PTY LTD, Kundiawa
- . BEST, Madang
- . WAWA SECRETARIAL & TRAINING SERVICES, Port Moresby

Chimbu Holding Enterprises seem to have both trainers and accommodation for the trainees. They have been contacted via the Secretary of the Department of Chimbu.

More details are expected from BEST.

Mrs Aiva Kuwoh, from Wawa Secretarial & Training Services has a good knowledge of Macintosh software and training experience and could do the training on DTI premises. Accommodation could then be supplied by the Administrative College whose Principal has been approached formally.

Some accommodation and training facilities in the provinces have been identified (see annex XIV).

V.4 Training of UNVs

As part of the general training programme, the UNV computer programmer will attend the advanced EXCEL course, desktop publishing and network management courses. The UNV statistician will attend the advanced WORDSTAR and DBASE III courses.

V.5 Computer files associated with computer training

Details of the files set up in connection with computer training are given in annex XV.

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PROVINCES IN PAPUA NEW GUINEA

PROVINCE	DISTRICT	TOWN (CD)
WESTERN 1	1 Daru	82 Daru
	2 Morehead	80 Balimo
	3 Balimo	81 Kiunga
	4 L/Murray	
	5 Kiunga	
GULF 2	1 Kikori	82 Kikori
	2 Baimuru	80 Baimuru
	3 Ihu	81 Kerema
	4 Kerema	83 Malalaua
	5 Kaintiba	
	6 Malalaua	
CENTRAL 3	1 Aoua	1 Amazon Bay
	2 Rigo	2 M/Lagoon
	3 Hiri	24 Kupiano
	4 Kairuku	81 Kwikila
	5 Giilala	83 Sogeri 82 Bereina 80 Tapini
N.C.D. 4	1 NCD	80 Gerehu 81 Waigani/Uni 82 Tokarara/Hobola 83 Gordon/Saraga 84 Boroko/Korobosea 85 Kilakila/Kaugere 86 Koki/Town/E.Bada 87 Laloki 88 Bomana
MILNE BAY 5	1 Rabaraba	34 Alotau
	2 Alotau	94 Losuia
	3 Samarai	52 Samarai
	4 Esa'ala	83 Bwagoia
	5 Losuia	
	6 Misima	
NORTHERN 6	1 Kokoda	80 Popondetta
	2 Popondetta	
	3 Tufi	
S.H.P. 7	1 Koroba	80 Tari
	2 Tari	81 Mendi
	3 Nipa	
	4 Mendi	
	5 Kagua	
	6 Pangia-	
	7 Talibu	

PROVINCE	DISTRICT	TOWN (CD)
ENGA 8	1 Lagaip 2 Wabag 3 Wapenamanda 4 Kandep	81 Laiagam 80 Wabag
WHP 9	1 Hagen Central 2 Hagen North 3 Waghi 4 Jimi 5 Tambul	1 Hagen Central 81 Kagamuga 83 Mt Hagen 80 Banz 82 Minj
CHIMBU 10	1 Kundiawa 2 Sinasina 3 Gumine 4 Kerowagi 5 Gembogl 6 Chuave	80 Kundiawa 81 Kerowagi 82 Chimbu
EHP 11	1 Goroka 2 Henganofi 3 Kainantu 4 Lufa 5 Okapa 6 Wonenara	80 Goroka 81 Kainantu 82 Aiyura/Ukurumpa
MOROBE 12	1 Finschafen 2 Kabwum 3 Kaiapit 4 Lae 5 Menyamya 6 Mumeng 7 Wau	83 Finschafen 84 Kaiapit 82 Lae 81 Bulolo 81 Wau
MADANG 13	1 Rai Coast 2 Madang 3 Bogia 4 Ramu	82 Saidor 81 Madang 80 Bogia
E S P 14	1 Angoram 2 Wewak 3 Maprik 4 Ambunti	81 Angoram 83 Wewak 82 Maprik 84 Ambunti
W S P 15	1 Aitape 2 Vanimo 3 Amanab 4 Telefomin 5 Lumi 6 Nuku	80 Aitape 81 Vanimo

PROVINCE	DISTRICT	TOWN (CD)
MANUS 16	1 Manus	80 Lorengau 81 Lombrum
N I P 17	1 Lamet 2 Kavieng 3 Namatanai	80 Kavieng 81 Namatanai
ENBP 18	1 Kokopo 2 Pomio 3 Rabaul	80 Kokopo 81 Rabaul 82 Keravat
WNP 19	1 Ewasse 2 Kandrian 3 Talasea	81 Kandrian 80 Kimbe
NSP 20	1 Buka 2 Buin 3 Kieta	80 Buka Passage 81 Buin 82 Arawa 83 Panguna 84 Kieta 85 Loloho
SOUTH REGION 21		
HIGHLANDS 22		
MOMASE 23		
ISLANDS 24		
PNG TOTALS 25		

COMPANY REGISTER

INPUT SHEET

01	REGISTRATION NUMBER:	_____	02	NUMBER OF EMPLOYEES:	_____
03	COMPANY NAME:	_____			
04	ESTABLISHMENT NAME:	_____			
05	INDUSTRIAL CODE:	_____	06	MAIN ACTIVITY:	_____
07	LOCATION:	_____			

08	PROVINCE CODE:	_____	09	TOWN CODE:	_____
10	TELEPHONE:	_____	11	TELEX:	_____
			12	FAX	_____
13	ENTERPRISE & CONTACT ADDRESS:	_____			

14	NAME OF DIRECTOR:	_____			
15	PARENT/ SUBSIDIARY:	_____			
16	OWNERSHIP:	_____			

17	DATE OF INCORPORATION:	_____	18	DATE STOPPED OPERATING:	_____
19	COMPANY STATUS:	_____			
20	CAPITAL:	_____			
21	EXPORTER:	_____	22	DATE LATEST UPDATE:	_____

INPUT SHEET

- 01 - REGISTRATION NUMBER: UNIQUE NUMBER ALLOCATED BY
THE REGISTRAR GENERAL'S OFFICE
- 02 - NUMBER OF EMPLOYEES
- 03 - COMPANY NAME, AS OFFICIALLY REGISTERED.
ENTER NAME FIRST, INITIAL NEXT IF ANY
- 04 - NAME OF THE ESTABLISHMENT OWNED BY THE COMPANY
- 05 - PNG STANDARD INDUSTRIAL CLASSIFICATION CODE
- 06 - MAIN ACTIVITY (FREE TEXT)
- 07 - LOCATION OF TRADING OFFICER
- 08/09 - PROVINCE CODE/ TOWN CODE (SEE STANDARD LIST)
- 10/11/12 - TELEPHONE/ TELEX/ FAX NUMBERS
- 13 - ADDRESS OF REGISTERED OFFICE AND CONTRACT NAME
- 14 - NAME OF DIRECTOR: NAME, FIRST
- 15 - PARENT/SUBSIDIARY - ULTIMATE PARENT OR SUBSIDIARY COMPANY
- 16 - OWNERSHIP =
IF 15 = P - LEAVE THIS BLANK
IF 15 = S - PARENT COMPANY, NAME AND COUNTRY OF ORIC
- 17 - DATE OF INCORPORATION (mm/dd/yy)
- 18 - DATE WHEN COMPANY STOPPED OPERATING (mm/dd/yy)
- 19 - COMPANY STATUS: PR FOR PRIVATE, PU FOR PUBLIC, FO FOR
FOREIGN
- 20 - NOMINAL CAPITAL (IN KINA)
- 21 - EXPORTER : Y/N
- 22 - DATE OF LATEST UPDATE (mm/dd/yy)

COMPANY REGISTER: OUTPUT FORMAT

COMPANY DATAHEET

CO:	_____	RN:	_____
	_____	DATE INC:	_____
	_____	DATE STOPPED OPERATING:	_____
CONTACT ADDRESS:	_____	LOCATION:	_____
	_____		_____
TELEPHONE:	_____	COMPANY STATUS:	_____
TELEX:	_____	NUMBER OF EMPLOYEES:	_____
FAX:	_____	NOMINAL CAPITAL (K):	_____
		PARENT/SUBSIDIARY:	_____
COMPANY DIRECTOR:	_____	OWNERSHIP:	_____
INDUSTRIAL SECTOR:	_____	EXPORTER:	_____
	_____		_____
MAIN ACTIVITY:	_____	DATE OF LATEST UPDATE:	_____
	_____		_____

LIST OF FILES ON LCTUS 1, 2 and 3

<u>FILE NAME</u>	<u>DESCRIPTION</u>
1 ALLCOMPR	- Major Export Commodities Average FOB Prices (1983-1988)
2 ASEAN	- Trade of PNG with ASEAN Countries. (1984 - 1987)
3 AUSCOM	- PNG - Value of Principal Commodities Exported, to Australia and Trade Balance (1983 - 1987)
4 FOREMP	- Formal Employment and Structure change by Sector (1976 - 1983)
5 COMDEST	- PNG: Value of Principal Commodities Exported, origin and Destination of Trade and Trade balance (1983 - 1987)
6 DAILYEX	- Daily Exchange Rates, Westpac Spot Selling (1988)
7 DISTGDP	- Distribution of Gross Domestic Product by Sector (1970 - 1983)
8 EECOM	- PNG - Value of Principal Commodities Exported, to EEC and Trade Balance (1983 - 1987)
9 EMPBRAN	- Number of Persons employed by Manufacturing Industry Branches (1975 - 1988)
10 SIZEEMP	- Size Distribution of Employment in the Industrial Sector (1970 - 1983)
11 EXCOCOA	- Cocoa beans export by Country of destination and percentage shares. (1981 - 1987)
12 EXCOFFEE	- Coffee exports by country of destination and percentage shares (1981 - 1987)
13 EXEEC	- PNG Value of Exports to EEC countries and Percentage shares (1981 - 1987)
14 EXPDEST	- PNG - Value of Exports by country of destination and Percentage shares (1981 - 1988)
15 EXPPORT	- PNG - Value of Exports, by Port of Shipment and Percentage Shares (1981 - 1988)
16 EXPTYPE	- PNG - Exports Quantity, Value and Unit Price by type of Commodity (1981 - 1988)

17	EXRATE	-	Foreign Exchange Rates. (Major Currency) 1975 - 1987
18	FACTOP	-	PNG - Summary of Factory Operations (1962 - 1985)
19	GROWRA	-	Growth rates of Real GDP and Manufacturing Value Added. (1970 - 1985)
20	IMPBROAD	-	PNG - Values of Imports, by Broad Economic Category and Percentage Shares (1981 - 1986)
21	IMPEEC	-	PNG - Value of Imports from EEC Countries and Percentage Shares (1981 - 1986)
22	IMPORIG	-	PNG - Value of Imports, by country of Origin and Percentage Shares (1981 - 1987)
23	IMPPORT	-	PNG - Value of Imports, by Port of Entry and Percentage Shares (1981 - 1986)
24	IMPSTAT	-	PNG - Value of Imports, by Commodity Group and Percentage Shares (1981 - 1986)
25	JAPCOM	-	PNG - Value of Principal Commodities Exported, to Japan and Trade Balance (1983 - 1987)
26	NEWCOM	-	PNG - Value of Principal Commodities Exported, to New Zealand and Trade Balance (1983 - 1987)
27	NOBRAN	-	Number of Factories, by Manufacturing Industry Branches and Percentage Shares (1978 - 1985)
28	NOCOM	-	Number of Existing Companies by Industry Group (1981 - 1985)
29	OUTBRAN	-	Value of Output, by Manufacturing Industry Branches and Percentage Shares (1978 - 1985)
30	PARTNER	-	PNG - Principal Trading Partners. (Imports/Exports) - 1981 - 1987
31	PLWEEK	-	International Commodity Prices. 1988 (Public Ledger)
32	PRODBRAN	-	Value of Production, By Manufacturing Industry Branches and Percentage Shares (1978 - 1985)
33	ROTDAM	-	Rotterdam Stocks (1988)
34	RUBPROEX	-	Rubber Production and Exports (1980-1987)

- 35. SIZEFACT - Size Distribution of Factories in the Industrial Sector (1970 - 1983)
- 36. STOCKMKT - Daily Commodities Prices. London/New York Stockmarket. (Financial Review) 1988
- 37. NEWCORÉG - New Company Registration in PNG by Industry (1976 - 1988)
- 38. TRADREL - Trade Relationship between PNG and Selected Countries (1981 - 1987)
- 39. USACOM - PNG - Value of Principal Commodities Exported to USA and Trade Balance (1983 - 1987)
- 40. MINWAGE - Minimum Wage Rates by Class of Workers and Level of Urban Centre (1981 - 1988)

DEPARTMENT OF TRADE AND INDUSTRY

INFORMATION SERVICE

REQUEST FOR INFORMATION

DATE:

NAME OF ENQUIRER:

TEL:

NAME OF ORGANISATION:

DIVISION:

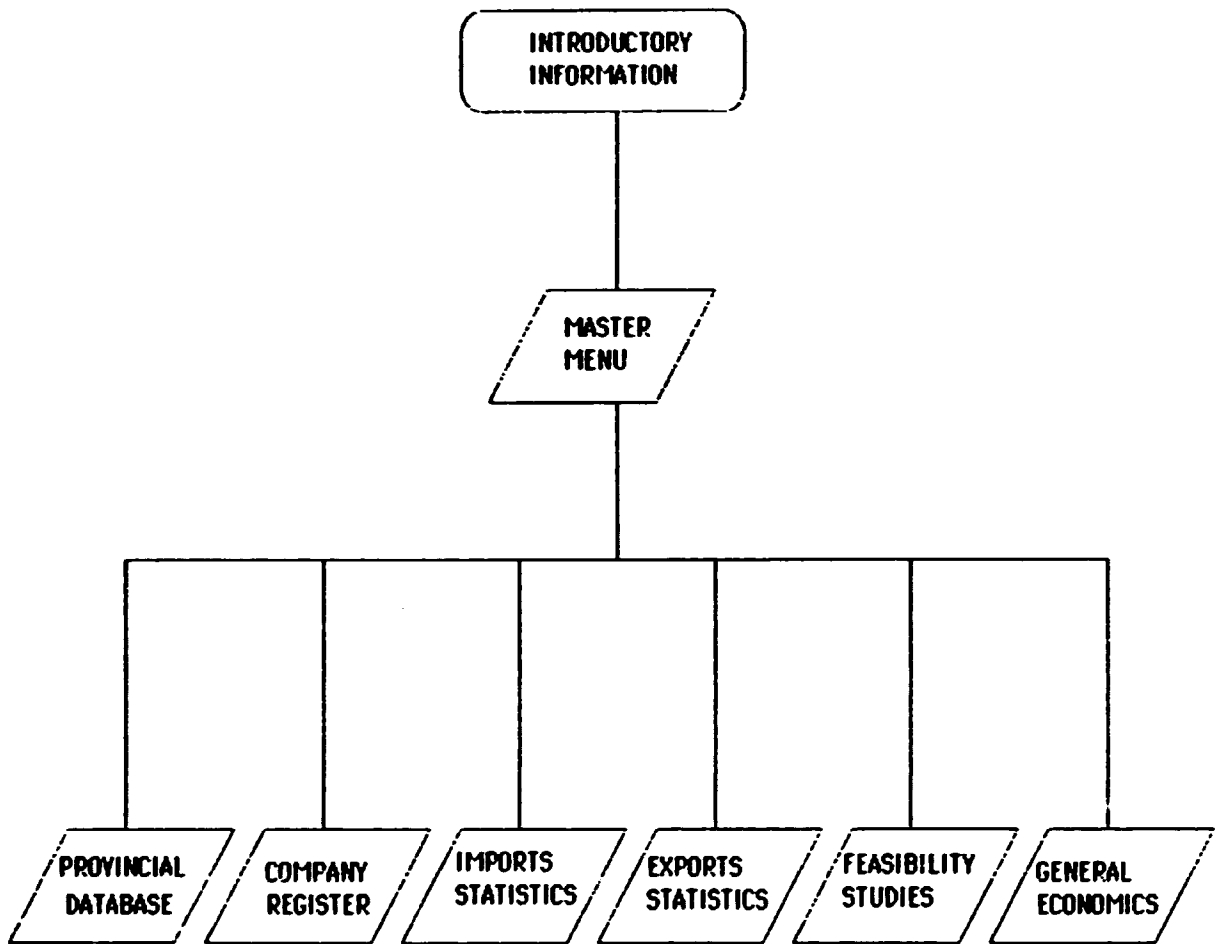
ENQUIRY:

SOURCE OF INFORMATION:

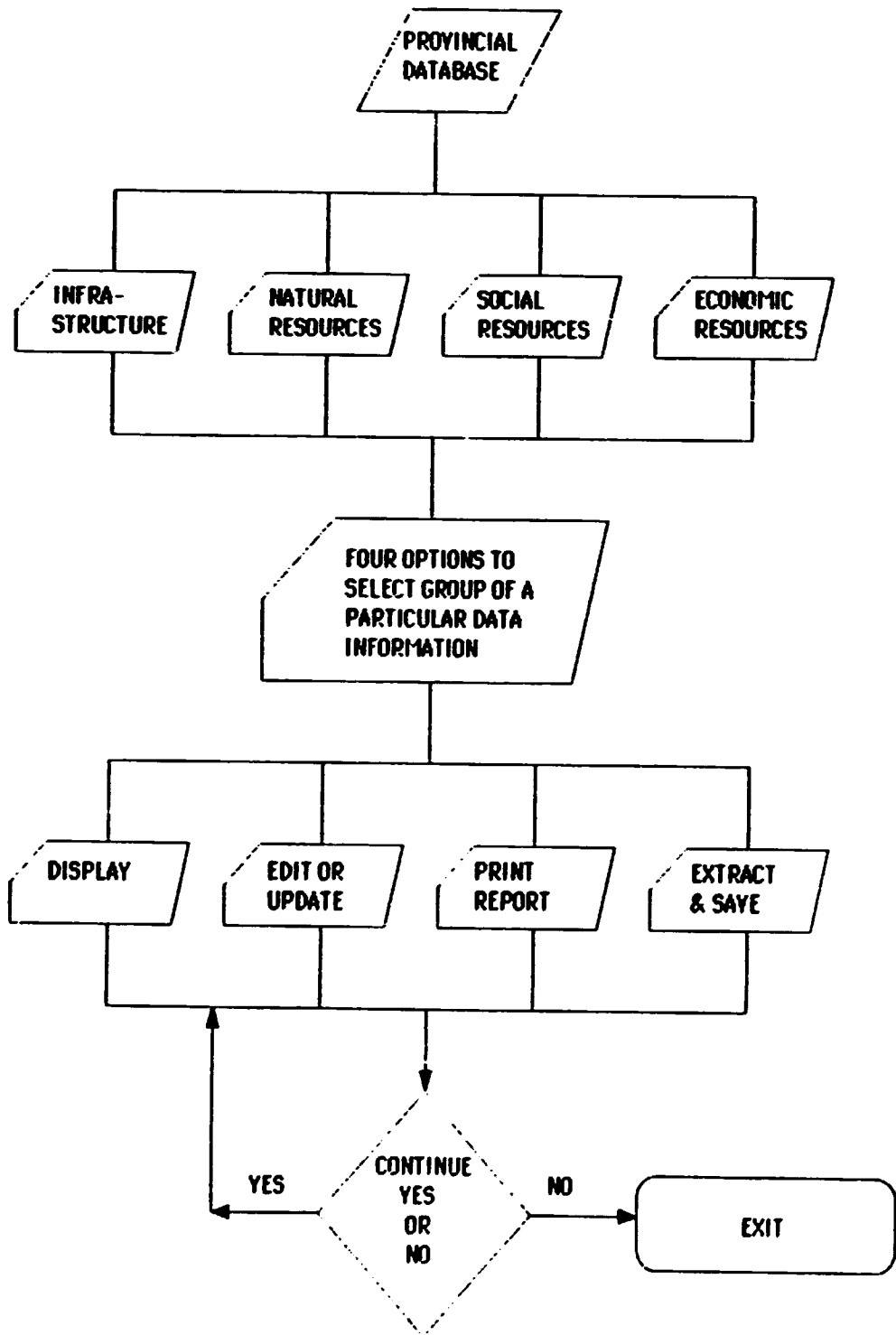
The Information Service was able/unable to supply the required data.

REMARKS:

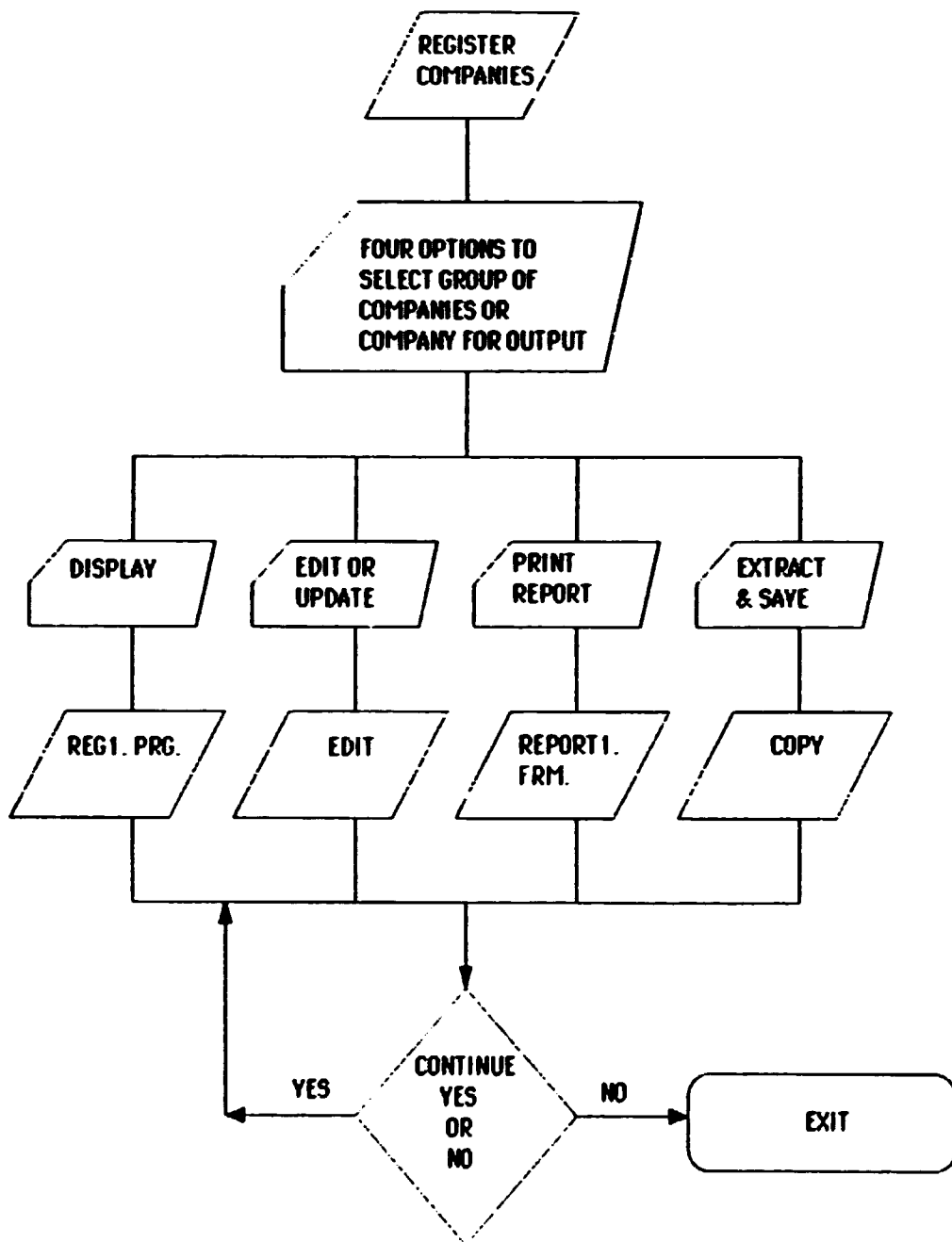
FLOW CHART FOR DTI INFORMATION MANAGEMENT SYSTEM



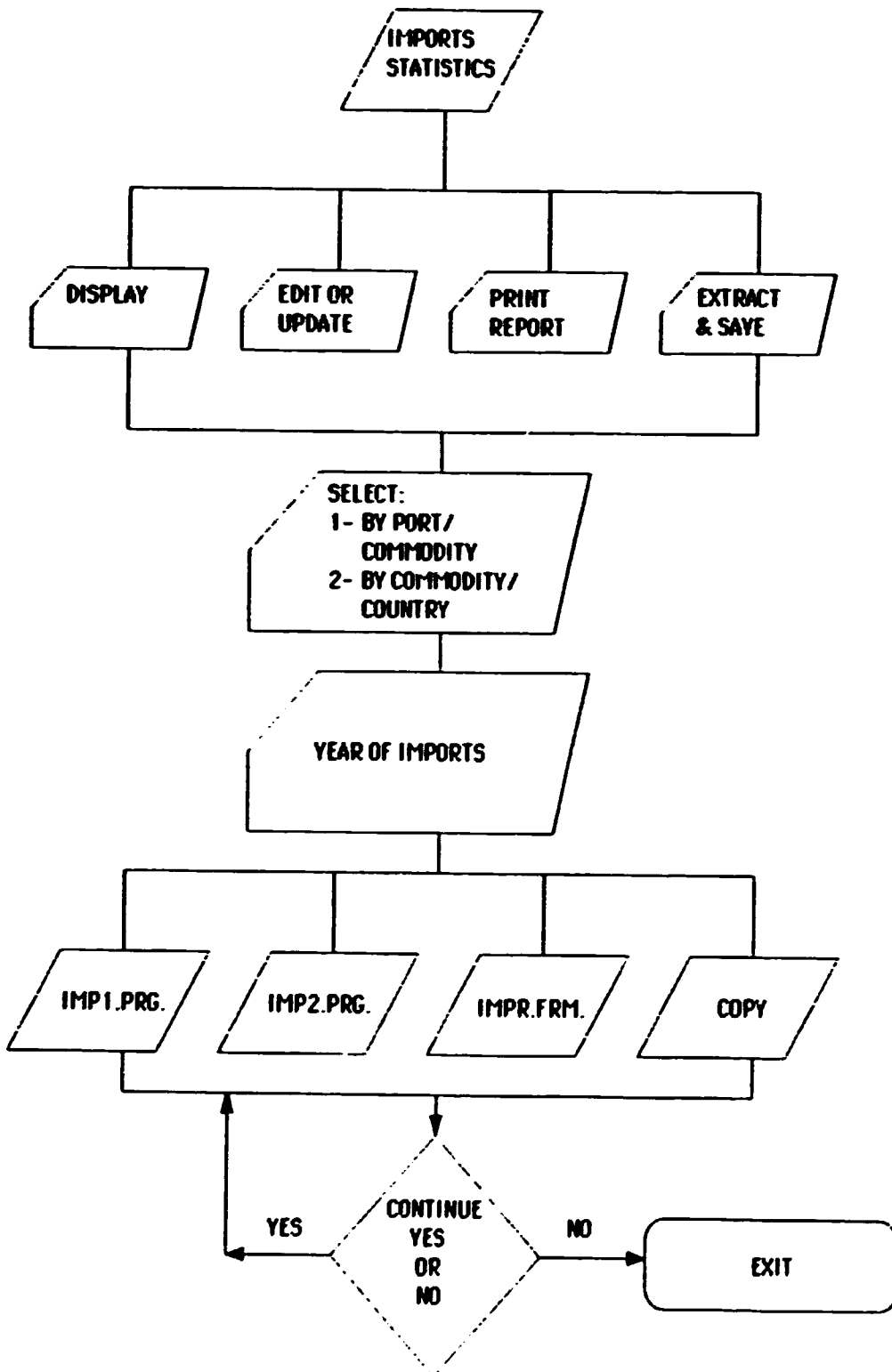
PROVINCIAL DATABASE



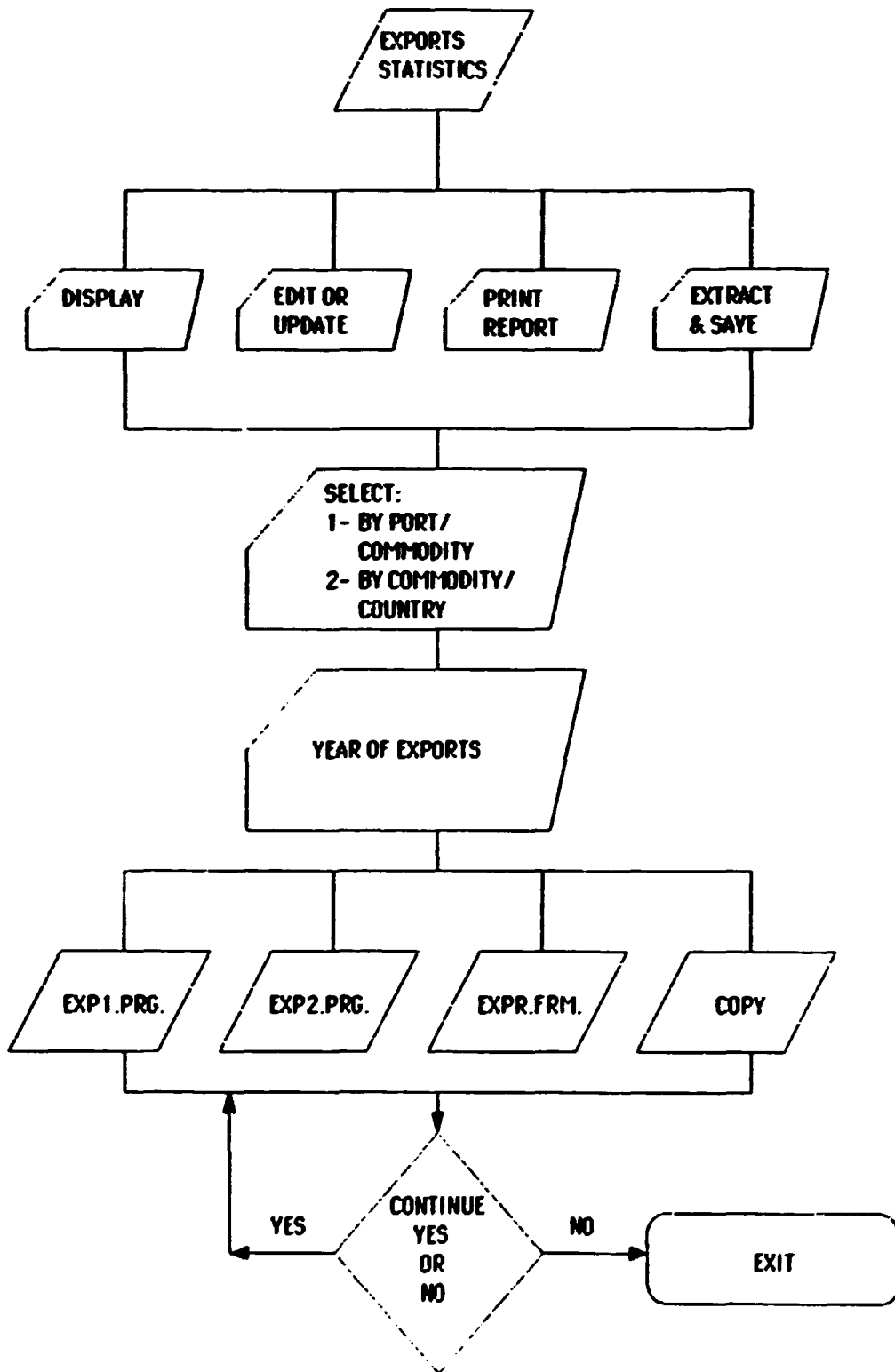
REGISTER OF COMPANIES



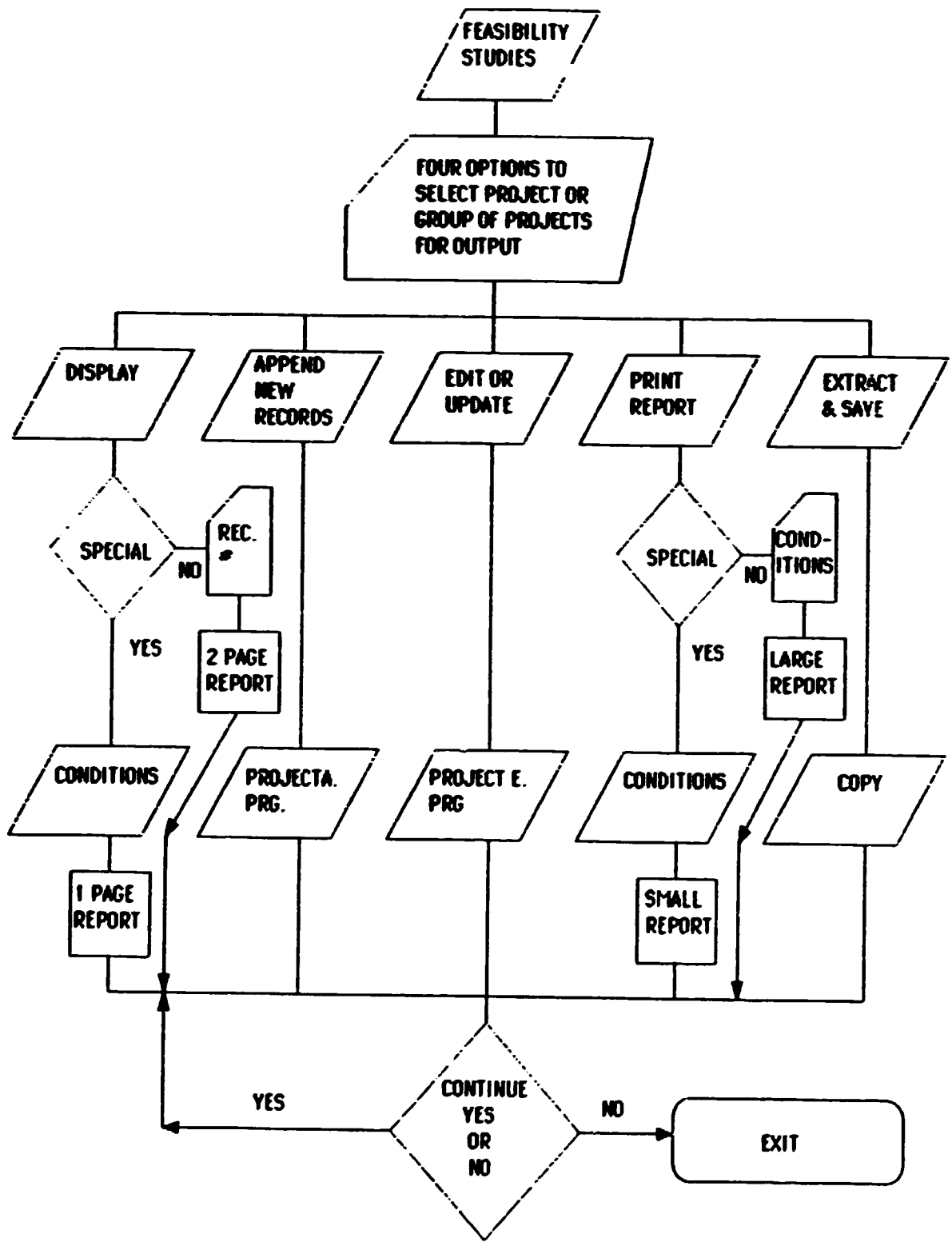
IMPORTS STATISTICS



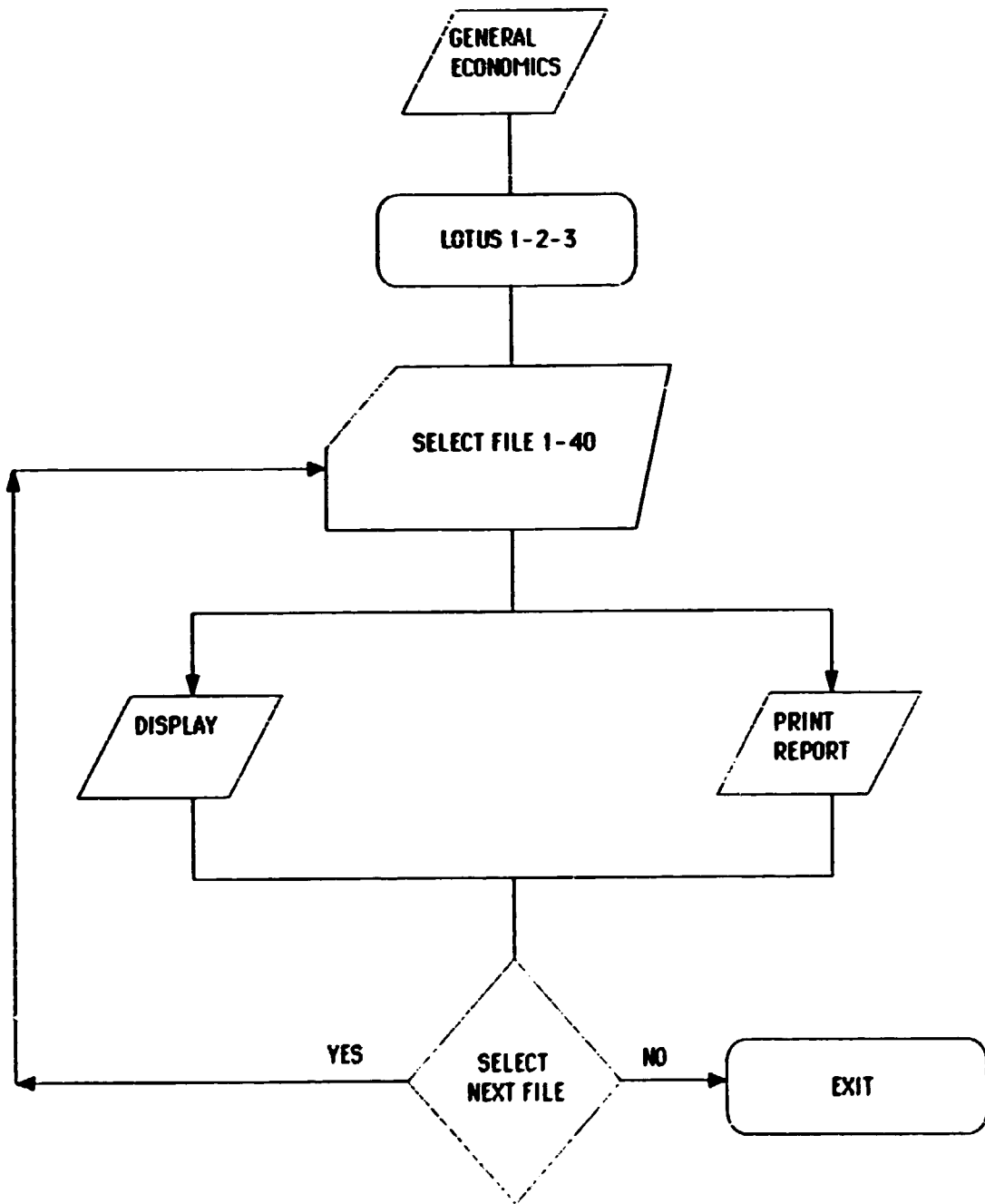
EXPORTS STATISTICS



FEASIBILITY STUDIES



GENERAL ECONOMICS



ANNEX VII

Commercial back-up packages

PC Tools Deluxe by Central Point Software (Canadian \$ 119) is a group of programs that offers significant improvements on DOS's file handling capacity. One program PC BACKUP provides an easy way to follow command sequence for selecting files to be backed up. Files are selected in a backup specification menu that allows selection of drive, path, file name and extension. In addition, options are offered to select sub-directories of the specific path, all files or only modified ones and to update the archive indicator. PC BACK does not allow files to be selected by dates. File restoring is handled by PC RESTORE which offers verification of backed up files along with the ability to select files or groups of files to be restored.

BACK IT by Gazelle Systems (US \$ 116.95) is a single program. File selection parameters include all files or modified ones only, files of all or some sub-directories, and files created between a pair of given dates. Files of a given type (see extension) can be selected or excluded. This program offers also an optional updating of the archive indicator and verification of the files backed up.

SY-STOR by Sytron Corporation (US \$ 149.95) offers an extensive file selection process. To reduce the time taken, a list of files to be included or excluded can be set up in a separate text file. This file can be called up from within SY-STOR to help automate the program, facilitating its use by beginners. A separate configuration program SS CONFIG pre-sets back-up parameters for regular use. Further automation of the program is provided by the SSBATCH utility. This program facilitates the creation of a DOS batch file which contains menu selection for a desired backup routine. Any number of batch files can be created to standardize regular backups.

List of suppliers:

PC Tool Deluxe

Contact: Central Point Software Inc., 9700 S.W. Capitol Hwy, suite 100, Portland, OK 97219, tel: (503) 244 5782

BACK-IT

Contact: Gazelle Systems, 42 North University Ave, Suite 10, Provo, UT 84601, tel: (801) 377 1285

SY-STOR

Contact: Sytron Corp. 135 Maple str, Marlboro, MA 01752, tel: (617) 450 0106

Library Management Software

A number of commercial packages are available.

CAIRS Library Management System

This programme, available for IBM PCs and compatibles, is produced by the British Food Manufacturing Industries Research Association, is a fully integrated library management system which allows to control the full range of library management functions. The facilities include central catalogue,

acquisitions, library accounting, loans issue and return, reservations, periodical holdings, issues and circulation control. It is based on a modular approach and can be totally menu driven. It is extensively used in 30 libraries and worldwide.

Communications hardware and software

The communication of data is a combined function of hardware and software.

Hardware

A Modem for asynchronous/synchronous operation with full-duplex link would allow serial data transmission in both directions through the link at the same time, at a speed of 1200 baud. This type of modem is available in PNG and costs about K.900.

"Intelligent" modems with auto-dial/auto-answer/auto-call facility allow:

- . to dial a telephone number through keyboard or through software access of a telephone number and associated information stored in a disk file
- . to respond to incoming call without human intervention and store message received
- . to preset messages for delivery at a certain time.

Their price vary according to the degree of "intelligence".

Communications software

Crosstalk and Connect are two packages which allow a direct connection with external databases via a modem. Not only do they allow to establish the connection, but they enter automatically telephone number, id user number, password(s) which accelerates the connection process and minimizes the risk of error.

Communications networks

Access to online databases is possible via Australia's AUSTPAC packet switching network which allows high-speed links by multiple users through local nodes. Asynchronous terminals may access the network provided they are connected to the node's PAD (Packet Assembly/Disassembly) facility, available through Datel services. The Australian MIDAS service set up by the Overseas Telecommunications Commission (OTC) establishes a multiplexed wide-band trans-Pacific satellite link so that users can make relatively low-cost connections to a wide range of computing networks such as Tymnet and Lockheed's Dialog database.

WEEKLY COMPUTER TIMESHHEET

INDUSTRY/PROJECTS & INVESTMENT DIVISION

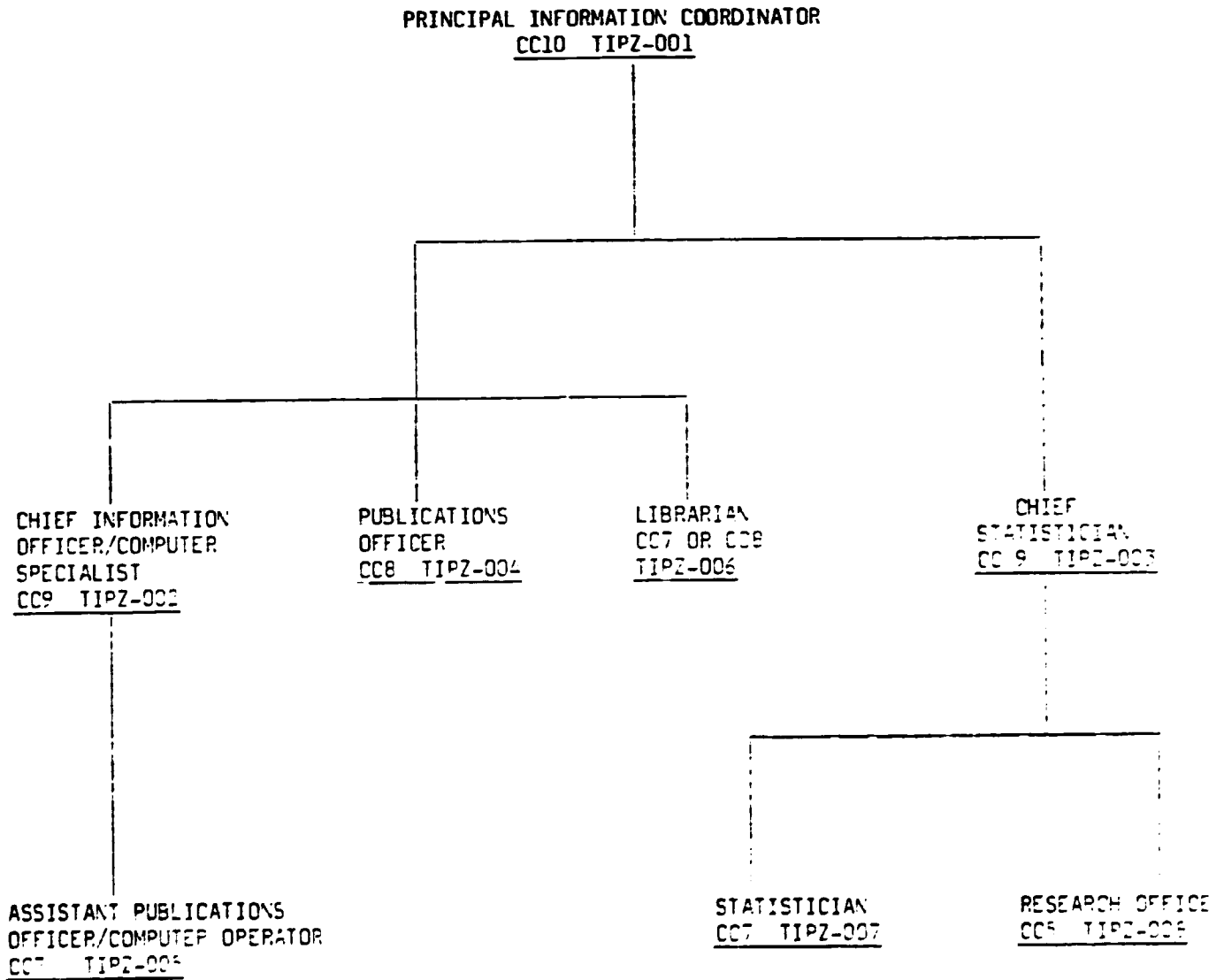
WEEK COMMENCING:

COMPUTER NO. 1		COMPUTER NO. 2	
8 - 9 9 - 10	SECRETARIAL WORK	8 - 9 9 - 10	SECRETARIAL WORK
10 - 11 11 - 12	FIRST ASSISTANT SECS AND ASSISTANT SECS	10 - 11 11 - 12	PROJECT OFFICERS
1 - 2 2 - 3 3 - 4	SENIOR PROJECT OFFICERS	1 - 2 2 - 3 3 - 4	PROJECT OFFICERS

INFORMATION DIVISION

INFORMATION & STATISTICS BRANCHES

PROPOSED ORGANIGRAMME



DTI COMPUTER TRAINING

30 NOVEMBER 1988

REQUIREMENTS EXPRESSED BY OFFICERS

DIVISION	BASIC COMPUTER OPERATION		DTI IMS		NETWORKS		MODEM COMMUNICATIONS		FACSIMILE		FILE TRANSFER	
	B	A	B	A	B	A	B	A	B	A	B	A
INDUSTRY POLICY	5	5	10	1	10		7		7	1	7	
MANAGEMENT	12		11		11		11		11		12	
TRADE	9	1	11		11		8		8		8	
BUSINESS DEVELOPMENT	6	1	7		6		6		6		6	
PROJECT MANAGEMENT	7	2	9		5		6		4		4	
STANDARDS	6		6		5		5		6		6	

SOFTWARE/MACINTOSH

DIVISION	WORD PROCESSING		DATA BASE MANAGEMENT		SPREADSHEET		GRAPHICS		DESKTOP PUBLISHING	
	B	A	B	A	B	A	B	A	B	A
POLICY	5	2	5	1	6	1	5	2	6	1
MANAGEMENT	5	1	7	1	7	1	8		7	1
TRADE	3		4		3		2			
BUSINESS DEVELOPMENT	7	1	7	1	8	7	7	1	7	1
PROJECT MANAGEMENT	3		4		4		4		4	
STANDARDS	5		5	1	5	1	5	1	5	1

SOFTWARE/IBM

DIVISION	WORD PROCESSING		DB. MANAGEMENT		SPREADSHEET		GRAPHICS		STATICAL PACKAGE		DESKTOP PUBLISHING	
	B	A	B	A	B	A	B	A	B	A	B	A
POLICY	8	2	9	1	7	1	6	1	7	2	7	2
MANAGEMENT	9	2	9	2	9	2	9		7		7	1
TRADE	10		11		10	1	11		10		10	
BUSINESS DEVELOPMENT	4	1	4	1	4	1	4	1	3	1	4	1
PROJECT MANAGEMENT	8	1	8		5	1	5	1	5		4	
STANDARDS	6		6	1	6	1	6	1	6	1	6	1

ANNEX XII

1989 COMPUTER TRAINING PROGRAMME

REQUIREMENTS FOR COMPUTER TRAINING

JANUARY-MARCH 1989

WORD PROCESSING

Wordstar 4.0/Macwrite

1- Basic course:

4 groups of approximately 15 trainees to attend 2 days training each

2- Advanced course:

2 groups of approximately 12 trainees to attend 1 day training each

Optional

MACWRITE only: 1 group of approximately 12 trainees to attend 2 days training each

SPREADSHEET

Lotus 123/Excel

1- Basic course:

4 groups of approximately 15 trainees to attend 2 days training each

2- Advanced course:

1 group of approximately 15 trainees to attend 1 day training

Optional

EXCEL only: 1 group of approximately 15 trainees to attend 2 days training each

DATABASE MANAGEMENT

DBase III plus/Foxbase

4 groups of approximately 15 trainees to attend 2 days training each

Optional

FOXBASE only: 1 group of approximately 15 trainees to attend 2 days training

GRAPHICS

Freelance plus/Superpaint

2 groups of approximately 15 trainees to attend 1 day training each

DESKTOP PUBLISHING

Pagemaker/RSG

1 group of 4 trainees to attend 2 days training

INTRODUCTION TO NETWORKS/MODEM COMMUNICATIONS/FACSIMILE/FILE TRANSFER

1 group of approximately 15 trainees to attend 1 day training

NOVEMBER-DECEMBER 1989

BASIC COMPUTER OPERATION

1 day training with a group of approximately 15 trainees

WORD PROCESSING

2 days training with a group of approximately 15 trainees

SPREADSHEET

2 days training with a group of approximately 15 trainees

DATABASE MANAGEMENT

2 days training with a group of approximately 15 trainees

PROPOSED DISTRIBUTION OF TRAINEES

The groups of trainees refer to the list compiled from the DBase III database TRAINING.DBF.

Basic Computer Operation Course: includes all DTI staff.

Word Processing: basic and advanced courses include all DTI staff who have

expressed the wish to do either or both courses.

Spreadsheet and DBase management: basic and advanced courses are intended to officers who have expressed the wish to do either or both courses (excluding typists).

Data Base Management: this will be a basic course excluding programming, intended to officers who have expressed the wish to do it (excluding typists).

For WP, spreadsheet and BD management, two separate courses have been planned for IBM and Macintosh environments, the latter being intended only to officers from the Business Development Branch.

As far as Graphics, Desktop Publishing and Introduction to Networks is concerned, the groups remain to be determined.

Depending on the enthusiasm and skill shown by the trainees during the basic sessions, more people may be included in the advanced WP and Spreadsheet courses.

Extra courses have been planned towards the end of 1989 for officers who will be away in February-March and new recruits.

BASIC COMPUTER OPERATION

January 1989

Free training for all DTI staff by Omega Consultants

Fall 1989

1 day training for 1 group (Y and new recruits)

WORD PROCESSING

IBM environment: WORDSTAR/WORD

Basic course: 2 days training per group

January 1989

OMEGA free training: 1 group (C, E & M)

February-April 1989

4 groups:

- . Group 1: I, K - 15 trainees
- . Group 2: D, G - 13 trainees
- . Group 3: F, H - 12 trainees
- . Group 4: J, L (minus Ivy Barbara) & N - 10 trainees

Advanced course: 1 day training per group

February-March 1989

2 groups:

- . Group 1 - 10 trainees:

MANAGEMENT SERVICES
Mickie Benjamin
Ekari Peter

DTI
Paska Eta

Konie? Vaula

POLICY PLANNING
Patterson Jasper
Mavaru Vivian
Oaive Kevin
Turobert Sylvia

TRADE
Niweia Lorna
Nohc Boro

. Group 2 - 9 trainees:

TRADE
Ivy Barbara
Galama Lea
Atepe Bernadette

STANDARDS
Apolia Aga
Yangia Nicholas

INDUSTRY/PROJECTS
Baita Michael
Grieg-Gran Marianne
Kose Anna

UNIDO
Iava Kila

Basic and Advanced course

Fall 1989

2 days course for basic and advanced training for 1 group

Macintosh environment: MACWRITE/WORD

February-March 1989

2 days basic and 1 day advanced for 1 group (A & B) - 11 trainees

SPREADSHEET

IBM environment: LOTUS 1.2.3

Basic course: 2 days training per group

January 1989

OMEGA free training: 1 group (D, F & M)

February-March 1989

4 groups (excluding typists) with 2 days training per group:

- . Group 1: I, K - 12 trainees
- . Group 2: C (minus Baita Michael), E - 11 trainees
- . Group 3: G, H - 9 trainees
- . Group 4: J, L & M (Iava Kila) - 9 trainees

Advanced course: 1 day course per group

February-March 1989

1 group - 9 trainees:
INDUSTRY/PROJECTS

POLICY PLANNING

Baita Michael
Grieg-Gran Maryanne
Passingan Eruel

Oaive Kevin
Patterson Jasper
Tine Jimmy

STANDARDS
Kumo Susan
Yangia Nicholas

UNIDO
Kyi Mya Mya

Basic and advanced course

Fall 1989

2 days course for 1 group

MACINTOSH environment: EXCEL

February-March 1989

2 days basic and 1 day advanced for 1 group (excluding typists): A, B & M (Myint Kyi Kyi, advanced only) - 10 trainees basic & 11 advanced

Fall 1989

2 days basic and advanced for 1 group

DATABASE MANAGEMENT

IBM environment: DATABASE III PLUS/DATABASE IV

February-March 1989

4 groups (excluding typists) with 2 days training per group:

- . group 1: I, K, H - 16 trainees
- . group 2: D, G & M (Iava Kila & Kyi Mya Mya) - 14 trainees
- . group 3: F & C - 13 trainees
- . group 4: J, L & E - 14 trainees

Fall 1989

2 days course for 1 group

MACINTOSH environment: FOXBASE

February March 1989

2 days course for 1 group: A & B (excluding typists) - 10 trainees

GRAPHICS

Freelance & Superpaint

2 days training in February-March for one group to be determined

DESKTOP PUBLISHING

Pagemaker & RSG

1 day training in February-March for 1 group to be determined

INTRODUCTION TO NETWORKS

1 day training in February-March for 1 group to be determined.

ANALYSIS OF OFFERS BY REMINGTON AND OMEGA CONSULTANTS
FOR COMPUTER COURSE

COURSE SCHEDULED DURING SPRING 1989

		REMINGTON		OMEGA	
WORD PROCESSING					
. Wordstar Basic & advanced					
. Macwrite Basic & advanced					
Total : 12 days	K	4200	K	9000	
SPREADSHEETS					
. Lotus 123 basic & advanced					
. Excel basic & advanced					
Total : 11 days	K	3850	K	8250	
DB MANAGEMENT					
DBase III/Foxbase	:	10 days	K	3500	
			K	7500	
GRAPHICS					
Freelance Plus/Superpaint	:	2 days	K	700	
			K	1500	
DESKTOP PUBLISHING					
Pagemaker	:	2 days	K	700	
			K	1500	
NETWORKING/COMMUNICATIONS					
		1 day	K	350	
			K	1000	
<u>Total cost for Spring 1989</u>		K	13300	K	28750

COURSE SCHEDULED DURING FALL 1989

BASIC COMPUTER OPERATION	1 day	K	350	K	1500
WORD PROCESSING	2 days	K	700	K	1500
SPREADSHEETS	2 days	K	700	K	1500
DB MANAGEMENT	2 days	K	700	K	1500
<u>Total cost for Fall 1989</u>		K	2450	K	5000
Total budget required for 1989:		K	15750	K	33750

REMINGTON is quoting on a basis of K 350 per day for all courses. Teaching aids are included in the price.

However, their offer does not include any Macintosh application and they do not specialize in Macintosh although they feel they could fulfill our requirements. An alternative solution would be to use Remington for all IBM applications and a Mac specialist, such as Aiva KUWOH from WAWA SECRETARIAL & TRAINING SERVICES, who has submitted an offer for the training of BDOs on the basis of K 350 per day. The required budget for the overall 1989 computer training is K 15750.

OMEGA CONSULTANTS are quoting on a basis of K 750 per day for WP, Spreadsheets, DB Management, Graphics, Desktop publishing, K 1000 for Networking/communications, K 500 for Basic Computer Operation course. Teaching aids and handouts are included in the price. The required budget for the overall 1989 computer training is K 32750.

Although OMEGA have performed satisfactorily during the trial period, free of charge, they are very expensive. Remington is a well established computer training center and should be seriously considered for the training, eventually in cooperation with Aiva Kuwoh.

ANNEX XIV

COMPUTER TRAINING FOR SMALL BUSINESS DEVELOPMENT SERVICE

I TRAINING REQUIREMENTS FOR 1989

A pilot programme for the development of small business in PNG has been drafted for 1989 and includes a plan for staff training and development operating in the provinces.

Part of the training comprises information management and networking, including the operation of selected basic computer systems based on Macintosh applications and communications technologies.

An initial stage of formal training, scheduled in March-April 1989, will be followed by an informal phase of in-service training, scheduled from July to December 1989.

At this stage, the training programme includes 5 officers, mainly, Business Development Officers, from various provinces. During the initial phase, the officers will be brought together and taught as a group. The second phase of training, in-service training, will take place at their respective offices: as a consequence, the trainer will be required to travel from one office to the other. The trainees and their locations have not yet been determined.

I.1 INITIAL TRAINING

The training requirements are as follows:

Basic computer operation

- . Introduction to computers
- . Operating systems
- . Application software
- . Computer system selection and implications
- . Maintenance and security

. 1 day course

Word processing

Macwrite/Writenew/word: theory and practice

3 days course. 2 days for basic training, 1 day for advanced training

Spreadsheets

Excel: theory and practice

3 days course: 2 days for basic training, 1 day for advanced training

Database management

Foxbase: theory and practice

2 days training

Graphics

Superpaint: theory and practice

1 day training

Desktop publishing

Pagemaker/RSG

2 days training

Introduction to networks/modem communications/fac simile/file transfer

1 day training

I.2 IN-SERVICE TRAINING

16 days training including two days per regional center starting July 1989.

II TRAINING COMPANIES/SERVICES THAT HAVE BEEN APPROACHED IN JANUARY 1989

CHIMBU HOLDING ENTERPRISES PTY LTD

Manager: Mr Camillus DAJIME

PO Box 125, Kundiawa

Tel: 75 1150 & 75 1037

A letter has been sent to the Secretary of the Province of Chimbu, Mr H. TOHAM, to enquire about training facilities offered by Chimbu Holding Enterprises. A reply is awaited.

WAWA SECRETARIAL & TRAINING SERVICES

Manageress: Ms Aiva KUWOH
PO Box 7139
Boroko
Tel: 252847

Ms KUWOH, has submitted an offer based on the above training requirements. Her CV shows that she has a good experience of training in a Mac environment. She would be prepared to carry out the course either in Moresby on our premises or in the provinces. She would also be prepared to do in-service training.

BEST

Directors: Mike MULLINS & Brian PETERS
Madang
Tel: 82 2040

In spite of limited resources, they may be interested in the training of BDOs. They will make a proposal, including training and accommodation facilities in Madang including Divine Word Institute Christian Press, Madang Teachers' College, Provincial Government Offices.

HANNS SEIDEL FOUNDATION

Contact: Pennie SMITH
Rabaul
Tel: 923068

Have standard courses. Showed little interest for our computer course. Do not have the resources.

III ACCOMMODATION FACILITIES

Administrative College, Port Moresby

Adcol has facilities available to trainees from government departments (very basic, including meals). A letter has been sent to the Principal.

PNG University

The Dean of students stated that the university campus is short of beds and could only accommodate trainees during holiday periods.

Rabaul Training Center

Hanns Seidel Foundation uses Rabaul training center which has beds for about 12 people. The Public Service Commission may have some facilities as well.

ANNEX XV

FILES ASSOCIATED TO COMPUTER TRAINING

1 - TRAINING.DBF

2 indexes:

- . TRAINING.NDX (indexed on Group + Division + Name)
- . DIVISION.NDX (indexed on Division + Name)

1 record per DTI officer with details of computer training; needs updating during computer course; can include other type of training.

2 - COURSEOM.DOC

Detail of course free of charge provided by OMEGA, including lists of trainees.

3 - COURSEPLAN.DOC

1989 computer training programme which includes:

- . training requirements submitted to training firms
- . proposed distribution of trainees
- . evaluation of quotations from OMEGA and REMINGTON

4 - COURSEPR.DOC

Training requirements for Business Development Officers in the provinces: potential trainers and training & accommodation facilities.

5 - COURSEVAL.DOC

Form for course evaluation

6 - COURSEQUO.DOC

Analysis of computer course quotations.

RESTRICTED

17367
(2 of 2)

DP/ID/SER.A/1146/Add.1
21 February 1989
ORIGINAL: ENGLISH

INSTITUTION BUILDING FOR INDUSTRIAL PROMOTION

DP/PNG/86/002

PAPUA NEW GUINEA

Technical report: Development of an information management system
for the Department of Trade and Industry*

(Part one)

Prepared for the Government of Papua New Guinea
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of Gerardo Pataconi, UNIDO associate expert
in industrial economics and statistics

Backstopping officer: W. Eckert, Industrial Planning Branch

United Nations Industrial Development Organization
Vienna

* This document has not been edited.

Value of the local currency - kina - in terms of United States Dollars

on 15 September 1985
1 kina = US\$ 1.161.
1 kina = 100 Toea

LIST OF ABBREVIATIONS

CDB	Clients Data Base
COMFAR	Computer Model for Feasibility Analysis and Reporting
CTA	Chief Technical Adviser
DTI	Department of Trade and Industry
FIMS	Financial Information Management System
FSDB	Feasibility Studies Data Base
HIPS	Highlands Industrial Potential Survey
IMS	Information Management System
ISIC	International Standard Industrial Classification
LMP	Library Management Package
MSGP	Mathematics/Statistics/Graphics Package
NIDA	National Investment and Development Agency
NSO	National Statistics Office
P	Publishing
PA	Project Appraisal
PC	Personal Computer
PNG	Papua New Guinea
PNGSIC	PNG Standard Industrial Classification
PROSPIN	Project Profile Screening and Pre-Appraisal Information System
RC	Register of Companies
RE	Register of Exporters
RGD	Registrar General Office
SBDC	Small Business Development Corporation
SDB	Statistical data Base
SITC	Standard International Trade Classification
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
WP	Word Processing

ABSTRACT

This report: "Development of an Information Management System for the Department of Trade and Industry" has been prepared under the project DP/PNG/86/002: "Institution Building for Industrial Promotion".

The 5 years project is aimed to assist the Department of Trade and Industry in developing and strengthening capabilities for industrial planning and policy analysis, as well as for preparation, evaluation and promotion of industrial projects, as well as for development of small-scale industries.

The purpose of the Information Management System is to improve the capability to disseminate and process information, to evaluate projects and feasibility studies and to promote and foster industrial and trade development.

The report contains detailed documentation of the Information Management System architecture and of the modules already developed: Statistical Data Base and Project Appraisal, in order to ensure continuity in its implementation; guidelines to permit further development and maintenance; and a decision support to purchase the suitable hardware.

The recommendations to the Department of Trade and Industry regard mainly the necessity to recruit appropriate staff to manage the system and to continue in the system development.

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Introduction

This document reports the process of setting up an Information Management System for the Department of Trade and Industry begun December 1987 and the related activities which took place in the following nine months.

It is aimed to provide: detailed documentation of the system development in order to ensure continuity in its implementation. guidelines to facilitate further development and maintenance; a decision support for the purchase of the necessary hardware.

The initial plan, defined in the UNIDO project document, which was to prepare guidelines first, and subsequently develop the system in three years time had to be modified.

In fact due to management changes and new priorities stated by the Department of Trade and Industry, it was decided to initiate the establishment of some of the components of the system and proceed, simultaneously, in the overall system design.

The staff members engaged full time in the project were:

Mr. Gerardo Pataconi
UNIDO Associate Expert. Industrial economist/statistician
November 87 - September 88
System analysis and design

Miss Kyi Kyi Myint
UN volunteers Computer Specialist
June 88 - June 90
Software development.

A very useful support was provided by Miss Mia Mia Kyi, UN Volunteer Statistician, in charge of the statistics unit (Information & Statistics Branch) of the Department of Trade and Industry, for the analysis of data sources, data uses, and in the activity of data entry.

Due to the chosen modular approach, some components have already been developed and some others are in process of establishment.

At the moment the entire system has been designed and the following modules have been set up: **a statistical data base, a projects and feasibility studies data base, a register of companies, and the projects Appraisal.** The latter module uses COMFAR: the UNIDO project appraisal computer programme, that has been implemented and used in practical applications.

The whole system is being built using an Personal Computer IEM AT in DATA BASE III+ with a "user-friendly" approach that enables non-skilled users to have easy access to data for retrieval, listing, reporting and analysis purposes.

The software specification and the identification of hardware needs here described, will support the Department of Trade and Industry in the process of equipment purchasing, system building and maintenance.

Recommendations

1. In order to consolidate the results achieved and to ensure continuity of the IMS development process and maintenance, it is strongly recommended that the Department of Trade and Industry will strengthen the Information and Statistics Branch recruiting officers to fill the planned positions.
2. Each branch of DTI should identify one officer to act as an interface between the IMS development team and his branch, in the system usage and to identify future improvements and needs.
3. Training courses in the most common software (e.g. LOTUS, Framework, Wordstar etc.) and in the use of the IMS should be organized to improve skills in informatics and analysis capability.
4. The Department of Trade and Industry should publicize the IMS, all the data available and the services that can be provided to all the potential clients of the Department: Government Institutions, businessmen, traders, etc.
5. UNIDO should continue to provide assistance in the IMS development: in the process of hardware purchase and system set up.
7. The Department of Trade and Industry should proceed in the purchase of the necessary hardware immediately to take advantage of the resources available (UNIDO staff and budget), to avoid delays in the system development and to speed up the impact of the system in DTI activities. The planned interim purchase of few computers for immediate needs, must take into consideration the possibility to network afterwards the stand alone computers.
6. Assistance in hardware purchase and software development should be acquired locally in order to get technical support in selecting the most appropriate system; in training and implementation; and in after-sale maintenance.
8. A general agreement should be reached between DTI and NSO to obtain data files of the register of companies and of import/export statistics every year following the procedure already applied for import/export statistics.
9. The possibility to incorporate International Statistics in the Information System should be investigated with the support of appropriate International Organizations (UNCTAD, GATT, etc.) in order to have direct access to their data banks.

1. PROJECT BACKGROUND

In September 1986 a broad based assistance programme was signed between UNDP and the Department of Trade and Industry named "Institution Building for Industrial Promotion" to be carried out in 5 years, with UNIDO acting as executing agency. The overall objective of the project PNG/86/002 was to assist the Department in the strengthening of the industrial promotion activities.

The project officially started November 1987 with the arrival of the consultants:

- 1) Mr. David Edwards, Project Analyst
- 2) Mr. Mario Lovaglio, associate expert in Small Scale Industry.
- 3) Mr. Gerardo Pataconi, associate expert in Industrial Economics and Statistics

The project staff was to include also:

- a) 1 Industrial Planner (not appointed yet)
- b) 1 Small Scale Industry Senior Expert (arrived April 88)
- c) 1 Associate Expert in Project Analysis (arrived May 88)
- d) 4 UN volunteers: 1 Statistician (July 85), 1 foundry specialist (arrived March 88) 1 computer specialist (arrived June 88) 1 unspecified (to be defined).

Mr. Edwards was appointed as pChief Technical Adviser (CTA).

The DP/PNG/86/002 project document identified the following activities to be attained regarding the information system establishment:

YEAR 1: review the present position and prepare guidelines for setting up an industrial data base

YEAR 2: assist in the establishment of the industrial data base
prepare proposal for establishing a system of maintaining, analyzing and publishing statistical data on small scale and rural industries.

YEAR 3: assist in the development of an industrial information system.

assist in consolidating the data system for small industry.

Since the project officially started in November 1987, a reassessment of the project took place due to :

- Change of Minister for Trade and Industry

- preparation of a Department Management Plan 1987-92
- available project staff.

Therefore, as stated by the Minister for Trade and Industry, and expressed in the Management Plan, the establishment of an Information System for the Department was emphasized as one of the primary objectives to be accomplished in the following 5 years.

Management Plan objectives related to the information system were:

prepare guidelines for setting up and maintaining an industrial data base and assist in its establishment

assist in the establishment of a system of maintaining, analysing and publishing, statistical data on small scale and rural industries.

Mr. Patacconi was then asked by the CTA to provide assistance in this matter.

Terms of reference

Terms of reference of Mr. G. Patacconi. Associate Expert in Industrial Economics and Statistics.

1. Assist the Chief Technical Adviser in analysis and review of foreign investment, technology transfer, industrial financing and other industrialization policies in the light of recent experience.
2. Assist in organizing industrial potential surveys through assessment of raw material resources and market opportunities in different regions of the country with a view to formulate regional industrial development programmes.
3. Design appropriate technical systems, methodologies and procedures for generating management information on industries, including statistical data collection, compilation, analysis and reporting to meet the information need of the DTI for internal decision making and public reporting.
4. Provide on-the-job and in-service training to national personnel on selected above-mentioned issues.

The terms of references were initially re-formulated according to the work plan prepared in January 1988, determining that Mr. Patacconi was to be involved in the development of systems for the information requirements of the project, and examining the information requirements of DTI.

Hence, his main duty was to assist:

- in carrying out a survey of users needs
- in the preparation of an industrial register
- in the initial stages of information definition and system design

The need for DTI staff and outside informatics/computer personnel involvement, to make the system a reality, was also identified in the work plan.

Nevertheless, in course of action for the above mentioned priorities, it was decided to accelerate the process of system design and at the same time, to implement some of its components to be integrated afterwards in a proper IMS.

Accordingly, even if these activities are normally undertaken by a system analyst/informatics expert, Mr. Patacconi was appointed to set up the IMS as his main duty in the project limiting his commitment to the other duties included in his job description (1). Therefore, the terms of reference of Mr. Patacconi were in effect re-formulated to:

set up the information management system for the Department of Trade and Industry aimed to disseminate information to the business sector and to the Department, including some office automation features.

activities:

1. carry out a survey of users needs in order to find out the requirements of DTI
2. establish a Register of companies (priority stated in the Management Plan)
3. prepare guidelines to set up a statistical data base including data both on industry and trade (priority stated in the management Plan)
4. develop the statistical data base
5. design the whole architecture of the system
7. define software specification
8. write software and supervise computer programming
9. define basic office automation requirements
10. evaluate hardware requirements

A detailed explanation of the above activities is presented as documentation to follow up further development.

(1) In the period July-August 1988 Mr. Patacconi was also involved in The Highlands Industrial Potential Survey which was used as a vehicle to analyse the statistical data needs for planning purposes, to design the Statistical data base, and to verify the efficiency of the data structure adopted.

Taking into consideration:

- the unavailability of a counterpart to be trained on the job and to support the associate expert in the several activities connected to the system building and computer programming;
- the necessity of expertise in computer system development and hardware specifications assessment;
- the heavy workload in light of the dimension of the project;
- the necessity to spend the Government budget allocated for equipment purchase (about K47,000) before the end of 1988:

the exigency for additional technical staff was identified. Hence the following were requested:

- a UN volunteer Computer Specialist to take over the software development, requested the 18th of March 1988, arrived the 3rd of June 1988;
- a Short term computer/information system expert, 3 month. requested the 9th of May 1988 arrived in October 1988.

Afterwards, due to the delay in the arrival of the short term expert to assist in the hardware requirements identification and in the system architecture design, on the 4th of July UNIDO was requested to activate the recruitment of an Associate Expert in informatics/data base administration to continue assistance in the information management system development.

At the same time due to the necessity of interim computer purchases, since the existing computer was not enough for current tasks, the hypothesis to look for international and local assistance in the hardware purchase was also determined.

II. INTERNAL SURVEY OF USERS NEEDS

This analysis of user needs (see questionnaire, ANNEX I) was undertaken from February to April 1988 with 38 questionnaires filled and returned by the professional officers of DTI.

It was aimed to provide a basis for designing, implementing and maintaining an information management system for the Department of Trade and Industry.

The result of such a survey has been integrated with direct interviews with the First Assistance Secretaries and the Assistant Secretaries of each Division/Branch of DTI.

For all the main activities of each branch, the workload and the computer requirements have been estimated.

The principal output is the description of the activities of each division/branch of DTI (see ANNEX II) in terms of:

- experience in personal Computing;
- links: internal/external;
- data sources;
- data used;
- data problems
- data needs
- workload

This analysis allowed to identify the requirements of DTI and to define a priority of the development of the overall system, determining software and hardware to purchase/develop in order to fit the requirements.

For all the information analysed: links, information sources, data used and needed, the degree of importance: HIGH, MEDIUM, and LOW have been evaluated according to the frequency of the answers in the questionnaire, and to the information gathered through interviews.

Therefore, from the aggregation of the expressed preferences/needs (HIGH = 3, MEDIUM = 2, LOW = 1) by each branch/division, the following ranking have been determined. The schedule of the system building followed this ranking of users needs, accordingly.

Type of data	aggregated need value	Ranking
Register of companies	17	1
PNG statistics	15	2
Project profiles	13	3
feasibility studies	12	4
trade regulation/agreements	12	4
technology information	11	6
tariff	11	6
international statistics	10	8
NIDA register of companies	10	8
Country reports	9	10
Register of exporters	8	11
NIDA applications	8	11
Commodities/production/prices	8	11
importing/distributing companies	8	11
data on local costs	7	15
tenders/sales information	6	16
standard regulation	3	17

The register of companies and the PNG statistics (Statistical Data Base), with the highest ranking score have been implemented in the initial phase. All the other required information is being incorporated in the IMS.

The components to be computerized in the IMS in order to satisfy the needs of DTI (real or latent) are the following:

- a statistical data base
- register of companies
- project profiles
- project appraisal
- word processing
- register of exporters
- clients data bases
- library management
- publishing
- statistics/mathematics/graphics facility

The relationship between DTI activities and the Information Management System is presented below.

POLICY, PLANNING AND INFORMATION DIVISION

main activities	Information System
formulate and co-ordinate trade and industry policies	SDB, FSDB, WP
international negotiations/agreements	SDB, CDB
information centre:	
publishing department publications	P, WP, CDB
data collection and analysis	ALL
library	LMP
disseminate statistics	P, WP, CDB
commodities reports	SDB, MSGP, WP
research	ALL
briefs	SDB, WP

For all abbreviations see page 2

REMARKS

The role of the Division within the Department is crucial because through its Statistics & Information Branch it is in charge of information dissemination.

In fact, such a unit acts as information centre for all matters concerning trade and industry.

The information management system should, consequently, be under the supervision of this Division which will be in charge of providing data both for DII and external clients and control the information flow.

The survey also shows that Policy Information and Planning Division has the highest degree of connection within DII and with other private/public national/international organizations.

The implementation of the information management system will enable to improve the service provided, in terms of speed and quality of data because with the IMS updating data is fast and easy, while now it is done on a manual basis. The implementation of the IMS will also enhance the processing capability, the management of the library and quality/quantity of publishing.

INDUSTRY DIVISION:**PROJECTS AND INDUSTRIAL PROMOTION BRANCH**

main activities	Information System
market analysis	SDB, WP
projects/financial analysis	PA, SDB, WP, FSDB
investors inquiries	WP, CDB, FSDB
screening of NIDA applications	SDB, RC
requests for Government assistance in tariff protection/import restrictions	SDB, CDB
investment agreements with other Governments	WP, FSDB
preparation of briefs and reports	WP, P, SDB, RC

For abbreviations see page 2.

REMARKS

This branch is strictly related with the business sector which is its primary client, so the IMS development will have significant impact on the quality of service provided.

Currently, with the introduction of the COMFAR, an evident strengthening of the capability to perform feasibility studies is occurring, and the use of the programme has to be extended to all the professional officers in the Branch.

On the other hand, difficulty of data availability will be solved by the introduction of the statistical data base and the project and feasibility studies data base.

The capability to keep records of the client is addressed to expedite most of the management problems also.

BUSINESS DEVELOPMENT BRANCH

main activities	Information System
bank loan and finance request	CDB, WP, SDB
cash flows and feasibility studies	PA, FSDB
companies registration/incorporation	CDB, WP, SDB, RC
training and preparation of training material	CDB, PUBLISHING, WP, RC
general business advice	SDB
co-operatives co-ordination	CDB, WP

For abbreviations see page 2.

Remarks

The role of the branch within the Department is in process of re-definition. In fact the ongoing project of setting up a Small Business Development Corporation (SBDC), foresees the creation of a body external to the Department.

The activities of this branch necessitate text and graphics high quality processing facilities and clients data bases.

Moreover, the calculation of balance sheets, cash flow tables, Internal Rate of Return and income statements can be solved by using COMFAR, but due to the specific needs of this branch a simplified version of COMFAR is under development. This uses UNIDO's based PROSPIN.

It is important to underline also the need for this branch to be tied up with the existing network of Small Business agencies/institutions which is based on Apple Macintosh systems.

TRADE DIVISION

TRADE PROMOTION BRANCH

main activities

Information System

PNG exporters assistance	
information dissemination	RE, RC, P, WP
market surveys	SDB
co-ordination of outgoing	
and incoming missions	WP, CDB
organization of seminars	WP, RE, RC, CDB
trade fairs	CDB
foreign importers advice	RC, SDB, WP
briefs, speeches	WP, SDB

For abbreviations see page 2.

REMARKS

The relevant relationship with foreign firms, foreign missions, traders, requires a high use of International data, primarily provided by International Organizations.

With respect to the IMS, the prompt availability of PNG import/export statistics incorporated in the Statistical Data Base will enhance the capability of providing information.

A computerized register of exporters, not yet realized, has to be implemented shortly, as well.

Additionally, the storage of information about trade regulation must be analysed.

TRADE CONTROL BRANCH

main activities	information System
issue import/export licenses	WP, RC, RE, CDB
coordinate and monitor protection regulation	CDB, RC, RE
trade control and commercial policies	WP, SDB

For abbreviations see page 2.

Remarks

Due to the limited use of statistical data, the major short term need for this branch is in setting up appropriate clients data base to keep record of all the import/export licenses issued and in word processing facilities.

STANDARD DIVISION

main activities	information System
measurements and testing	MSGP, WP
preparation of national standards	MSGP, WP
standards library	P, WP, LMP
disseminate information	P, WP, CDB
publishing standards news	P, WP, CDB
formulate policies in standards and quality control	RC, WP, SDB

For abbreviations see page 2.

Remarks

This Division has quite an independent role from DTI and the possibility to become autonomous is under study. The main areas where automation is needed, regard the STANDARDS library; mathematical/statistical/graphics analysis, technical drawings and the enhancement of publishing capability and quality.

MANAGEMENT SERVICES

main activities	information System
Department administration	WP
personnel management	CDB,
financial management	not defined
filing system	not defined

For abbreviations see page 2.

Remarks

The primary activities of this branch are: accounting, personal management, Department administration and filing system management. The financial management will be shortly computerized by using the FIMS: Financial Information Management System, developed by Finance & Planning Department. For this reason the use of the IMS is limited to: clients data bases, word processing and some basic spreadsheet applications.

The personnel management should also be analyzed in light of a possible computerization, and software packages available on the market have to be analysed. Moreover the Department of Prime Minister is currently working on a system for personal files (under an UN project) which might be usable by this Division.

The table presented below, summarizes the relation between needs of each branch and the information management system modules:

Branch/Module	SDB	FSDB	RC	PA	CDB	RE	LMP	MSGP	P	WP
Industrial policy	X	X	X		X			X		X
trade policy	X	X			X	X		X		X
information	X	X	X		X	X	X	X	X	X
trade promotion	X	X	X		X	X			X	X
trade control	X				X	X				X
investment Prom	X	X	X	X	X				X	X
business dvlp	X	X	X	X	X				X	X
standards			X		X		X	X	X	X
management					X					X

SDB = STATISTICAL DATABASE, FSDB = FEASIBILITY STUDIES DATABASE
 WP = WORD PROCESSING, P = PUBLISHING CDB = CLIENTS DATA BASE
 RC = REGISTER OF COMPANIES, RE = REGISTER OF EXPORTERS
 MSGP = MATHEMATICS/STATISTICS/GRAPHICS PACKAGE, LMP = LIBRARY
 MANAGEMENT PACKAGE, PA = PROJECT APPRAISAL.

IV. INFORMATION MANAGEMENT SYSTEM ARCHITECTURE

The status of development of the Information Management System is the following:

MODULES		STATUS
1)Statistical Data Base	SDP	available/in progress
2)Register of Companies	RC	available/to be upgraded
3)Feasibility Studies Data Base	FSDB	available/in progress
4)Projects Appraisal	PA	available
5)Word Processing	WP	to be purchased/extended
6)Register of Exporters	RE	to be computerized
7)Clients Data Bases	CDB	to be defined
8)Library Management Package	LMP	to be Purchased/dvlp
9)Publishing	P	to be purchased
10)Mathematics/Statistics/Graphics Package	MSGP	to be purchased
11)Financial Information Management System	FIMS	to be obtained from Finance & Planning Department

Furthermore, an information system administrator module will have to be developed to:

control the access to the system, by using passwords

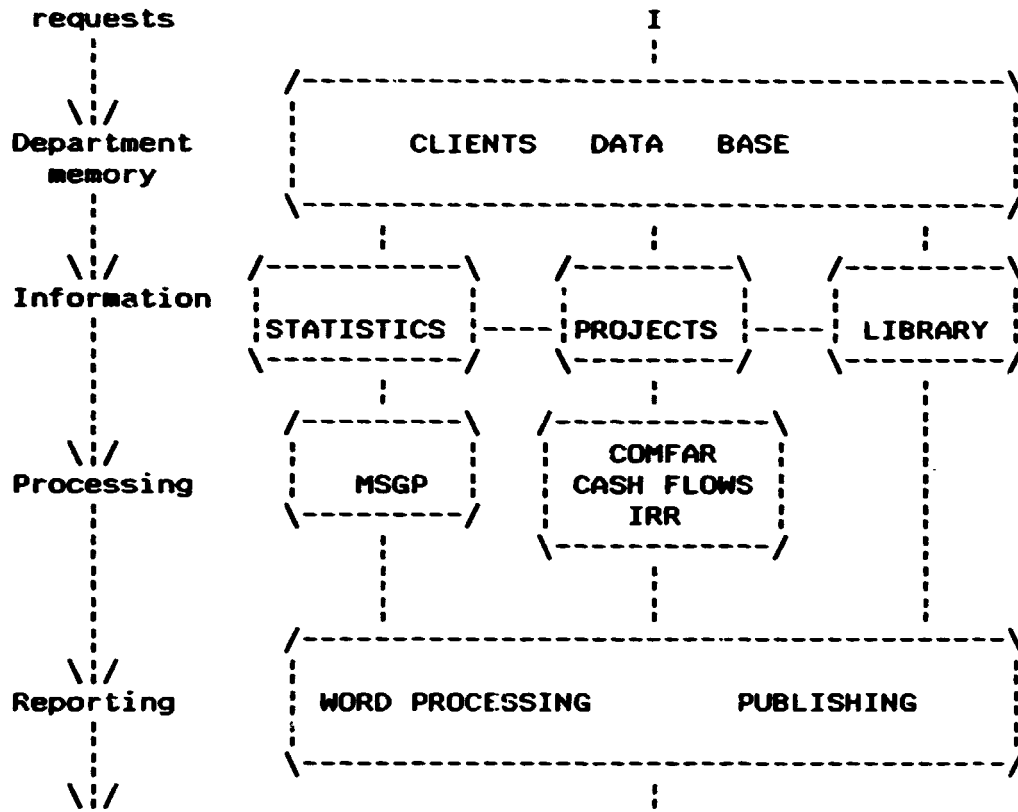
keep record of each transaction (name of requester, branch, acting officer, file used, time, etc.)

The latter will enable the information officer/data base administrator to determine why and where the system needs to be enhanced, and to optimize the allocation of the resources (computer operators, data entry, terminals, priorities etc.), taking into account the workload.

It is important to underline that the selected 'user-friendly' approach will enable DTI officers to use the system without previous expertise in Personal Computing.

In fact a "menu-guided" programme has been developed so the user can use the system following the instructions provided by the system step by step.

INFORMATION MANAGEMENT SYSTEM



INFORMATION

S
T
A
T
I
S
T
I
C
S

statistics at provincial level	import/export statistics	general economics figures
register of Companies	register of exporters	NIDA register

P
R
O
J
E
C
T
S

feasibility studies data base	projects profiles
-------------------------------	-------------------

III.1 Statistical Data Base (SD6)

The module contains three main group of data:

**Data Base at Provincial Level
Import/Export Statistics
General economics figures**

A detailed analysis of the activity of the Statistical unit in three months, clearly revealed that 2 officers are fully engaged in compiling tables from reports and prints out provided by NSO and from other sources.

Thus the exigency to have the data available on line in a computer as data base clearly arose in order to speed up the retrieval and processing time, with a remarkable impact on the quality of service as well.

The result of the analysis underlines that every month 80% of the data provided concerns **import/export statistics**, about 10% **manufacturing statistics** and the residual 10% regards **other general economics data and the register of companies**. The proportion between internal and external clients is 75% **within DTI** and 25% **outside**. The quota among Industry Division, Trade Division and Policy, Information and Planning Division is equally distributed. The duration of the services lie between 15 minutes and 4 hours with an average of **30 minutes**.

According to this result and to the necessity of having data available for the ongoing Industrial Potential Survey on the Highlands region, a priority was identified and the process of statistical data base building followed this order.

STATUS

At the present time the provincial data base has been established containing data for all the five Highlands provinces, the total for the Highlands region and the grand total for PNG. A verification of the input is in progress and is being carried out by the statistics & Information Branch.

The import/export statistics, supplied by the NSO, are the main type of data processed by the statistics & Information Branch of DTI, both for internal and external demand.

A data file concerning PNG exports in 1981 has been released by NSO and it has been successfully used to test the viability of transferring the data from the NSO mainframe to the DTI PC.

The success of the test allowed the acquisition of the export statistics. Import statistics will be incorporated in the Statistical Data Base shortly.

The general economics figures have a heterogeneous data structure.

Thus a way to generalize the format of the data bases has been worked out. Due to time constraints, and to the low priority of its usage, the related data base creation has been delayed and will be implemented in a future stage.

III.1.1 Provincial Data Base (PDB)

This module is being established by using the Highlands Industrial Potential Survey as a test case to define the data structure, to begin the software development to verify the specification, and to allow the UN Volunteer computer specialist to become familiar with DATA BASE III+ and with the system design.

At present, the data bases created regard:

- (1) Infrastructure
- (2) Natural resources
- (3) Social resources
- (4) Economic resources.

The following information has been recorded:

SUBJECT	INFORMATION
(1) Infrastructure:	
1.1 HOUSING	houses & flats commenced, completed, under construction value of houses & flats (commenced, compl., under constr.) value of other buildings (comm., compl., under constr.)
1.2 BANKS	number of bank branches
1.3 POST OFFICES	number of post offices: official and agency volume of mail: posted, delivered number of post boxes
1.4 POLICE STATIONS	number of police stations number of constables (actual & required)
1.5 HEALTH FACILITIES	hospitals, clinics, health centres/sub-centres, aid posts number of beds by health facility professional staff
1.6 TRANSPORT	road network: sealed & gravel no. of registered motor vehicles no. of car accidents by accident severity no. of airdromes by size and ownership flights, passengers movements in-out airfreight movements in-out

1.7 EDUCATION FACILITIES

no. of schools: primary, High schools, technical, vocational
staff by type of school

1.8 ENERGY FACILITIES

installed generating capacity: hydro/thermal
maximum demand
energy produced: hydro/thermal/purchased
energy sales: domestic, general, industrial
tariffs

1.9 WATER SUPPLY

access to piped water
consumption
% dwellings with access to piped water

1.10 COMMUNICATION FACILITIES

no. telephone installed: private, commercial

1.11 COMMERCIAL FACILITIES

no. of retails
no. of wholesales
storage facilities

(2) natural resources

2.1 LAND

area: commercial, industrial, residential,
area: physical characteristics

2.2 METALLIC MINERALS

mines: existing, new, potential

2.3 INDUSTRIAL MINERALS

production, potential

2.4 GAS, OIL

explorations, production, potential

2.5 FORESTRY

total plantations
estimated volume available
logs harvested
royalty paid
no. of sawmills

2.6 WATER RESOURCES

use, potential

2.7 CLIMATE

rainfalls, temperature

(3) social resources

3.1 POPULATION

population distribution by sex, by citizenship,
by sector (urban/rural), by age
migration
growth rates

3.2 ECONOMIC ACTIVITY

population distribution by economic activity, by sex

3.3 EDUCATION

enrollments by type of school
graduates by type of school

3.4 HEALTH

leading causes of morbidity and mortality by sex
infant/child mortality by sex
life expectancy

3.5 CRIMINALITY

data on crime, tribal fights

(4) economic resources

4.1 PRIMARY INDUSTRY

number of holdings: large, small
number of cattle
number of livestock
Number of employees
commodity production

4.2 MANUFACTURING

number of establishments by industry group
no. of employees by industry group, by sex
no. of working proprietors, office staff, factory workers
production, value added
output
salaries
material used in production
assets

4.3 SERVICES

commercial banks: lending and deposit
Agriculture Bank: Loan Applications, approvals, amount,
by sector
health expenditures
retail sales, other retail sales, total sales

DATA STRUCTURE

All the data bases have been developed using the same data structure in order to simplify and standardize all the programmes. In this way, changing programmes and linking files can be easily and quickly done.

Each file has the following format:

field 1	field 2	field3	field 4	.....	.....	.....
YEAR	PROVINCE	VARIABLE1	VARIABLE2	.....	.....	.....
1978	1	n11	n12	.....	.....	.....
1978	2	n21	n22	.....	.....	.....
1978	3	n31	n32	.....	.....	.....
-						
1979	1					
1979	2					
-						
1992	1					
1992	2					
-						
1992	k					

Currently the software developed allows one to:

UPDATE/EDIT each data base selecting range of years (1978-1992) and provinces (Eastern Highlands, Chimbu, Western Highlands, Enga, Southern Highlands, Total Highlands region and Total PNG).

LIST on the screen the data bases selecting range of years (1978-1992) and provinces (Eastern Highlands, Chimbu, Western Highlands, Enga, Southern Highlands, Total Highlands region and Total PNG).

PRINT OUT the data bases selecting range of years (1978-1992) and provinces (Eastern Highlands, Chimbu, Western Highlands, Enga, Southern Highlands, Total Highlands region and Total PNG).

EXTRACT/SAVE a subset of the data bases for processing (by using LOTUS, FRAMEWORK, SPSS and other software), selecting range of years (1978-1992) and provinces (Eastern Highlands, Chimbu, Western Highlands, Enga, Southern Highlands, Total Highlands region and Total PNG).

FURTHER DEVELOPMENT

Extend the data bases to the other provinces in PNG.

JOIN two or more data bases (up to 9) for processing (by using LOTUS, FRAMEWORK, SPSS etc.), selecting a common range of years (1976-1992) and provinces (Eastern Highlands, Chimbu, Western Highlands, Enga, Southern Highlands, Total Highlands region and Total PNG).

Include in the print out and list option the possibility to calculate percentages, ratios and growth rates.

print out a province/region report including the four groups of information

list the provincial codes (this information should be on line to identify the corresponding province to each code)

ENVIRONMENT

software: DATA BASE III+ (can be replaced by DATA BASE IV, when available or other data base packages)

hardware: IBM Compatible PC.

USERS

The statistics & Information Branch of DTI will continue to be in charge of the management of the module for maintenance, updating and processing. For the other branches at least one officer could be trained to use the system. It would be useful to organize courses on various spreadsheets programmes in order to enable users to easily process the data included in the statistical data base.

REMARKS

The provincial identification code currently used, must be modified according to the classification utilized by the NSO (see ANNEX III).

III.1.2 Import/Export Data Base

Due to a technical problem (NSO has a Honeywell mainframe not immediately compatible with the IBM PC AT of DTI) it has been necessary to make several trials to find a way to transfer the data via diskette.

A file concerning the PNG F.O.B. exports in 1981 has been used as a test to verify the possibility to transform a Honeywell file in an IBM file and it finally succeeded.

A general procedure to translate all the files and store them as

data bases in the available PC IBM AT, has been finalized. At moment all the files of PNG export from 1981 to 1987 have been transferred and recorded in the PC as Data Bases. The files of PNG import will be acquired shortly.

DATA STRUCTURE

All the import/export files have the ensuing structure

- Field 1:Port of entry/shipment code, numerical, 2 digits
- Field 2:SITC, Standard International Trade Classification Code. numerical, 6 digits
- field 3:Country of origin/destination code, alphabetical, 4 digits. NSO Classification code.
- Field 4:type of import/export code, alphabetical, 1 digit. To distinguish among exports, re-exports, non accountable exports.
- Field 5:Value of import/export, numerical, 9 digits. 3 decimals
- Field 6:Quantity of import/export, numerical, 9 digits. 2 decimals.

FURTHER DEVELOPMENT

The programme must allow one to:

LIST on the screen import/export statistics selecting range of years, commodity, port of entry/shipment, type of import/export, major trade partners, major commodity imported/exported.

PRINT-OUT import/export statistics selecting range of years, commodity, port of entry/shipment, type of import/export, major importers/exporters, major commodity imported/exported.

EXTRACT/SAVE a range of years, commodity, port of entry/shipment, type of import/export, major importers/exporters, major commodity imported/exported to be used with other software (LOTUS, SPSS, FRAMEWORK etc.) for processing.

Two additional field must also be created in order to easily group Countries of origin/destination and commodities:

Field 7:COUNTRY GROUP, numerical, 2 digits, e.g. 1 = EEC country.
2 = Major countries of import/export, South Pacific, etc.

Field 8:COMMODITY GROUP, , 2 digits, numerical, e.g. 1= major PNG commodity exported/imported,2= manufactures,3= agriculture etc.

ENVIRONMENT

software: DATA BASE III+

hardware: IBM Compatible PC

USERS

The Statistics & Information Branch is in charge of the management of the module.

III.1.3 General Economic Data Base

A priority list of data which is necessary to store in the computer, has been determined.

A general structure of the data bases has been also defined, grouping the statistics according to the most used break down variable: Country and Sector/Division/Economic Activity.

DATA STRUCTURE

break down variable = Country

YEAR	Country	GROUP	variable 1	variable 2
1978	Aus	1		
1978	Jap	1		
1978	..			
1978	..			
.				
1978	TOTAL			
.				
.				
1988	Aus	1		
.				
.				
1988	TOTAL			

* COUNTRY and GROUP variables are the same used in the import/export statistics

Break down variable = economic activity

YEAR	ECONOMIC ACTIVITY	SECTOR	variable 1	variable 2 ...
1978	agriculture	14	100	
1978	textile	34	97	
.				
.				
1978	TOTAL		2390	
.				
.				
1988	agriculture	14	110	
.	textile	34	98	
.				
.				
1988	TOTAL		3102	

- * the economic activity break down variable must be created according to all the possible classifications, e.g. agriculture, agriculture and forestry, agriculture and forestry and fishery, etc.

GROUP A: COUNTRY

1. Foreign Direct Investment in PNG by country of origin.
2. Investment Income Payable Overseas by Papua New Guinean Enterprises by Investing Country
3. GDP by Country
4. GDP by per capita by Country

GROUP B: INDUSTRY/SECTION/DIVISION/ECONOMIC ACTIVITY

1. Foreign Direct Investment in PNG by Sector
2. Investment Income Payable Overseas By Papua New Guinean Enterprises by Industry
3. Private Capital expenditure by Industry Group
4. GDP by kind of economic activity at current prices
5. Change in the structure of employment by sector
7. Agriculture Bank. New and increased lending by industry
8. Agriculture Bank. Percentage of Loan Approval captured by selected major industry
9. Commercial Banking buildings: classification of advanced by industry
10. Commercial Banks: Deposit by industry
11. Money raising workforce by industry group
12. Total employment by economic sector, sex, citizenship

GROUP C: OTHERS

1. Balance of Payments
2. International Reserves
3. Foreign Exchange Rates
4. Manufactured value Added and its share in the GDP (Market Component). (1969-1983) Current Prices
5. Cost Structure of the Gross Domestic Product (current prices) (1968-1985)
6. GDP at Constant Value of 1977 (Market Component) (1973 - 1984)
7. GDP by type of expenditure at constant prices of 1972-1973 (1972-1977)
8. GDP by type of expenditure at constant price of 1977 (1977 - 1984)
9. GDP by type of expenditure at current prices (1968-1984)
10. Minimum weekly wage of General labourers. (1980-1985)
11. Minimum weekly wage by class of workers and level of urban centre. (1981-1985)
12. Labour Force, Labour Force Participation Rate (1971 - 1980)

13. Money-Raising Workforce by Occupation Group
Citizenship and Sex (1966, 1971, 1980)
14. Hours of work per week in non-agricultural activities
(1974-1983)
15. Hours of work per week in manufacturing (1974-1983)
16. Skilled Employment by Education and Citizenship
(1979, 1982, 1984)
17. Citizen Population (10 years and over) by Economic
activity in Rural Village, Rural Non-village and
Urban Sectors 1980
18. Number of Emigrants and Immigrants by sex (1975-1984)
19. Central Government Fiscal Operations (1979 - 1986)
20. Production of Livestock Products (Large holdings)
(1970-82)
21. Annual catch of Main Fishery Products (1970-84)
22. Area and Production of other selected crops (large
holdings) (1975-1982)
23. Application of Fertilizer on large holdings (1975-
1982)
24. Timber Production - (1971-1979)
25. Bougainville Copper Limited, Copper Concentrate Production
(1984-1987)
26. Consumer Price Index by Expenditure Group, Base Year
1977 (1977 - 1986)
27. Consumer Price Index by Urban Areas, Base Year 1977
(1977 - 1986)
28. Registered Motor Vehicles, by Vehicle type (1972-1981)
30. Registrations of New Motor Vehicles by Vehicle type
(1972-1984)
31. Gulf Freight Rates
32. Main Port Freight Rates
33. Schedule of Main Port Distances
34. Overseas Cargo Statistics (1977 - 1985)
35. Overseas Cargo handled at Principal Ports, by Ports of
Entry/shipment (1977 - 1985)
36. Overseas Cargo handled at Principal Ports, by Origin/
Destination (1978 - 1985)
37. Passengers Carried Main Port to Main Port (1980 - 1984)
38. Cargo handled, main port to Main Port (1980 - 1984)

ENVIRONMENT

software: DATA BASE III+ or other data base programmes

hardware: IBM Compatible PC

USERS

Statistics & Information Branch.

III.2 Register of Companies (RC)

The register of companies existing in 1986, was provided by

NSO at the beginning of March 1988, after long and difficult negotiation.

In fact, at that time, the National Statistician was just leaving and it was difficult to find a person to authorize the release of the data.

Furthermore, we had to demonstrate that the data could be released according to the National Statistics Act, without any violation of the confidentiality requirement.

Due to the incompatibility between Honeywell and IBM (at that time NSO was not willing to try a simple way to translate the file to the IBM format) the data was provided in Honeywell format in an 8 inch diskette, so Honeywell agency in Port Moresby performed the translation (charging K 200.00 for the service). Unfortunately, even if different arrangements had been made previously, the release of data regarding the number of employees for each establishment was delayed to few weeks later and data was provided in a print out format. An input programme in DATA BASE III+ language was developed, but, due to the unavailability of the Computer and of a data entry person, only half of the data of number of employees is now stored in the computer.

It is important to underline that the Register of Companies cover about 80-90% of the existing companies only and that the establishment are classified using a 3-digits code while normally NSO uses a more detailed one with 4-digits.

DATA STRUCTURE

The file has the following structure:

- Field 1: NSO internal code, numerical, 8 digits,
- field 2: Name of the establishment, alphabetical, 60 digits,
- field 3: address of the establishment
- field 4: brief description of the activity, alphabetical, 25 digits
- field 5: PNG Industrial Classification Code (based on the PNGSIC code), numerical, 3 digits
- field 6: Province code, numerical, 2 digits (see ANNEX VII)
- field 7: town code, numerical, 2 digits (see ANNEX VII)
- field 8: Name of the enterprise where the establishment belongs to, alphabetical, 60 digits
- field 9: address of the enterprise, alphabetical, 25 digits

Currently is possible to:

UPDATE all the existing records and insert new ones;

LIST on the screen all establishments by province of location, industrial code, town. .

PRINT OUT the establishments selecting: province of location, industrial code, town

EXTRACT/SAVE a set of records selecting: province of location, industrial code, town.

FURTHER DEVELOPMENT

Two more fields have to be added:

field10:

SECTOR, created via programme, corresponding to the major division (NSO Industrial classification), numerical, 2 digits, to easily select groups of companies: e.g. manufactures, services, agricultural etc.

field11:

year of data released. In this way, if a company is not included in a later register it will be considered dead and the listing will not include it, in order to trace the change over time in the population of the companies in PNG to record which year the data refer to.

With this new fields will be possible to select enterprises by:

- sub-sector, which corresponds to the Division in the PNGSIC classification (2 digits);
- year of activity of the establishment.

An important future action is to acquire new register of companies from the NSO every year, directly in IBM format and including the number of employees.

Moreover, would be useful to investigate the opportunity to obtain information on existing establishments from private Companies, Chamber of Commerce, Commercial Banks, etc.

ENVIRONMENT

software: DATA BASE III+

hardware: IBM Compatible PC

USERS

Statistics & Information Branch.

REMARKS

The possibility to obtain the data for the new companies registered by the Registrar General Office (RGO) has been also taken into consideration but it was not viable because:

- RGO does not have any sort of computer system
- RGO classifies the industry branch using classification which is different from the standard one (PNGSIC)
- We verify that quite often the classification is not done properly
- RGO does not have record of the enterprises that are not

- anymore operating
- RGO usually does not keep record of the location of the establishment and of the number of employees.
- NSO is the official source for this information.

The users needs analysis has also highlighted the necessity to have in the Register of companies information about incorporated companies, e.g. foreign owned companies. This information is with the National Investment & Development Authority (NIDA) which is a component of DTI, and several attempts have been made in order to acquire their data base, but at this stage the problem has not been solved for technical reasons.

Notwithstanding, taking into account that:

- the information is often out of date
- a survey to update the NIDA register (see ANNEX VIII) is proceeding but the result is not available yet

it seems convenient to wait until the end of the survey before seeking to obtain the data base via diskette and include it in the information management system. Otherwise could be useful to request direct access to the NIDA data base via terminals.

III.3 Feasibility Studies Data Base (FSDB)

In order to allow the Department to have easy access to all the feasibility studies that have been performed in the past and to those that are in progress, currently scattered in many branches/Departments, a data base has been defined.

The establishment of this module will enable the officers to provide prompt and fast information to potential investors about new and ongoing projects.

An input sheet has been prepared accordingly (see ANNEX IV), so from each report key information can be extracted and stored in the computer.

Approximately 40 reports have been currently analyzed and the input sheets filled. A few are already available in the data base to test the programme.

DATA STRUCTURE

The information recorded are the following:

field 1: internal code, it is a sequential code assigned via programme to every new project recorded.

field 2: date of input.

field 3: Finance and Planning project identification code

field 4: restricted/open: 0 = not restricted or confidential, 1 = restricted or confidential, 2 = strictly confidential.

field 5: Title of the report.

field 6: Standard International Trade Classification code

field 7: International Standard Industrial Classification code

field 8: Province of project location

field 9:Province code (NSO classification)
field10:Town of project location
field11:Object and Activity of the project
field12:Date study made
field13:Agency funding the study
field14:Local Company sponsor name
field15:Consultant
field16:Agency funding the project
field17:date of start of the project
field18:project sales at full production: Currency
field19:project sales at full production: Value
field20:project sales at full production: Unit of measure
field21:project sales at full production: Quantity
field22:Capital cost
field23:Fixed and working capital investment
field24:Manpower at full production
field25:Study recommendations
field26>Status at certain date: Date
field27>Status at certain date: Status
field28:location of document
field29:Institution/Dept./Branch responsible
field30>Contact name

Currently it is possible to:

UPDATE/EDIT all the existing records and insert new ones:

LIST all the feasibility studies selecting among a set of possible formats: by province of location, industrial code, trade code, status, restricted/open, location of document, etc.

PRINT OUT all the feasibility studies according to a pre-defined set of formats, selecting: province of location, industrial code, trade code, status, restricted/open, location of document, etc.

EXTRACT/SAVE a set of records selecting: province of location, industrial code, trade code, status, restricted/open, location of document, etc. to be processed with other software.

ENVIRONMENT

software: DATA BASE III+

Hardware: IBM Compatible PC

USERS

The system should be managed jointly by the statistics & Information Branch and the Project and Investment Promotion branch.

The former will be in charge of the maintenance and input while the latter in charge of the input sheets compilation and of the

relation with clients.

The information contained in the data base could be classified 'CONFIDENTIAL', thus the information system administrator module should consent access to a restricted group of officers only.

REMARKS

A background paper prepared by Mr. Edwards (acting/CTA) is attached (see ANNEX V) to further develop this module and include projects profiles.

III.4 PROJECT APPRAISAL (PA)

This module uses COMFAR: the package for project appraisal developed by UNIDO. It is available and the Associate Expert in Project Analysis is in charge of training the DTI officers in using the package.

ENVIRONMENT

software: COMFAR

Hardware: IBM Compatible PC

USERS

Projects and investment promotion branch and Business Development Branch.

FURTHER DEVELOPMENT

Due to the necessity to have a simple version of COMFAR by the Business Development Branch, the Associate Expert Project Analyst is developing a computer programme to calculate: balance sheets, cash flow tables, internal Rate of Return and income statements. The programme will be written in LOTUS 123 and in EXCEL in order to be used both in an IBM and in a Apple Macintosh environment. A new similar model, PROSPIN version 2.0 which is Lotus 123 based will be tested, mainly for smaller projects.

III.5 Word processing (WP)

Like all the information management systems, the word processing activity is of relevant importance, and involve all the branches of DTI and is mainly aimed to greatly improve typing productivity.

Moreover with the availability of:

- CHECK SPELLING;
- WORD FINDER to suggest SYNONYMS

the quality of documents will be improved and the phase of editing and correction will be reduced.

It is very important to choose one word processor in order to

standardize the document format and to facilitate the internal flow of information.

The Word Processing should be linked with the desk top publishing and with clients data base in order to define an office automation structure.

ENVIRONMENT

software: WORDSTAR, Framework, or other word processors.

hardware: IBM Compatible PC

USERS

All the Branches

III.6 Register of Exporters (RE)

The Trade division publishes yearly a directory of exporters, which is crucial promotional material for national and foreign traders.

The list of exporters is currently compiled manually and it takes a long time to process and update it. The plan is to computerize the register in order to improve the capability to provide information promptly.

It seems appropriate to incorporate the information if a company exports or not to the existing register of companies data base also, but the NSO does not collect data on exporters on a regular basis.

FURTHER DEVELOPMENT

An initial improvement could be achieved creating a data base with the information already available, and afterward try to reach an agreement with NSO to include data on exporters in the annual survey of the companies.

DATA STRUCTURE

field 1: internal code, numerical, 4 digits
field 2: name of the company, alphabetical, 60 digits
field 3: address, alphabetical, 30 digits
field 4: town code
field 5: province code
field 6: telephone number
field 7: telex number
field 8: fax number
field 9: brief description of activity
field 10: PNGSIC code, Division, 2 digits
field 11: SITC code
field 12: main country of export
field 13-20: other exporting countries
field 21: date of entry (in the data base)

the software will allow one to :

UPDATE/EDIT and edit each record

LIST on the screen companies according to a selected province, trade or industrial code, or Country of export.

PRINT OUT list of companies and mail address labels according to a selected province, trade or industrial code, Country of export.

ENVIRONMENT

software: DATA BASE III+/other packages

hardware: IBM Compatible PC

USERS

Statistics & Information Branch and Trade division

REMARKS

A questionnaire to carry out a survey on the exporting companies in order to create a data base on export was designed on a request from the Trade Division (see ANNEX VI).

Due to shortage of resources and the limited time available the survey has not yet taken place. It is advisable to carry out the survey to gather more detailed information about exporters and improve the quality of the IMS.

III.7 Clients Data Base (CDB)

The results of the users needs analysis, points out that an important step towards the computerization of the DTI activities/office automation is to optimize the record keeping of the clients in order to create a "Department Memory", useful to keep track of the clients requests of assistance, for creating a mailing list and for optimizing the resources allocation according to the workload.

a preliminary list of data bases is presented below:

1. Government Institutions:

Departments: Address, Phone, Telex and Fax
name of the First Assistance Secretaries and
Assistance Secretaries

Provincial Governments:Address, Phone, Telex and Fax
name of the First Assistance Secretaries and
Assistance Secretaries

2. Foreign missions in PNG

3. Trade and promotion organizations
4. Trade fair authorities
5. Volunteer associations
6. Small Business associations
7. International Organizations

For all the above, Address, Phone number, telex, Fax and name of the contact have to be identified.

FURTHER DEVELOPMENT

The complete list of all the clients data bases has not been prepared yet and it is an important step for the further development of the IMS.

For clients book-keeping, each branch should define a set of information to be recorded for each client. An example of the general structure could be the following:

GROUP 1: general information:

field 1: name of client
 field 2: name of company
 field 3: address
 field 4: Phone number
 field 5: Telex number
 field 6: fax number
 field 7: province
 field 8: country
 field 9: economic activity code (PNGSIC Division classification. 2 digits)
 field 10: date of input
 field 11: type of contact: telephone
 field 12: type of contact: letter
 field 13: type of contact: visit

GROUP 2: number of requests for each type of service, to be updated at each new contact:

field x1: service requested:	statistical data
field x2: service requested:	tariff protection
field x3: service requested:	loan application
field x4: service requested:	investment project
field x5: service requested:	feasibility study
field x6: service requested:	trade promotion
field x7: service requested:	export advice
field x8: service requested:	company registration
field x9: service requested:	export license
field xx: service requested:	other

GROUP 3: number of contacts by branch contacted, to be updated at each new contact:

fieldz1: name of the branch contacted: Industrial Policy
fieldz2: name of the branch contacted: trade policy

.
.
.
.

fieldzz: name of the branch contacted: standard control

GROUP 4: specific data needed by each branch

fieldy1: amount of loan request

.
.

fieldyy: import/export licenses

In order to create the data base it is necessary to define an exhaustive list of the possible services requested and create a field for each of type of request, as well as for the group 4 of specific needs of each branch.

The programme should allow one to:

UPDATE and edit data on clients and **CHECK** if the client is already in the data base. In this case update the type of contact, the type of service and the branch contacted.

LIST on the screen name and address of clients, selecting: branch contacted, service requested, type of contact, economic activity, province, country.

PRINT OUT a selected list of clients and the label for mailing purposes selecting: branch contacted, service requested, type of contact, economic activity, province, country.

CALCULATE the number of requests by client, by type of request by branch contacted, and by economic activity of the clients by province, by Country, within a selected lag.

Example:

Day 1:

Mr. XYZ

Company: IMPRESA pty. Ltd.

type of contact: visit

type of service: loan application

branch contacted: Business Development

The contacted officer should insert this data on the computer.

STEP 1:the programme search if the name of the company or the name of the clients already exists in the data base

IF not exists (as in this example) THEN enter all the "general information" (appropriate forms should be readily available.

ELSE Field type of contact: visit add 1
field type of service:loan application: add 1
field branch contacted:Business Development: add 1

Day 2:

Mr. XYZ
Company: IMPRESA Pty. Ltd.

type of contact: visit
type of service: feasibility study
branch contacted: Business Development

STEP 1:the programme search if the name of the company or the name of the clients already exists in the data base

IF not exists THEN enter all the "general information"

in this example the name already exists

THEN Field type of contact: visit add 1
field type of service: feasibility study: add 1
field branch contacted:Business Development: add 1

ENVIRONMENT

software: Data base programme

hardware: IBM Compatible PC

USERS

all the branches. under the responsibility of the Statistics & Information Branch.

III.8 Library Management Package (LMP)

There are two libraries in the Department:

DTI library
STANDARDS library

Nowadays, the management of both libraries is handled manually with a card index system. Problems regarding borrowing, lending, and inventory often arise.

A preliminary list of the information to be included in the

module is presented below.

1. CLASSIFICATION OF DOCUMENTS

1. Classification Code
2. Title
3. Author or Responsible body
4. Publisher
5. Place of publication
6. Year of publication
7. Subject category
8. Type of document i.e. book, report, feasibility study, etc.
9. Cost
10. Keywords

2. PERIODICALS

1. Classification Code
2. Title
3. Subject category
4. Supplier and address
5. Frequency
6. Cost
7. Date subscription end

3. VIDEOS

1. Classification Code
2. Title
3. Subject
4. Sponsor
5. Length (Time)
6. Supplier
7. Address
8. Cost
9. Date required

4. BORROWING SYSTEM

1. Name of borrower
2. Branch/Department
3. Contact Number
4. Classification Code
5. Date borrowed
6. Date due

5. INFORMATION SOURCES

1. Name
2. Address
3. Telephone number
4. Telex
5. Fax
6. Subject classification

ENVIRONMENT

software: Library Management Package, or DATA BASE III+, or other Data Base developing programmes

hardware: not defined

USERS

Librarian of each Library

REMARKS

Some general programmes for library management are available on the market. Alternatively, by using a base programme (like DATA BASE III+) would be possible to create an ad-hoc programme. A test of the available programmes for library management have to be done and subsequently evaluate the need for developing software in house.

III.9 Publishing (P)

One of the main activities of the Department is to disseminate information among potential investors, businessmen and exporters. At the moment the publishing activity is done through the National Printing Office, and usually it takes 1-2 months to print issues.

Taking into account the availability of 'desk top publishing' micro computers at relatively cheap prices, with high quality performances, the purchase of such a system would be an optimal solution for the Department.

ENVIRONMENT

software: Page maker, other

hardware: Apple Macintosh, other

USERS

All the branches under the assistance of the Statistics & Information Branch and the librarians,

III.10 Mathematics/Statistics/Graphics Package (MSGP)

The information unit of DTI and the Standard division activity require a module to process numerical data.

The former is presently using LOTUS 123 and a borrowed copy of the powerful statistical package SPSS/PC+.

On the other hand, the Standard Division, because of shortage of computer skilled officers at present rely on simple calculators.

The optimal solution would be to purchase a statistical package that could read DATA BASE III+ format files like as SPSS or S.S

a mathematics package and a graphics package.

the statistics package should mainly contain the following procedures:

- cross tables
- basic statistics (mean, standard deviation, min, max, conditional means, etc.)
- regression analysis
- time series analysis
- forecasting
- analysis of variance (quality control analysis)

the mathematics package should mainly support function analysis, integration, etc.

Graphics facilities are usually incorporated in spread-sheets and in mathematics/statistics packages, however a specific graphics package should be purchased as well.

ENVIRONMENT

software: Statistical Package and mathematics package

hardware: IBM Compatible PC

USERS

Information & Statistics Branch, and Standard Division

III.11 Example of IMS usage

As above underlined the IMS has been built using a "menu-guided" approach. The example presented below is aimed to explain how the IMS works.

OBJECTIVE:

- select one file in the Provincial Data Base;
- update the file;
- display the file on the screen;
- print out the file;
- save a portion of the file for further analysis with a spread sheet programme or with a statistical package.

As the programme starts an explanatory note is displayed and after the programme display the MAIN MENU:

INFORMATION MANAGEMENT SYSTEM

Department of Trade and Industry

MAIN MENU

- | | |
|--------------------------|-------------------------------------|
| 1. Provincial Data Base | 4. PNG export statistics |
| 2. Register of Companies | 5. Projects and Feasibility studies |
| 3. PNG Import statistics | 6. COMFAR |

select (1...6, 7 for exit) _

for example the user selects the provincial data base typing 1
THEN the programme goes to the FOLLOWING MENU:

date: dd/mm/yy

time

Provincial Data Base

1. Infrastructure
2. natural resources
3. social resources
4. economic resources
5. exit

select (1...5) _____

the user can go back to MAIN MENU selecting 5 or choose one of the four types of statistics.
for example the user selects **economic resources** typing 4
At this stage the user looks for all the data classified as **economic resources** in order to choose one file for analysis.

FOLLOWING MENU

PROVINCIAL DATA BASE

ECONOMIC RESOURCES

LIST OF FILES

file name	Description	Availability	source
3	coffee large/small holdings, production, area, tea product. employees. labor cost, cattle	1980-83	NSO
4	manufacturing establishments by division and workshops	1980-85	NSO
5	manufacturing employees by sex. type and salary and wages	1975-83	NSO

enter your file name _____

or press "esc" to go back to the previous MENU or "enter" to display other data available

For example the user chooses the file containing data on **manufacturing employees** typing 4.

FOLLOWING MENU

PROVINCIAL DATA BASE

economic resources

1. display the file
2. update the data records
3. write a report
4. extract/save the file
5. exit the system

select (1..5) _____

CASE 1: the user can UPDATE the file manufacturing employees
typing 1

FOLLOWING MENU: selection of range of years and range of
provinces

AVAILABLE YEAR FOR PROVINCE: 1978-83

AVAILABLE YEAR FOR PNG: 1978-83

Select year to start to update _____

Select year to end to update _____

Which Province do you want to start _____

Which Province do you want to end _____

It is correct? (Y/N) _____

if the user types 0 for the initial year and for the province,
the programme will display the data for editing, starting from
the first year: 1978 and from the province 1: EASTERN HIGHLANDS.

For example the user want to entry data for the year 1988 for the
total of PNG (7 in the present province classification code)
typing 1988 and 7.

THEN the user will input the data and the programme will store
the information in the file 4: manufacturing employees.

CASE 2:REPORT: the user wants to print out the file.

FOLLOWING MENU:selection of range of years and range of
provinces (as above)

CASE 3:DISPLAY: the user wants to display the file on the screen.

FOLLOWING MENU:selection of range of years and range of
provinces (as above)

CASE 4:EXTRACT/SAVE: the user wants to extract a subset of the
file and save it in the hard disk or in a floppy disk to be
further analysed by using a spread sheet programme or a
statistical programme.

V. HARDWARE REQUIREMENTS AND JUSTIFICATIONS

An IBM AT with 30 Megabytes hard disk and a IBM wide carriage PRO printer are available.

At the present status 2 other IBM compatibles, 2 Apple Macintosh and printers have been requested (see ANNEX VII and VIII).

However the minimal requirements for the IMS are:

1. a network/multi-user system

to support:

the Statistical data base
COMFAR

Projects and feasibility studies data base
statistics/mathematics/graphics module
register of companies
register of exporters

with:

6-8 Personal Computers/terminals
1 high speed printer
1 high quality printer
1 large storage facility (100 Mb)
1 files back up facility
1 back up power system
1 surge protector system

2. a desk top publishing system

to support:

publication of newsletters
publication of promotional material
technical drawings

with:

4 personal computers/terminals
1 laser printer
1 scanner
1 dot matrix printer (optional)
1 files back up facility
1 surge protector

The library management system, the word processing system, and the clients data base should be integrated with system 1.

The current idea is to use IBM compatible for system 1 and Apple Macintosh for system 2.

In order to create a standard environment, it seems advisable to implement the Clients Data base, the word processing and the library management modules in IBM environment.

The alternative to use Apple Macintosh systems for these modules have to be carefully explored. In fact the viability to exchange information between IBM and Apple must be verified.

The software to be initially purchased concerns:

- a multi-users DATA BASE package: DBASE III+, DBASE IV, FOX Base Plus

DBASE III+ has been used to develop the Statistical Data Base and the Projects and Feasibility Data Base, therefore it seems convenient to continue software development in the same environment.

- a WORD PROCESSING package: WORDSTAR

Taking into consideration that the word processor currently available uses an old version of WORDSTAR, and the lack of experience in word processing, it seems appropriate to adopt the same package for word processing.

- an electronic SPREADSHEET: LOTUS 123

LOTUS 123 is currently used by the Statistical Unit of DTI and an introductory course on the use of this package has already taken place in the Department under UNIDO assistance. Therefore the introduction of a different package has to be analysed carefully.

- a STATISTICAL package: SPSS/PC+, SAS

- a GRAPHICS package: not defined

graphics packages should be purchased for both system 1 and system 2.

ANNEX I

SURVEY OF USER NEEDS

No. _____

Name _____

Position _____ Branch _____

Duties _____

1) Do you interface with?

a) Other officers within the same division _____

b) Other officers within the DTI _____

c) Other Government Institutions _____

d) International Institutions _____

e) Private Companies _____

f) Other _____

2) Where do you get the data you need?

a) From the library of the Department _____

b) From other libraries _____

c) From the statistical Unit of the DTI _____

d) Other _____

3) Statistical sources

- a) PNG statistics _____
- b) International Organization statistics _____
- c) Magazines, newspapers, bulletins etc. _____
- d) Personal contacts _____
- e) Other _____

4. Do you have problems in gathering data?

- a) not available _____
- b) not up-dated _____
- c) not accurate _____
- d) not easy access _____
- e) high time spending _____
- f) other _____

5. What kind of information you need is not available from the library?

6. Do you

- a) use library and check the books _____
- b) need help in literature researches _____
- c) request other help _____
- d) if so, what? _____

7) What do you use the data for?

8) Do you have a statistical background?

Basic _____ Advanced _____ None _____

9) What kind of elaboration do you make ?

- a) percentages, ratios, indexes _____
- b) calculation of basic statistics _____
- c) calculation of advanced statistics _____
- d) tables _____
- e) graphs _____
- f) estimates _____
- g) forecasting _____
- h) other _____

10) What do you think an Information System includes:

- a) data base _____
- b) project evaluation model _____
- c) statistical package _____
- d) decision making models _____
- e) word processor _____
- f) companies register _____
- g) planning models _____
- h) department administration support _____
- i) other _____

11) In which field do you think an Information System can be useful for the DII?

- a) project evaluation _____
 - b) economic analysis _____
 - c) management _____
 - d) investment promotion _____
 - e) trade promotion _____
 - f) forecasting _____
 - g) quantitative analysis _____
 - h) decision making _____
 - i) reporting _____
 - j) office automation _____
 - k) planning _____
 - l) information retrieval _____
 - m) Other _____
- _____
- _____

ANNEX II

ANALYSIS OF USERS NEEDS:
DESCRIPTION OF DTI ACTIVITIES

a) POLICY INFORMATION AND PLANNING DIVISION

- a1) INDUSTRIAL POLICY BRANCH
- a2) TRADE POLICY BRANCH
- a3) INFORMATION AND STATISTICS BRANCH

officers with personal computing experience

	no.
WORDSTAR	2
LOTUS	2
FRAMEWORK	
DATA BASE III+	1
COMFAP	
OTHER SPREADSHEETS	
OTHER WORD PROCESSORS	
OTHER DATA BASES	

links:

within DTI	HIGH
other departments	HIGH
NSO	HIGH
Provincial Govt.	MEDIUM
international organization	HIGH
foreign missions/volunteers	
associations	HIGH
private companies	HIGH
research inst., labs	MEDIUM
PNG missions overseas	MEDIUM

sources:

DTI library	HIGH
other libraries	HIGH
statistics unit of DTI	HIGH
other Govt. Institutions	HIGH
International Organizations	HIGH
private companies	LOW
own records	LOW
trade commissions	HIGH
Chambers of commerce	LOW

data used:

PNG statistics	HIGH
International statistics	HIGH
bulletins, magazines etc.	HIGH
data on business sector	HIGH
trade regulations	HIGH
research documents	HIGH

data problems:

not available	LOW
not accurate	HIGH
not easy access	LOW
not updated	LOW

data needs:

PNG statistics	HIGH
Register of Companies	HIGH
Register of exporters	MEDIUM
country reports	HIGH
project profiles	HIGH
feasibility studies	HIGH
trade agreements/regulations	HIGH
International statistics	HIGH
NIDA register of foreign companies	LOW
commodities production/prices	HIGH
technology information	MEDIUM
Tariffs	MEDIUM
Data on local costs	LOW

main activities	no. per year	time
formulate and co-ordinate trade and industry policies	all year	
international negotiations/agreements	3	2 months
information centre:		
publishing department publications	4	2 months
data collection and analysis	all year	
library	all year	
disseminate statistics	all year	
commodities reports	12	1 week
research	all year	
briefs	all year	

b) INDUSTRY DIVISION

b1) PROJECTS AND INVESTMENT PROMOTION BRANCH

officers with personal computing experience

	no.
WORDSTAR	
LOTUS	2
COMFAR	

links:

within DTI	HIGH
other departments	HIGH
Provincial Govt.	LOW
international organization	MEDIUM
foreign missions/volunteers	
associations	HIGH
private companies	HIGH
research inst., labs	LOW

sources:

DTI library	MEDIUM
other libraries	LOW
statistics unit of DTI	HIGH
other Govt. Institutions	HIGH
private companies	HIGH
trade commissions	MEDIUM
own records	LOW
Chambers of Commerce	LOW

data used:

PNG statistics	HIGH
International statistics	LOW
bulletins, magazines etc.	HIGH
data on business sector	HIGH
trade regulations	LOW
data problems:	

not available	HIGH
not updated	HIGH

data needs:

PNG statistics	HIGH
Register of Companies	HIGH
country reports	MEDIUM
project profiles	HIGH
feasibility studies	HIGH
trade agreements/regulations	MEDIUM
International statistics	LOW

NIDA applications (accepted /rejected)	HIGH
NIDA register of companies	HIGH
commodities production/prices	LOW
technology information	HIGH
importing/distributing companies	LOW
tariffs	MEDIUM
data on local costs (electricity, transport, etc.)	HIGH
tenders/sales information	MEDIUM

main activities	no. per year	time
market analysis	4/5	1week-3/4months
projects/financial analysis	5/10	1week-1/2months
investors inquiries	N/A	
screening of NIDA applications	150	1week-1/2months
requests for Government assistance in tariff protection/import restrictions	50	1/2days
investment agreements with Governments	N/A	
preparation of briefs and reports	80	1/2days

B2/ BUSINESS DEVELOPMENT BRANCH

officers with personal computing experience

	no.
COMFAR	1
OTHER SPREADSHEETS	1
OTHER WORD PROCESSORS	1

equipment

typewriters	1
word processors	1 shared
personal computers	1 shared
fax machine	1 shared
copy machine	1 shared

links:

within DTI	HIGH
other departments	MEDIUM
Provincial Govt.	HIGH
international organization	LOW
foreign missions/volunteers associations	HIGH
private companies	HIGH

sources:

DTI library	LOW
other libraries	LOW
statistics unit of DTI	MEDIUM
other Govt. Institutions	LOW
International Organizations	LOW
private companies	HIGH
own records	HIGH
Chambers of commerce	LOW
Provincial Commerce Divisions	HIGH

data used:

PNG statistics	LOW
bulletins, magazines etc.	LOW
data on business sector	HIGH

data problems:

not available	HIGH
not reliable	HIGH
knowledge of sources/location	HIGH

data needs:

PNG statistics	MEDIUM
Register of Companies	HIGH
project profiles	HIGH
feasibility studies	HIGH
NIDA applications (accepted /rejected)	HIGH
NIDA register of companies	HIGH
technology information	LOW
importing/distributing companies	LOW
tariffs	LOW
data on local costs (electricity, transport, etc.)	HIGH

main activities	no. per year	time
bank loan and finance request	100-120	1/4 weeks
cash flows and feasibility studies	30/40	1week/1 month
companies registration/incorporation	30/40	
training and preparation of training material	All year	
general business advice	10/15	1-7 days
co-operatives co-ordination	N/A	N/A

c) TRADE DIVISION

c1) TRADE PROMOTION BRANCH

officers with personal computing experience

none

links:

within DTI	HIGH
other Departments	HIGH
Provincial Govts.	LOW
international organization	HIGH
foreign missions/volunteers	
associations	HIGH
private companies (exporters)	HIGH
PNG missions overseas	HIGH

sources:

DTI library	HIGH
other libraries	MEDIUM
statistics unit of DTI	HIGH
other Govt. Institutions	MEDIUM
International Organizations	HIGH
private companies (exporters)	HIGH
own records	LOW
trade commissions	HIGH
Chambers of commerce	MEDIUM

data used:

PNG statistics	HIGH
International statistics	HIGH
bulletins, magazines etc.	MEDIUM
data on business sector	HIGH
trade regulations	HIGH
research documents	HIGH

data problems:

not available	HIGH
not updated	MEDIUM

data needs:

PNG statistics	HIGH
Register of Companies	HIGH
Register of exporters	HIGH
country reports	HIGH
project profiles	MEDIUM
feasibility studies	MEDIUM
trade agreements/regulations	HIGH
International statistics	HIGH

NIDH register of companies	MEDIUM
commodities production/prices	HIGH
importing/distributing companies	HIGH
tariffs	HIGH
tenders/sales information	HIGH

main activities	no. per year	time
PNG exporters assistance	300/500	variable
information dissemination	all year	variable
market surveys		
co-ordination of outgoing and incoming missions	all year	
organization of seminars		
trade fairs		
foreign importers advice		
briefs, speeches	all year	variable

c2) TRADE CONTROL BRANCH

officers with personal computing experience

LOTUS	no. 1
-------	----------

links:

within DTI	MEDIUM
other departments	HIGH
Provincial Govts.	LOW
international organization	HIGH
foreign missions/volunteers associations	MEDIUM
private companies (exporters)	HIGH

sources:

statistics unit of DTI	LOW
other Govt. Institutions	HIGH
International Organizations	MEDIUM
private companies	MEDIUM
own records	LOW
trade commissions	LOW

data used:

PNG statistics	LOW
International statistics	LOW
data on business sector	LOW

trade regulations HIGH

data problems:

not available HIGH
not updated HIGH

data needs:

PNG statistics LOW
Register of Companies HIGH
Register of exporters HIGH
trade agreements/regulations HIGH
International statistics LOW
NIDA register of companies MEDIUM
commodities production/prices HIGH
importing/distributing companies MEDIUM
tariffs MEDIUM

main activities	no. per year	time
issue import/export licenses	30/40	1h/2 days
coordinate and monitor protection regulation	all year	
trade control and commercial policies	all year	

d) STANDARDS DIVISION

officers with personal computing experience

none

links:

within DTI LOW
other departments LOW
Provincial Govts. LOW
international organization HIGH
private companies HIGH
research inst., labs HIGH

sources:

STANDARD library HIGH
other libraries LOW
statistics unit of DTI LOW
other Govt. Institutions LOW

International Organizations HIGH
own records LOW

data used:

PNG statistics LOW
International statistics LOW
bulletins, magazines etc. MEDIUM
data on business sector MEDIUM
trade regulations HIGH
research documents HIGH
international standard HIGH

data problems:

not available HIGH
not accurate MEDIUM
not easy access MEDIUM
knowledge of sources/location MEDIUM

data needs:

PNG statistics MEDIUM
Register of Companies MEDIUM
country reports LOW
trade agreements, regulations HIGH
International statistics MEDIUM
technology information HIGH
standard regulation HIGH

E) MANAGEMENT SERVICES

officers with personal computing experience

	no.
WORDSTAR	1
LOTUS	1
FRAMEWORK	1

links:

within DTI HIGH
other departments MEDIUM
private companies LOW

sources:

statistics unit of DTI LOW
other Govt. Institutions LOW
private companies LOW
own records HIGH

data used:

PNG statistics	LOW
bulletins, magazines etc.	LOW

data problems:

not available	HIGH
not accurate	MEDIUM
not easy access	MEDIUM

data needs:

PNG statistics	LOW
tenders/sales information	LOW

ANNEX III

NSO PROVINCES AND TOWN CODES

CODE	PROVINCE	CODE	TOWN	CODE	PROVINCE	CODE	TOWN
1	WESTERN	82	DARU	11	E.H.P.	80	GOROKA
		80	BALIMO			81	KAINANTU
		81	KIUNGA			82	AIYURU/UKARUMPA
2	GULF	82	KIKORI	12	MOROBE	83	FINSCHAFEN
		80	BAIMURU			84	KAIAPIT
		81	KEREMA			82	LAE
		83	MALALAU			80	BULOLO
		81	WAU				
3	CENTRAL	1	AMAZON BAY	13	MADANG	82	SAIDOR
		2	M/LAGOON				
		84	KUPIANO			81	MADANG
		81	KWIKILA			80	BOGIA
		88	SOGERI				
		82	BEREINA				
		80	TAPINI				
4	N.C.D.	80	GEREHU	14	E.S.P.	81	ANGORAM
		81	WAIGANI/UNI			83	WEWAK
		82	TOK/HOHOLA/			82	MAPRIK
		88	GORDONS/SARAGA			84	AMBUNTI
		84	BOROKO/KOROBOSEA				
		85	KILAKILA/KAUGERE				
		86	KOKI/TOWN/H.BADA				
		87	LALOKI				
		88	BOMANA				
5	MILNE BAY	80	ALOTAU	15	W.S.P.	80	AITAPE
		84	LOSUIA			81	VANIMO
		82	SAMARAI				
		83	BWAGOIA				
6	NORTHERN	80	POPONDETTA	16	MANUS	80	LORENGAU
						81	LOMBURUM
7	S.H.P	80	TARI	17	N.I.P	80	KAVIENG
		81	MENDI			81	NAMATANAI
8	ENGA	81	LAIAGAM	18	E.N.B.P	80	KOKOPO
		80	WABAG			81	RABAU
						82	KERAVAT
9	W.H.P	1	HAGEN CENTRAL	19	W.N.B.P	81	KANDRIAN
		81	KAGAMUGA			80	KIMBE
		83	MT HAGEN				
		80	BANZ				
		82	MINJ				

10	CHIMBU	80	KUNDIAWA	20	N.S.P	80	BUKA PASSAGE
		81	KEROWAGI			81	BUIH
		82	CHIMBU			82	ARAWA
						83	PANGUNA
						84	KIETA
						85	LOLOHO

NB; CD's URBAN ONLY

ANNEX IV

PROJECTS AND FEASIBILITY STUDIES

INPUT SHEET

1. INTERNAL CODE _____ 2. DATE ___/___/___
3. F&P PROJECT IDENTIFICATION NO. _____ 4. RESTRICTED/OPEN _____
5. TITLE OF THE REPORT _____

6. SITC CODE _____ 7. ISIC CODE _____
8. PROVINCE _____ PROVINCE CODE _____
9. TOWN _____
10. OBJECT & ACTIVITY _____

11. DATE STUDY MADE ___/___/___
12. AGENCY FUNDING STUDY _____

13. LOCAL COMPANY SPONSOR NAME _____

14. CONSULTANT _____
15. COUNTRY _____
16. LOCATION OF REPORT _____
17. AGENCY FUNDING PROJECT _____
18. DATE OF START ___/___/___

19. PROJECT SALES AT FULL PRODUCTION: VALUE _____
 QUANTITY _____
20. CURRENCY _____
21. UNIT OF MEASURE _____
22. MANPOWER FOR FULL PRODUCTION _____
23. FIXED AND WORKING CAPITAL INVESTMENTS _____
24. RETURN OF INVESTMENT _____
25. CAPITAL COST _____
26. STATUS AT DATE ___/___/___ : _____
27. PERSON IN CHARGE OF THE STUDY:
- NAME : _____
- INSTITUTION : _____
- CONTACT NUMBER : _____
28. RESULT OF THE STUDY _____

ANNEX V

PROJECT PROMOTION BY DEPT. OF TRADE & INDUSTRY

by: D EDWARDS
Chief Technical Adviser
DP/PNG/86/002

INTRODUCTION

The need for more effective promotion of projects to both national and overseas investors has been recognized for some time in the Department. The UNIDO project document of August 1986 includes this as one of its basic goals. A meeting of the industry Division on June 24, 1988 agreed that, while other important constraints must also be addressed, a lack of a planned approach to promotion for both small and large projects has contributed to a rather poor record of success.

This paper considers an approach to development of a Project Profile System with the following features:

- Easily and professionally drawn from for publication and presentation to allow pro-active approach to investors
- Easily updated
- Constructed in a standard format for consistency
- Tied in to DTI Information System
- Confidentiality preserved where necessary.

PRESENT STATUS

At present the approach to promotion tends to be a passive and ad-hoc one. Although there are many profiles and feasibility studies in the Department they are not actively advertised in any formal way. Promotion is done by informal contact and infrequently at conferences. Interested investors generally contact the Department to learn of possible projects rather than the other way around.

PROJECTS TO BE PROMOTED

Given the overall mandate of the Industry Division and the present state of development of the industrial sector in PNG project profiles should cover the complete range of potential business activity in PNG both large and small and not confine itself only to manufacturing and processing.

Profiles would accordingly cover the following range:

Manufacturing and processing

New projects

Existing activities requiring rehabilitation
which current owners wish to divest

Service activities

Supporting manufacturing and processing

Service businesses requiring a technical
background e.g. carpentry, computer
servicing

Other services such as transport operations and trade
stores requiring only business training

The profiles would be prepared taking the following factors into account:

Larger projects would be addressed to more literate investors both national and foreign than would small projects. Small projects would be done in a simpler style and could be done in Tok Pisin and English.

Profiles would tie in to a summary list which could be updated regularly and published in the DTI Newsletter or otherwise be advertised to the attention of potential investors both here and overseas.

Some form of ranking of profiles would be made in line with their potential for success. This would take into account the amount of analysis work done and projected profitability as well as experience of others in similar existing PNG businesses.

It is important for credibility that profiles are not just prepared to make an impressive list regardless of potential for success. Officers have a responsibility especially to small businessmen to properly advise investors of the complete picture including problem areas and areas requiring further study.

Profiles would be adapted to the PNG environment and not just be lifted holus-bolus from foreign sources with no regard for realities here.

Explicit projects prepared on request for specific investors and still under consideration by them would be included (at least in the summary lists) but would be protected by the system from accidental publication to others.

PROJECT PROFILE SYSTEM

All records would be computerized to ease updating, abridging for publication and professional presentation.

The system would be composed of the following elements:

1. A broad summary listing for publication having the following headings:

Project name

Short description (products/uses, locat.on if known
rehabilitation project etc.)

Rating (potential for success) e.g. 1 to 5

Information available (feasibility study, profile etc.)

Reserved for national business (Y/N)

Remarks

2. A list with more information for circulation to interested parties on a request basis.

3. Detailed project profiles prepared on a standardized basis as follows.

Only relevant section should be included in particular cases and at least initially may be brief.

Project name

Introduction

Product and uses

Market potential

Plant capacity

Process description

Raw materials

Machinery and equipment

Personnel

Land and building area

Capital outlay

General remarks

IMPLEMENTATION

The following major activities will be required to implement the Project Profile System. Responsibilities and schedules are to be assigned.

Activities

1. Review system proposal and file format (both on computer and hard copy)
2. Collect project lists from all DTI sources
Meanwhile design computer system and procure computer
3. Complete form for each to the extent possible
(starting with Highlands Survey needs)
4. Data input
5. Preliminary ranking of projects
5. Commence profile preparation

ANNEX VI

PRODUCERS/EXPORTERS REGISTER SURVEY

A. General Information Date:.....

Name of contact

Position

Telephone

Company's Name

Address

City

Province

Telephone

Telex

Fax

B. Type of Company

B.1 Ownership (%)

PNG Foreign.....

Status of Company:

Resident..... Non-resident.....

Year of Establishment:

B.2 Activities of Company:

Manufacturer:

Other producers
(agricultural, forestry,
etc.)

Agent

Exporter/importer

Other (specify)

B.3 Average number of Employees:

1985:.....1986.....1987.....

C. Products and Sales

C.1 Main items presently produced and/or exported:

	% of each item manufactured/ produced by your company	% of each item exported
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

C.2 New items planned for production/manufacture

.....
.....
.....
.....

C.3 Product Sales (kina):	1985	1986	1987
Exports
Domestic (PNG)
TOTAL

C.4 What do you foresee about the volume of sales in the next several years?

	increase	no change	decrease
Exports
Domestic (PNG)
TOTAL

C.5 Main problems (other than exporting): e.g. lack of skilled labor, infrastructure, lack of finance, cost of inputs, labor, money, market size security, etc.)

.....
.....
.....

D. Export

D.1 Do you export through an intermediary/agent? (Y/N) ...

D.2 Buyer Countries for existing exports:

Country	share of export (%)
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

100%

D.3 Other potential Countries you would like to sell existing products to:

Products	Countries
.....
.....
.....
.....

U.4 Do you plan to export products which you do not presently produce/export (Y/N)

Products	Countries
.....
.....
.....
.....

E. Trade Promotion

E.1 What are the main problems you face in exporting? (e.g. competition, marketing, expertise transportation, information availability etc.)

.....
.....
.....
.....

E.2 In which area(s) could you use assistance from the Trade Promotion Branch of the Department of Trade and Industry?

organizing selling missions

participating in Trade Fairs

packaging & quality standards

finding Agents

transportation advice

news on Tenders

market information

marketing advice

contact with foreign importers

other business advice

other (specify)

E.3 Are you aware of existing government export incentives for manufacturers? (Y/N)

If so, are they much help to you?.....

F. Other Information

F.1 Do you plan to make significant investments in the next three years to increase or maintain output (Y/N)?
If so, could you please specify?

.....
.....

F.2 Replacement of existing assets:

.....

year(s) cost status(*)

.....

F.3 New products/capacity:

Project description year(s) cost status(*)

.....
.....
.....

(*) 1= idea stage; 2= Pre feasibility study;
3= Feasibility study; 4=Evaluation report;
5= Negotiation and contracting;
6= Project, design & engineering;
7= Construction/installation

F.4 Net book value of capital assets at year end (after depreciation allowance) (Kina)

1985 1986 1987
.....

F.5 Total purchase of capital assets (Kina)

1985 1986 1987
.....

F.6 Paid-up Capital

1985	1986	1987
.....

F.7 Bank Reference:

Name

Address.....

Date

Signature.....

ANNEX VII

Choice of Computer system for the Small Business Development Branch

by Richard Stanley
SSI Advisor

The current need for a computerised information system within the Department of Trade and Industry is felt to surface in two general areas: The first concerns a need for detailed, specialized data access in such areas as trade information, detailed industrial studies and industrial statistics. Such information is anticipated to be managed by specialists who will spend much of their time dealing with data entry and retrieval from one or a few selected workstations, with interlinkage to mainly other Government Departments.

The majority of these departments are linked internally by IBM compatible computer systems which on a per byte cost basis, are the most reasonable and efficient of the different operating systems - for the above applications.

The second general area concerns the need for a wider variety in presentation format of less detailed information, by those less likely to be specialised in the computer system operation. It is this area which falls within the confines of the Small Business Development effort, and comprises the focus of this memo.

Institutional support for Small Business development will require much improved communications with the provinces and with the many service agencies active in rural small business development. At the "demand" end are a host of potential information requests which are anticipated to require the ongoing provision of annotated, packaged information within a relatively short turn-around time. Much of the demand is anticipated to require graphic information to augment or even supplement printed text.

The source of this information will be the network of Small Business Service agencies/institutions, working within the Nation. That network as it exists, is almost entirely linked through the Apple Macintosh system.

The general need for such a system cannot be specified at this time due largely to the fact that we are just now designing a new process for small business assistance which will most likely not utilize the existing organisational setup. The likely future working units requiring computer systemization over the coming months are:

1) Resource Information/Documentation Unit

This area will require rapid information storage and

retrieval over a wide variety of documents - something which does not now exist within the Department. We propose the need for both scanning of conventional images and print information as well as graphic enhancement for the preparation of tailor made information. In addition to the client benefit, the units purpose is to enable the case officer to readily build on the experience of others, providing timely comprehensive assistance. Documentation of the results in turn adds to the units capability to assist the next similar client. The Resource Documentation Unit is in effect an institutional "memory" - something which we do not now have.

2) Media liaison Unit

Part of the vitality of the proposed Small Business Development service will be determined by its promotional effort. In addition to the obvious effect of generating clientele, promotion serves to alleviate transport for extension efforts. Promotion in the right context can also serve as a very positive incentive for the SBDC. The ready capability of producing camera ready copy through the use of a standard word publishing program - with good graphics production and merging capability - is seen as part and parcel of the media liaison unit's operation.

3) Technical Services Coordinating Unit

Amongst the many services of the Small Business Development activity is the need for Technical support. This service will be responsible for researching and packaging and documenting the technical R&D efforts of its own or other subcontract technical resource groups. As concerns computer resources, this unit will require the capability to provide descriptive Technical illustration, as either developed internally, or merged with existing information.

4) Business, Legal and Financial Units

The remaining three units will much rely upon conventional word processing and spreadsheet programs. While not unique to the Apple system, it is the capability to merge the above information with these conventional programs that biases our need for the Apple System. It is as well of note that because the Department of Trade and Industry will continue to rely upon IBM systems, the Small Business Development service should retain a file transfer capability, with the IBM system. To our best assessment at this time this is almost fully assured to the read only level the SBDC will require from the Department's data base.

Equipment Proposed for Small Business Development Service - for use through 1989

The following equipment is proposed with the understanding that start up of the Small Business Development Service will occur around Mid 1989. It as well presumes that this Service will emerge from the existing DTI resources and infrastructure and that initial investment in the system for use by the Department is an investment in the Small Business Development service itself. As the service gain momentum, additional equipment may be required.

ITEM	ACQUIRE DATE
2 each Apple Macintosh computer. model SE with 20 megabyte internal Hard Drive and built in single floppy drive - and keyboard	February 1989
3 each. Apple Macintosh Plus computers, with single internal floppy drives and keyboards	October 1988
1 each, Scanner (Cannon/Mac Scan, HP Scan Jet, Vision scan or equivalent) with drive program software and cables	February 1989
2 each, Cloth Carrying case for computer	1 September 1988 1 October
1 each, Laser jet printer *	February 1989
2 each. Image writer II	1 September: 1 Oct 1988
1 ... n, Conversion software and hardware for transferring files to/ from IBM computer system **	Essentials, October 1988
1 each, Communication network software and firmware (Apple talk or equivalent) for above equipment	March 1989
Service and training contract for above.	Initial Training by October 1988

* Although it is intended to utilise the conventional image writer for everyday correspondence, the use of the Laser printer gives us the capability to produce professional quality graphic material for technical and management illustration and for promotion of the Service.

** The additional software for conversion to the current IBM system will enable us to gain experience transferring files as well as to economise in the use of the equipment while the business branch and the Small Business Development Service are still under one administrative and logistical roof.

ANNEX VIII

Choice of Computer System for the Project and Investment Promotion Branch

The Investment Promotion Branch of the Department of Trade and Industry is currently modernizing its operations. One of the resources that will be used to achieve this goal is the COMFAR program to perform feasibility studies. COMFAR stands for Computer Model for Feasibility Analysis and Reporting. This program will be able to speed up calculations like the internal rate of return, net present value and cash-flow tables in general. It will also assist in the performance of sensitivity analyses and economic studies. In order to use this program you need to have access to a computer with at least 640 kb RAM and a hard-disk of preferably 20 Mb, using MS DOS as the operation system. To assure a smooth data exchange with the computers already available within the department, a 3.5" floppy disk drive would be needed.

In the planning of the investment promotion branch it has been assumed that the branch will handle 10 projects a year. These projects will take 2-3 months each of which 1 month a computer will be needed to analyze the data. So you can say that the branch will need 1 computer to accomplish the needs of the COMFAR users only. To avoid unnecessary delays during peak loads and to use other programs like Wordstar, dBase III and Lotus, it is advised that the branch would get 2 computers at their disposal. Together with a printer this would enable the branch to analyze potential projects and to publish their reports so that they can supply the potential investor with a uniform package without being dependent on foreign sources. It is our belief that this will speed up and improve the overall performance and productivity of the branch.

with respect to the hardware that would have to be purchased these data have been collected.

* Computers:

Type	Hard-disk	RAM-cap	Speed	Price
- IMC MAX 2865	20 Mb	640 kb	6/10 Mhz	K2750
- NEC APC IV	20 Mb	640 kb	8 Mhz	K3700
- Tandy 3000 HL	20 Mb	640 kb	8 Mhz	K3244
- IBM System/2 30	20 Mb	640 kb	8 Mhz	K3518

* Printers:

Type	Width	Pins	Price
- Epson LX800	Narrow	9	K370
- Epson LQ500	Narrow	24	
- Epson LQ1050	Wide	24	K1170

It is possible that in the search for appropriate equipment for the department cheaper alternatives can be found, like Amstrad for example. In case two IMC's and one Epson LQ500 would be bought 16000 would be involved for the hardware. The Branch will not be needing any additional software because COMPAR is available already and the other programs will be available within the department quite soon.

List of References

1. DP/PNG/86/002 Project Document: Institution Building for Industrial Promotion. UNIDO. 1986
2. Management Plan 1987-92. Department of Trade and Industry. 1987
3. Work Plan December 87-may 88. UNIDO Project DP/PNG/86/002. Jan. 1988
4. Work Programme 1988-mid 1989. UNIDO Project DP/PNG/86/002. June 1988