IMPLEMENTATION of the MANAGEMENT INFORMATION SYSTEM In PERTAMINA – GEOTHERMAL DIVISION

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Key Words: management, geothermal, computer software

ABSTRACT

PERTAMINA (the Indonesian state owned company) -Geothermal Division has developed a system information for internal use, to support managerial process in analyzing, implementing documentation and monitoring operational activities. The system is called SIMPABUM, (S)istem (I)nformation (M)anajemen (PA)nas(BUM)i.

The system has been designed to include three modules; Human Resources, Finance and SIG-Pabum. These are in integrated operationally on the stand-alone computer, but optimum operation has not been achieved yet. The system will be more developed to meet agreed services, internally and externally on providing geothermal data for monitoring and controlling purposes.

1. INTRODUCTION

In 1989, Geothermal Division designed software for information system called SIGI.
In fiscal year 1993/94, the SIGI design was implemented and produced a geothermal database, called SIP.

Year 1996, the SIP was evaluated and showed a low performance in program structure, system menu, user interface and database structure and relation that made data redundant. Based on this evaluation, the SIP was upgraded to SIMPABUM.

SIMPABUM is a tool for managerial and operational purposes. Therefore, the system is designed with an architecture of a MIS application to serve information for tracking and monitoring. The system consists of three applications or modules; e.g. Human Resources, Control and Financial Information, and SIG-Pabum. Figure 1.

HR Module is designed to provide an easy to-use tool for managing, grading administration and also organization planning which enable uses to create and display organizational structure. Users can then use this structure as a basis for planning personal costs, resources and evaluation.

Finance Module is designed to provide everything that is required for evaluation and simplify financial decision-making and planning.

SIG-Pabum Module is designed to provide information that is required for monitoring. Therefore, the characterize developed are serving graphical and textual data in one screen, showing a trend, ratio and deviation, providing a global information in detail, and if any data in time series can be used for prediction purposes.

2. OPERATIONAL STATUS

SIMPABUM is implemented over major five stages, analyze on demand, software development, testing, installation and data entry.
The system uses available hardware and software, and employs inexpensive operating system.

The application was installed on a personal computer and handled by the Planning Department.

2.1 HR Module

This application uses Delphi for Windows program language, and has three main menus consist data maintenance, table maintenance and report.
Data maintenance menu is used for data entry.

Table is maintained by ten menus e.g. Religion, Location, Courses/Seminar (abroad), Courses/Seminar (local), Education, Organizational Structure, Position, Hypothetical Correlation Position vs. Age.

This module has five reports e.g. Organizational Structure, Age vs. Position, Geothermal Courses, Query on Age Vs Position, Query on Criteria.
An example of the form for query on criteria is shown in Figure-2.

2.2 Control and Financial Information Module

This module also has three main menus similar with HR module. Figure 3.

Entry data or transaction data uses 13 menus e.g. Exploration Activities, Production Activities, Development Activities, Operation Cost, Target, Income, Proposed Budget/Investment, Proposed Budget/Operation, Conversion of US$-RP, Balance, Evaluation of Performance, Evaluation of the Performance per Activities.

Tables are maintained by 13 menus e.g. Development Activities, Production Activities, Production Cost, Exploration Cost, Target, Cost Description, Account, Location, Income, Investment Cost.

This module has 14 reports e.g. Proposed Investment, Proposed Production Cost, Proposed Investment, Recapitulation of Proposed Investment, Recapitulation of Proposed Operation Budget, 'Usulan Anggran Investasi (jenis biaya), Realization of Operation Budget, Justification, Realization of Investment, Calculation of Cost per Unit Production, Cash Balance, Cash Flow, Evaluation of Performance, Evaluation of the Performance per Activities, and Proposed and Realization

2.3 SIG-Pabum Module

This module is a *Map-info-based* application and developed in 4 main menus e.g. Map, Graph, Facilities and Exit. Presently, there are five maps e.g. World map, Indonesia map, Province map and Index map. The Graph menu already consists 5 graphs of technical data e.g. temperature, pressure, well chemistry, well output and performance of production.
Presently, there isn't any data in time series that can be used for prediction purposes.

Facilities Menu has two menus for printing purposes e.g. layout and setup. Exit menu has two options e.g. Back to Map-info and Back to Windows.

SIGPABUM views are shown in Figure-4 and Figure-5.

3. DISCUSSION

Currently, SIMPABUM is installed on a personal computer and it is supported operationally by only One IT person. The networking infrastructure is not available and causes the lack of data entry and control, also sharing data.
In its operation, some error on query process is found, and a re-testing phase is needed.
That constraint caused the operation of SIMPABUM to be not optimal.

Implementation of the MIS or IS in Geothermal Division seems need more commitment from the high level management. It is in line with the challenge of global era when the information will be a part of the intellectual capital.

4. FUTURE DEVELOPMENT OPTIONS

The present SIMPABUM system has been developed using software platform of Microsoft Windows, and it will facilitate its development. Unfortunately, the system has been using an unsuitable hardware or infrastructure for a MIS.

Presently, an information system to support management control known as EP-Controlling System is being developed by PERTAMINA E&P Directorate. The system basically consists of a reporting system and Executive Information System (EIS). The system will be implemented to promote paperless reporting among various management in the directorate. As a part of E&P Directorate, the Geothermal Division is expected to complete the system requirement. Outputs from SIMPABUM system shall be used, "on-line" or "near on line", as a resource for EIS segment of the EP-Controlling System. Therefore, SIMPABUM system shall need to be reengineered and to be completed with an analysis tool. Besides, the organization of the IS in Geothermal Division have to be restructured.

The organization of MIS or IS has to integrally support the documentation's infrastructure and knowledge management in Geothermal Division. The scope of the organization could not be separated from the company key success factor, technology, human resources and process/system. Proposed IS organization has a matrix operation e.g. planning, operation, application, quality control and knowledge management. Figure 6.

5. ACKNOWLEDGEMENT

6. REFERENCES

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(Internal Report)
SIMPABUM

Figure 1. SIMPABUM with three modules e.g. HR module, Control & Financial Module and SIG-PABUM module.
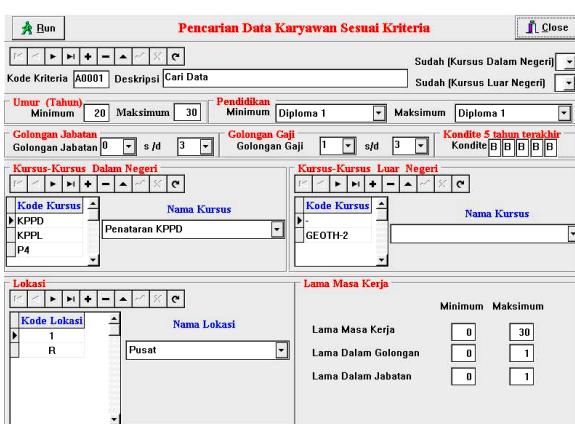

Figure 2. Query on Criteria Form (HR Module)

Figure 3. Control & Financial Information Module
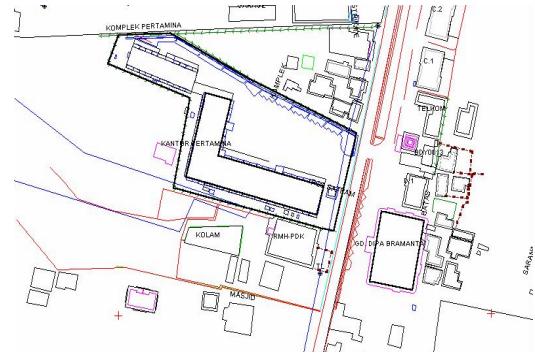
Figure 4. A SIG-PABUM view (The Kamojang Site Office)
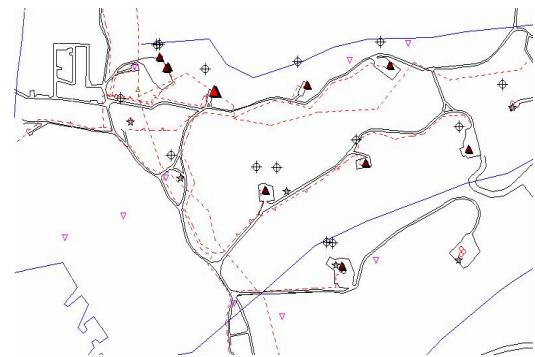

Figure 5. A SIG-PABUM view. (The Kamojang Geothermal Field).
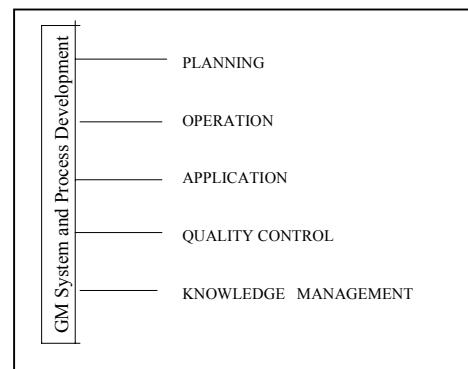
Figure 6. Proposed IS Organization (in matrix)