

## NORTHERN TECHNICAL UNIVERSITY

### **Budget Management System**

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#### **Abstract**

The project was conceived based on the need to automate and integrate the financial budgeting with different management systems on the EMELNORTE Company.

The investigation and analysis of global management models (collaborative management) and business management frameworks is able to establish the basis for enterprise architecture design and implementation of budget management system.

The technological aspect is based on Rational Unified Process (RUP) with which various artifacts were developed.

The proposed model in this project includes the design of computer systems based on the company's strategic planning and the processes governing the activities of the same. The budget management systems implemented effectively contributes to registration and control of budget requirements and substantially improves the flow of information from different areas to the budget department, thereby facilitating the control and management of the company budget.

An important conclusion to emphasize as product from this project is the need to replace the existing applications with software that provide facilities of control and management of the corporate resources

#### **Keywords**

Budget, budget commitment, budget execution, budget item.

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## 1 Introduction

The budgeting is now carried out based on manual processes that hinder the consolidation of budget requests from all areas of the company, this manual processes are based on the development of physical and digital documents that lack a unified format eventually impede the proper flow of information to the department budget.

It is noteworthy that after an analysis conducted by the Computer Center, it was established that systems currently cover the information needs of different areas of EMELNORTE have many flaws or difficulties.

### 1.1 Problem Definition

|                              |   |
|------------------------------|---|
| <p><b>The problem of</b></p> | <p>Not having an integrated system to manage processes, manage EMELNORTE Budget. Currently there are separate processes other automated manuals fail to give an efficient solution.</p> <p>Not having an automated and integrated process control and budget execution</p> <p>Users dependency to the developers</p> <p>Applications lacking referential integrity.</p> <p>Applications built with technologies which are not supported</p> <p>Difficulty maintaining applications</p> <p>No contingency for technology that is currently in production</p> |
| <p><b>Affecting</b></p>      | <p>All users of different departments and units of EMELNORTE involved in the Management Budget processes.</p> <p>Operational and managerial levels requires understanding and controlling the budget</p> <p>Technical staff having difficulty maintaining production systems</p>  |
| <p><b>The impact is</b></p>  | <p>Lack of consistent budget management</p> <p>There are many checks and manual activities that do not allow efficient budget management</p> <p>Difficulty in controlling the budget and projects the company</p> <p>Difficulty in budget consolidation for presentation at board level and regulatory bodies</p> <p>Islands of information difficult to manage the company</p>   |

|                                     |   |
|-------------------------------------|---|
| <b>A successful solution should</b> | <p>Solve the internal requirements of those involved in the process of budget management</p> <p>Meeting the needs of integration</p> <p>Automate critical business processes of the company</p> <p>Provide reliable information on budgetary management of the company in an easy and timely</p> <p>Implement a quality software solution supported by an efficient methodology for software development.</p> |
|-------------------------------------|---|

## 2 Business Context

Budget management within Electric companies is subject to several factors, within these, the most important is the budget allocation received by the state and the resources generated by economic activity of the company itself. From this point of view, the project will allow EMELNORTE SA achieves the following objectives:

1. Meet the requirements of each area
2. Monitor budget allocations for each requirement
3. Tracking the budget according to the EMELNORTE's strategic planning
4. Reliable information for management and for entities which are required to report budget information.

It should be noted that there is a budget system whose design has some drawbacks to the implementation of the objectives of the budget department and financial area in general

### 2.1 Needs of stakeholders and users

| Needs  | Priority | Questions  | Actual Solution                             | Proposed Solution  |
|--|----------|--|---|--|
| Designing a system to facilitate the consolidation of information concerning the development of requirements for each area and the preparation of the budget | High     | The system must consolidate information to facilitate the budget development | NO  | Develop INITIAL BUDGET SYSTEM to solve this problem.                       |
| Implementing this system in the shortest possible time to put it into production for the preparation of next year's pro forma                                | High     | In the month of September develops the budget for 2011.                      | At present the Budget is prepared manually. | Prepare the 2010 budget using the system already in place and functioning. |
| Develop the system using agile programming tools.  | High     | Use existing development tools.  | N/A   | Develop the system using Oracle tools.                                     |

| Needs   | Priority | Questions                   | Actual Solution                                  | Proposed Solution                   |
|---|----------|-----------------------------|--|-------------------------------------|
| The user interface should be easy to operate, fulfilling all the requirements | High     | Meet all user requirements. | Development with the help of experts budget area | Development with the help of users. |

## 3 Product Overview

This section provides information to high level system functions and interfaces with existing applications.

### 3.1 Overview

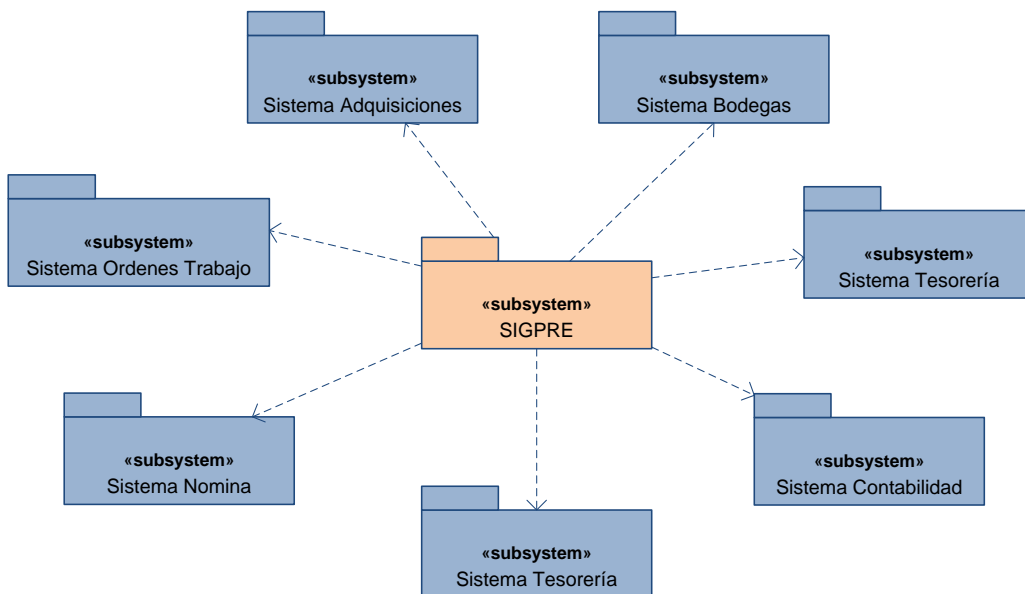


Figure 1 Perspective of the project within the integrated information system

SIGPRE project includes the development of the Budget Management Module, Control and Budget Execution and interfaces for systems developed in the proposed ERP system development for the EMELNORTE SA company.

Figure 1 shows how SIGPRE project fits into the macro architecture of integrated information of de EMELNORTE company.

It is worth mentioning that this product is the first part of a suite of business management. It can be observed in general the structure and interrelationship of the modules that are part of the budget management system.

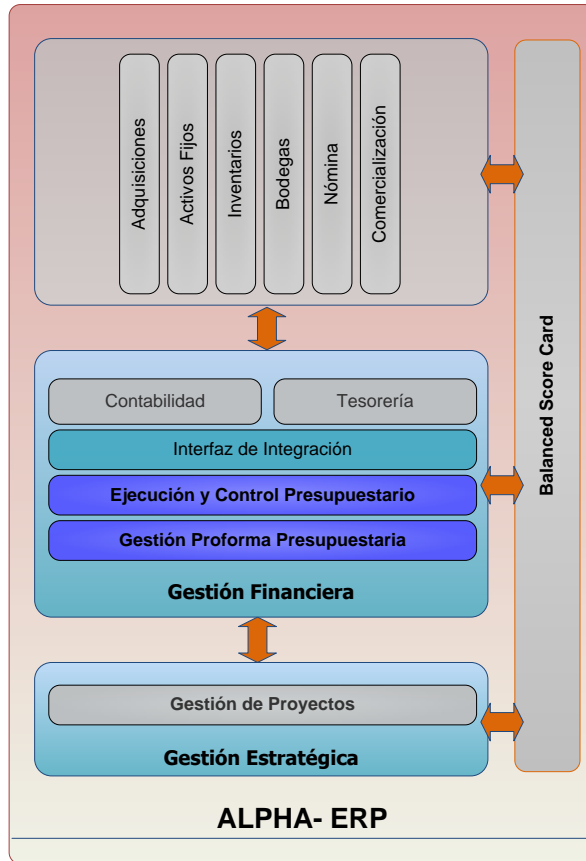


Figure 2 System perspective in business management suite

### 3.2 Strategic Management

Proper management of data for strategic planning is a fundamental aspect to ensure consistency of processes. Maintaining exclusive coding, avoiding duplications, and sharing relevant information among all areas of the company are one of the objectives. SIGPRE helps organize and centralize the data of the strategic plan by providing that information flows easily and quickly between all departments involved in the preparation of the budget.

#### 3.2.1 Project Management (operating plan)

The management model of the company should be directed to projects that meet the needs of work and other administrative aspects of the company. The tool developed to manage projects in an integrated manner with the rest of the application.

The budget requirements are associated with each activity defined within the phases of the projects.

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## 3.2.2 Scorecard

The strategic dashboard gathers all information related to the degree of compliance with strategic objectives is proposing the business forward. It is typical planning information and future management.

It is a useful tool for any level of decision. Adequate information output program will depend on receiving the report and its level and function. The information is all necessary to manage the company in any sector at any level.

## 3.3 Budget Management

### 3.3.1 Budget Planning

Each of the areas that make up EMELNORTE has an obligation to structure their operation on a project basis. With strategic information linked to projects, phases and activities SIGPRE is capable of handling the budget data at a detailed level.

Budgetary items required in each activity provide valuable information to management levels and especially the financial area, the same as, through its budget department is responsible for managing the resources from the state, the same company or other financial sources.

### 3.3.2 Budgetary Control

Within SIGPRE features, budget control to manage resources according to budget workflow, ie meet the following milestones:

- Certification
- Resource allocation
- Commitment
- Execution

## 3.4 Summary of capabilities

Budget Management System improves budget management process, eliminating the problem of control and monitoring of budgetary resources EMELNORTE SA.

- Eliminate manual processing of registration and budgetary requirements of the different areas
- Control the allocation, commitment and budget execution

### 3.4.1 Budget Management Module

| User Benefits                                | Features that support  |
|--|--|
| Reduced processing time of budget            | The recording of information from different departments will be systematic and orderly manner.<br>The budget department staff will have an analysis tool of consolidated data from various areas and departments |
| Departmental users will have a unified tool. | Avoid the use of manual forms and documents are not unified  |

| User Benefits                        | Features that support  |
|--------------------------------------|--|
| Users will have detailed information | Opportunity to keep a control on the requirements of the areas to a level of budget item         |
| Transaction History on the budget    | The user can record the breakdown of cuts or adjustments to the budget                           |
| It will be available via intranet.   | Access to the system via the Web will allow users immediate access from anywhere on the intranet |
| Facilities for data analysis.        | Through various reports and query capabilities that will provide the system.                     |

### 3.4.2 Budget Control and Execution Module

| User Benefits                                     | Features that support   |
|---|---|
| Monitoring capacity of the company's budget       | Budget Transaction Record   |
| Management of budgets according to business needs | Budget Categorization   |
| Control budget at any time                        | Configurable time periods   |
| Ability to maintain control over budget approvals | Budget management roles that can be entities or persons   |
| Project budget management                         | Structures for project management   |
| Budget control, committed and executed            | Management types of budget transactions   |
| Transaction History                               | Users and system records the movements keeping a record budget for each of them and according to each budget item |
| It will be available real data                    | Immediate access to real information  |
| Facilities for data analysis                      | Control and budget performance reports  |
| Budget Planning                                   | Management budget scenarios that allow budget projections   |

### 3.4.3 Integration Interface

| User Benefits         | Features that support                             |
|-----------------------|---|
| Timely information    | Integration interface for different systems       |
| High Availability     | Real-time transactions                            |
| Information Integrity | Movements based on automatic budgetary parameters |

## 4 Conclusions

Have details of the budgetary requirements for each project and each area of the company, is a useful tool for predicting the direction of the company.

With the budget information the different areas, both technical and administrative, may control the distribution of resources

In addition, when registering the strategic plan in the system, users are able to assess compliance of each budget strategic objectives defined for each strategy and each of the projects, phases and / or activity.

The information required by both the administration, board, shareholders and control bodies can be obtained from accurate and timely manner largely avoiding the establishment of values according to



personal criteria of the different areas because there was no information detailed by project and budget requirements.

## 5 Recommendations

The budget management system has several sources of information, you can log requests for materials, labor, services, and also budgetary revenue the company will have during the year in office. Due to this diversity of data sources and manage the complexity involved in establishing the following recommendations to improve the management of corporate resources.

- Establish clearly defined enterprise architecture processes governing the activities of the enterprise to register so value-added information in the budget system
- Design modules for enterprise management system so they can share and manage different sources of information according to a standardized and based on the management model proposed in this paper.

## 6 Future Work

From this project, we could establish the basic design and implementation of the following systems:

- Organizational
- Accounting
- Inventories
- Human Resources
- Payments
- Projects and Scorecard
- Acquisitions

Future efforts should aim to complement the work started and get to deploy the entire integrated business management system.

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