

**POLYTECHNIC UNIVERSITY OF THE PHILIPPINES**

COLLEGE OF COMPUTER AND INFORMATION SCIENCES

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

STA. MESA, MANILA

System Analysis and Design

**CONSTRUCTION PROJECT MANAGEMENT SYSTEM**

**(ConPro MS)**

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**Chapter 1**

**PROJECT DEFINITION**

1. **INTRODUCTION**

A computerized construction management system has become important factors for home builders and hardware tools providers. This system is a software-based business solution used to simultaneously track sales activity, inventory of equipment, client information and other relevant data. Constructors and other firm can both benefit from a thorough solution, where single transaction entry records necessary details on the client, project description, price and date while also updating other levels of the system.

Computerized management systems save time for businesses by speeding up transactions while raising accuracy. This allows for confidence in accounting and accountability among employees as it is easy to verify how much money and what time transactions took place.

This system should help the company to streamline the administrative task and provide real-time access to the data. Building this system in web based interface will further help the ease of accessibility through any web browser. This chapter will provide a brief understanding about the company’s profile where the project has been executed and the current problem that they face in managing different information. The study findings enable the definition of the project problem statement, its objectives, scopes, constraints and assumptions in developing the system. The brief understanding about the methods used in the project will be discussed towards the end of the chapter.

1. **BUSINESS CASE**
   1. **Background of the Organization**

This project was done at Ang Construction Group Inc. (ACG), one of the new civil and construction company in the Philippines. Ang Construction Group Inc. was formed on December 17, 2008 by Alexander Ang II. Their construction firm was headquartered in SSS Building, Marcos Avenue, Palamis, Alaminos, Pangasinan. ACG was known with their founding principle that the customer always comes first. They build with the intention of exceeding their clients’ expectations for safety, quality, functionality, and aesthetics, and deliver finished products that stand the test of time.

In almost a century, they have 500 employees that are spread across offices and jobsites throughout the Philippines. ACG Inc. is made up of people with the specific skills and experience to serve their diverse client needs. Their expertise in pre-construction, estimating, document review, value management, and construction will rise to the top. ACG brings experience and a dedication to provide their clients a strong and cohesive team and exceptional service and results. They also offer consultation and architectural services that include conceptual and schematic design, design development and construction documentation.

* 1. **Project Overview**

Ang Construction Group Inc. is one of the new experienced and respected building and civil construction firms in the Philippines. The problem is they only use paperwork and direct human language communication by mouth to manage the business. This delays information transmission in the business. It’s hard for them to do it because it takes a lot of time to their work instead they can use their time to finish and manage their business. To solve their problems, we endorsed our proposed management system which can help to implement good and accurate system for their company. We explained to them the benefits of it to their company and to their (future) clients.

CONSTRUCTION PROJECT MANAGEMENT SYSTEM ( ConPro MS ) was developed following system development stages for smooth running and management of Ang Construction Firm. The time provided by our adviser enabled our group recognizes and defines the problem in the current manual system at the company. After an information gathering process from several businesses managed by manual and computerized systems, the proponents saw that the company indeed needed a computerized management system. ACMS is a web-based application, enabling the organization to handle employee and client information, appointments, inventory of equipment, weekly/monthly report and other relevant information. The administration can also track renting of equipment, calculating wages, withholding taxes and deductions, printing and delivering checks and paying employment taxes to the government. The system was skillfully and carefully coded to seal any possible loopholes in the system.

The system was developed using HTML (Hypertext Mark-up Language) and PHP. This system will indeed help the Ang Construction Group Inc. and the esteemed staff members to manage and steer the business’ functionality and transactions to realize its maximum potential in addition to its competence in the construction business field.

* 1. **Project Constraints**

We identified several problems which will affect and limit the functionality of the system. Constraints assessment will be continuously monitored and updated throughout the life of the project. To mark, the following constraints have been identified:

* ConPro MS must be suited with all Ang Construction Group regulatory policies and guidelines. These policies and guidelines will impact the tool by demanding certain standards and quality of coding, user interfaces and maintaining the tools.
* ConPro MS must be compatible with existing user manual management. This will require the team to design and code the ConPro in a manner in which data can be seamlessly imported and exported.
* ACG Inc. will incur an extra cost on the electricity and internet bills due to computerization of the construction management.
* ACG Inc. will be required to train its employees on how to manage the system hence the construction output capacity will reduce a bit during this period.
  1. **Project Assumptions**

We defined circumstances that we are expected to occur during the project life-cycle. The following assumptions were made in preparing the project plan of Construction Project Management System (ConPro MS):

* ACG employees are willing to change business operations to take advantage of the functionality offered by the new software technology.
* Project management ensures that project team members are available as needed to complete project tasks and objectives.
* There is adequate allotment of resources for the project.
* The scope and features of the proposed and developed systems have been approved by the faculty-in-charge.
* The development team definition/composition has been approved by the faculty-in-charge.
* Failure to identify changes to system requirements within the time specified in the project timeline will result in project delays.
* Project should be ready to deploy and completed by March 2017.

1. **Methods Used in the Study**

In order to ensure that the system will meet management, employees and client needs once implemented, our team carefully conducted a thorough data collection process and a system development method that will plan, design and test the proposed Construction Project Management System (ConPro MS).

The project team decided that the most suitable and appropriate software development methodology we found for our software development is iterative waterfall software development model. It gave us a clear view about our software and helped us to achieve our goal. Since in this model all the phases are in a sequence and are dependent with one another, therefore a phase cannot be started until the previous phase is completed and fully documented. This approach is most appropriate for our project, because all the requirements and goals of our project are very clear. Secondly, it is easy to do work in components and you can easily add functions if there are other requirements needed. After the completion of all the phases individually, they are integrated together. This model is very economical and risk free due to its sequential and iterative approach.

We start with a simple preliminary investigation about the company to know their current manual system and how we could make it work better. We conducted a detailed and comprehensive data gathering to determine all the specification of system in detail which are very essential to build the system and also provides us knowledge about the behavior of the system. Data Collection is an important aspect of any type of research study. Inaccurate data collection can impact the results of a study and ultimately lead to invalid results. The choice of the many methods for collecting data and system requirements will depend on the variables to be measured, the source and the resources available.

Our team decided to choose the interview method because it is more convenient and more efficient. This was the most exhaustible method of data collection. The team used their data superior collection skills to extract data out of the construction management team, the construction employees and the company’s client at the moment of data collection. The interviewers created a conducive environment in which the interviewees could feel free to let out the best they could, that helped the team come up with the most effective system to fulfill their needs. Among the data collected the following was highlighted to be of a great consideration: (1) The guests’ feelings about the current management of the construction company, and (2) the employees’ comfortability with the proposal of introducing a new computerized system. During the interview, some employees have concern of having a computerized management system. They think it will be a big adjustment to use an unfamiliar way of managing the construction firm. But we assured them that the hotel’s capacity and proceedings were put into consideration by the system developers.

Selecting the best method that you will use for your study is a very critical point because the whole system is defend on this method and it also provides input to the next following stages of the system development life cycle.