

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Nowadays, projects have become common parts in business environment. A project can come in any kind of shapes and sizes, depending on what the project's goal is. Based on what author read, a project can be defined as a temporary activity with a unique purpose, which is developed using progressive expansion and involves uncertainty. Moreover, in a project, many shareholders are involved and various resources are required.

In real project environment, as most of people who familiar with project management know, projects are characterized by high uncertainty. Changes, conflicts, and problems may occur in the project cycle life at any time, which some of those problems may occur unpredictably. As a result, it will affect the project working results. However, with proper project management skills, those problems can be managed in systematic and rational manner. In fact, projects development in industry site shown in the draft statistic had been proved that only 30% projects can be delivered on time and some of those 30% projects are over-budget.

Although, project management has been considered crucial in managing a project, there is no adequate amount of facilities for inexperienced project manager to practice actual experience of project management. Similar to this situation, students who have interests in project management do not have knowledge in managing a real project. One facility that can be used to practice project management is by

participating online project management simulation. However, based on author's experience, the existing project management simulation, which is SimProject, is difficult to be used because too crowded user interface. SimProject also does not effective because administrator needs to do a number of manual works. Moreover, it is not dynamic enough compared to the core of real project, which has uncertainty and always change.

Based on this background, Mr. Abi Jabar from PT. Austindo Nusantara Jaya offered his idea to the author to construct a project management simulation, which can be applied to facilitate project management's students in understanding more about project management. Author would like to be part in realizing the idea since this idea is a very bright brainstorming for field project thesis.

Mr. Abi Jabar, who used to be a project management lecture in Bina Nusantara University, considers that project management students are lack of real case experience. Therefore, Mr. Abi Jabar came up with this idea in order to allow students gain more real case experience of project management. The solution that we will provide in this software development project is a based-web project management simulation with real update system and engineered to be simultaneously providing system dynamics and create a likely real situation while doing a certain project. Therefore, students could practice in predicting results of every decision they make and deciding what actions they should make.

As the author has describe before, this kind of software has already existed in the market, but the project simulation that author make will be simpler, easier-to-use, and has more dynamics than the existing project simulation. The project simulation that would be created will cover every aspect of project management situations.

1.2 PROJECT SCOPE

In order to avoid scope creep happening in thesis project progress, project teams would need a boundary. Thus, the author will provide project scope based on system point of view. The author will discuss about the analysis of current system and its' limitation. For comparison with the proposed project simulation, the author would discuss SimProject as the current system. Furthermore, the author will also elaborate the analysis of proposed system by using system-coding discussion.

1.2.1 Problem Description

The problem that we try to solve is the lack of real experience study case to perform a real situation of project management. The idea to solve this problem is by practicing with project management simulation. SimProject is one of few project simulations that available in this modern market. Since the author discusses the thesis project in system perspective, the author will also discuss the problem of SimProject in system perspective.

In real world, every decision's project team made will get feedback as soon as possible, which then project teams will respond to the feedback and motivate them to handle the results of their actions. As the author has said before, SimProject is not lively and not interactive because administrator needs to approve each team's decisions before each team can continue their period. For you information, the administrator would not get online 24 hours 7 days. As a result, it does not require project teams to manage faster

decisions, even when problems occur after their previous actions, project teams may not respond immediately.

Furthermore, before starting simulation in SimProject, administrator needs to create and input manually project tasks, available resources, and all kinds of disrupting project events. The administrator that author interviewed thinks that this is not effective because it is a time consuming and tiring job to create different inputs every beginning of project simulation.

Disruptions are risks that might happen and delay projects. Since disruptions are inserted manually by administrator, SimProject can display only the inserted disruptions. Therefore, if administrator does not insert disruptions, SimProject will not show any. This is a disadvantage because risks are part of real project and novices should be able to get familiar with this uncertainty situation.

1.2.2 Project Assumptions

Assumptions are conditions that must be right in order that the solution is valid. In this thesis project, author also provides some assumptions, which are:

- *System used in local area network*

The proposed project simulation is a web-based system. However, the author would prefer the simulation to be used in local area networking. This action is chosen because the simulation can have faster speed in local area network.

- *System used for training and education purpose*

The project simulation is used for training novices in project management and education of project management students only. The simulation is not for entertainment purpose.

- *Trainer is someone who has capability in sharing knowledge in project management*

Since this is for training and education purpose, those sessions must be lead by a trainer who has the capability in sharing project management knowledge. The trainer must also a person who has used to use this project management simulation so that person can train the novices.

- *User has knowledge of project management fundamental*

In order to use the project simulation, users must have project management fundamental knowledge. This project simulation is not a tool for a newbie, who does not understand anything to learn project management. This project simulation is a tool for project management beginner to get used to and understand more the essence of project management.

- *System used when there are more than one user*

More than one user must be performed in the project simulation in order to achieve more difficult situation because if there are more than one user, each team would be able to compare their decisions results and would compete each other.

1.2.3 Project Constraints

In applying new system to one community, there will always be several things, which can restraint the project. In order to gain full benefit of the new system, author has considered potential constraints that may occur in this project. The project constraints would be:

- *Students' adaptability to proposed project simulation*

Since current students of project management course have never used project simulation before, there might be some difficulties in using the proposed simulation. There will be need to give some period for students to get used to with the proposed simulation. For the solution, author may give some training for students.

- *Project could be time consuming and costly*

The author categorized this thesis project as a medium sized project. Lots of thing would need to be considered, which might take some time. Analysis has to be prepared carefully in order to prevent problems in designing phase. The schedule also has to be managed effectively because by ignoring both issues, the author may fail the project. As result, the author need to rebuild the project, which is time consuming and costly.

- *Difficulties in gathering information*

There would be some difficulties in gathering data because the author need to interview administrators and users, who are busy people. It will not be easy for requesting their time to conduct interview. Some

confirmation must be done a couple days before the data gathering day. Therefore, if interviewees could not conduct the interview, the author could arrange other interview day. Moreover, interviewees have accepted author to use media communication, such as chat room (Skype) and sms, so it would ease the author to ask some question.

1.3 PROJECT AIMS AND BENEFITS

A project without a goal is meaningless because the project does not have a specified direction so project team does not know what they should create. By defining project objectives and benefits, project team would have a guideline in constructing the system. Below are the definitions of project objectives and benefits.

1.3.1 Project Objectives

Increasing knowledge of project management fundamental is the objective of this simulation project. By practicing project management course with the help of the proposed project simulation, author hope that novices could get better understanding of project management. By combining better interface and more automated and dynamic in the proposed system, author hope that it could solve the existing problems.

1.3.2 System Benefits

In this thesis project, author will create a new project management simulation that is more effective and efficient. The author hope that the proposed simulation would solve existing simulation's problems and it could

eventually be beneficial for novices in project management. Below are some of proposed system benefits:

- *Increase system-human interaction*

In proposed project management simulation, author will evaporate administrator job in approving submission. This will result more automated simulation and it will reduce user-administrator interaction. More interaction will help novices to be more active in making decisions. Thus, novices will get used to with project dynamics, which is one character of real project.

- *Increase work effectiveness and efficiency for administrator*

Currently, before starting new simulation, administrator needs to create all parameters in simulation manually. This is a very tiring and time consuming task. Thus, in proposed simulation, all parameters will be available, which some parameters will be randomly chosen by system and some other parameters can be chosen by administrator.

- *More uncertainty drive risks prediction*

In proposed system, disruption parameters will be automated chosen by the system. Thus, more uncertainty would be involved. As author has said before uncertainty is one of real project characters. This will drive novices to practice predicting risks that might occur because of their previous actions.

1.4 PROJECT METHODOLOGIES

Author will use 3 ways research methodologies in the thesis project:

1. *Theoretical Research*

In developing proposed simulation, author has to do research based on theory that related to this project simulation in order to help author in understanding some theoretical terms. Related books and articles are theoretical information resources. Besides that, guidance of supervisor and other related lecturers would be very helpful resources. Those resources could help author to understand more about theoretical foundations that will be used in accomplishing this thesis project.

Project framework that author preferred to use in system development is *Software Development Life Cycle (SDLC)* with iteration in design phase. A *system development methodology* would also be needed as a guideline of SDLC. “A methodology contains instructions about how to use models, tools, and techniques.” (Satzinger, Jackson, and Burd, 2002:74).

Some models of system components that author will use in analyzing existing simulation are *Functional Hierarchy Diagram (FHD)*, *context diagram*, *Data Flow Diagram (DFD)*, and *Entity-Relationship Diagram (ERD)*. DFD would be decomposed until DFD-level 2. Moreover, some tools that are used to support in constructing analysis, design, and documentation will be Microsoft Word, Microsoft Project, C++ and PHP programming tools.

2. *Data Gathering and Analysis*

In this thesis project, data gathering and analysis phase are very critical phase because in this phase, author would likely to identify and define problems

in existing simulation more detail. Furthermore, the collected data will be used to improve performance and design of proposed simulation. In order to collect data and do analysis, author used some techniques, which are (Satzinger, Jackson, and Burd, 2002:121).

- *Conduct interviews and discussions with users*

Purposed of the interview is to understand more about the existing simulation information and discover the existing problems. Author will interview some people that have used the system before, such as administrator and simulation users. By performing interview, author will also find out more project requirements in order to improve the performance proposed project simulation.

- *Observe and document business processes*

Author has observed the existing simulation by joining and experiencing the simulation herself. By doing observation, author could understand more about the simulation and have vision of the proposed simulation. Author has also done some documentation about system process. The sources of the documentation are gathered through interview and observation process.

3. *Design*

Author would build actual design of proposed project simulation and author will concentrate in coding area. Author will illustrate the analysis of proposed simulation by defining simulation coding design and its function. The user interface will be created by author's thesis partner.

1.5 STRUCTURES

Chapter 1: Introduction

In the first chapter, author will explain general objective of the thesis and about how to construct the thesis. This chapter itself consists of project background, project scope, project aims and benefits, project methodologies and structures.

Chapter 2: Theoretical Foundation

Second chapter will describe and define all theoretical foundations to support the theories used in this project related to information systems.

Chapter 3: Analysis of Existing System

In chapter 3, author will explain existing simulation SimProject in detail with system point of view. It would include Functional Hierarchy Diagram (FHD), context diagram, Data Flow Diagram (DFD), and Entity-Relationship Diagram (ERD). The author would also discuss the limitation of the system and alternative solution to the current system.

Chapter 4: Design of Proposed System

Author would describe the proposed system design by using system flowchart. Here, author would also discuss about the system data. Author would create quite complicated prototype of the system, which users and administrators could interact with the system.

Chapter 5: Discussion

This chapter will evaluate the result.

Chapter 6: Conclusion