

CHAPTER 2

LITERATURE REVIEW

2.1. The Previous Study

The previous study of Patrick (1998) focuses on the multi-project management by scheduling the critical chain of the projects and providing buffer to allow resources to focus on work without task due-date distraction. The method used in his journal is to apply aggressive target duration estimation which is necessary to motivate the workers to work in a rush. In the mean time before the due date, they provide feeding buffer; to protect critical chain from non-critical task variation and project buffer; to protect due date from critical chain variation. Behind the project buffer it is also necessary to provide resource alerts that assure the availability of the resource. This method requires a whole change in managing project which is high cost, but if speed and reliability are important for the company, it can assess potential benefit.

Another paper by Patrick (1998) is the development from his previous paper by applying the TOC method in addition to the use of critical chain schedule and buffer management. In this paper, he proposes that multi-project management can be simplified by using TOC approach. This method would incur the queue of tasks waiting for resources; that is why the queue minimization is needed.

If the organization can provide clear priorities and queue minimization, then the negative effects encountered in the sharing of resource between projects can be minimized.

Nobeoka and Cusumano (1993) write a paper about multi-project management. The purpose of the study is to build multi-project management on this research and explore product-development strategies and organizational processes used in the management of multiple projects. They focus the survey on automobile producer around the world in how to implement the best strategies to manage multi-project in automobile scopes and also to conduct a survey about the influence of each strategy on the performance of the company.

Tanaka on his paper introduces a multi project management model and presents the best practices extracted from the research developed by The Project Management Committee of the Engineering Advancement Association of Japan, the Japanese engineering and construction industry initiative. This researcher team has carried out a research on the state of multi project management and crafted a proposal to capitalize on best practices in this management genre. In the conclusion, Multi-Project Management (MPM) model is successful to differentiate multi-project management from single-project management and to prevent the project manager from aggregation of project management of individual projects.

2.2. The Present Research

The present research focuses on how to solve multi-project management problem in CV Madya Karya in terms of optimizing resource allocation. In the interest of that problem, the methods used are Critical Project Management and Sensitivity Analysis.

Therefore, there are some differences between the present studies from the former studies. The main difference lies in the method of the research to solve multi-project management problem. For the complete differences between the present study from the previous studies can be seen in Table 2.1 below.

Table 2.1. Gap Analysis

Writer	Title	Year	Method	Gap
F. S. Patrick	Critical Chain Scheduling and Buffer Management	1998	<ul style="list-style-type: none">• Critical Chain Scheduling• Buffer Management	No consideration on cost needed and the profitability for the company.
F. S. Patrick	Turning Many Projects into Few Priorities with TOC	1998	<ul style="list-style-type: none">• Theory of Constraint	Not applicable in construction project.
Nobeoka and Cusumano	Multi-Project Management: Strategy and Organization in Automobile Product Development	1993	<ul style="list-style-type: none">• Survey• Questionnaire	Only limited for automobile scope and no explanation for the implementation outside this scope.
Hiroshi Tanaka	Multi Project Management (MPM) at Project-based Companies	2004	<ul style="list-style-type: none">• Enterprise Project Management tools	Excluding the optimal resource allocation for the projects.
