

OPTIMIZING LABOR ALLOCATION IN MULTI-PROJECT MANAGEMENT  
USING CRITICAL PATH METHOD AND SENSITIVITY ANALYSIS  
(Case Study of CV Madya Karya Yogyakarta)

THESIS

Submitted as Partial Fulfill of the Requirements  
To Obtain the Bachelor of International  
Industrial Engineering Degree



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2011

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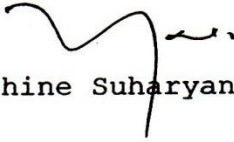
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**OPTIMIZING LABOR ALLOCATION IN MULTI-PROJECT MANAGEMENT USING  
CRITICAL PATH METHOD  
AND SENSITIVITY ANALYSIS  
(A Case Study in CV Madya Karya)**

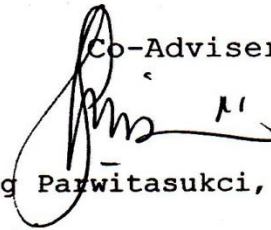
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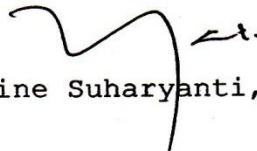
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## FOREWORD

Thank to Jesus Christ, my dearest lord, for the love, blessings, strength, and guidance so that the writer could finally finish this thesis report, entitled **"Optimizing Labor Allocation in Multi-Project Management Using Critical Path Method and Sensitivity Analysis (A Case Study in "CV Madya Karya", Yogyakarta)**. The thesis is made to fulfill one of the requirements to reach bachelor degree of Industrial Engineering from University of Atma Jaya Yogyakarta.

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The background of the page features a large, light gray watermark of the University of the Philippines seal. The seal is circular with a sunburst design in the center and the Latin motto "serviens in lumine veritatis" (serving in the light of truth) written around the perimeter.

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**OPTIMIZING LABOR ALLOCATION IN MULTI-PROJECT MANAGEMENT  
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**Date of Exam : June 14<sup>th</sup> 2011**

**ABSTRACT**

Engineering and construction contractors are typical project-based companies in which project management is the core business competency. However, in fact the contractor organizations do not always perform multi project management satisfactorily. The objective of this research is to optimize the resource allocation in multi-project management.

The methods used are Critical Path Method (CPM) and Sensitivity Analysis. CPM is chosen to optimize the labor allocation and Sensitivity Analysis is used to find the post-optimum solution among alternatives. The object of the research is CV Madya Karya; a small project-based company that provides building construction service.

Some conclusions have been inferred: (1) The critical resource is labor; (2) The optimal solution for Project III is third solution; (3) There are five broad steps to optimize labor allocation in multi-project management. A flowchart of general steps has been developed also to solve similar problem.

**Keywords:** Multi-project management, critical path method, sensitivity analysis, labor allocation