

UNIVERSITI TEKNOLOGI MARA

**Knowledge Acquisition and Model Abstraction
Using Soft Systems Methodology**

Nadiah Atikah Binti Abdullah

Thesis submitted in fulfillment of the requirement for
Bachelor of Science (Hons) Information Systems Engineering
Faculty of Computer and Mathematical Sciences

May 2011

APPROVAL

**KNOWLEDGE ACQUISITION AND MODEL ABSTRACTION USING SOFT SYSTEMS
METHODOLOGY**

BY

NADIAH ATIKAH BINTI ABDULLAH

2008401582

This thesis was prepared under the direction of thesis coordinators, Mrs. Suriyati Binti Razali and thesis supervisor, Assoc. Prof. Aishah Bt Ahmad@Abd Mutalib, Department of System Science and it has been approved by thesis supervisor, Assoc. Prof. Aishah Bt Ahmad@Abd Mutalib. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfillment of the requirements for the degree of Bachelor of Science Hons Information Systems Engineering.

Approved by:

Date: April 29, 2011

.....
Assoc. Prof Aishah Bt Ahmad@Abd Mutalib

Thesis Supervisor

DECLARATION

I certify that this thesis and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline

29 April 2011

Nadiah Atikah Binti Abdullah

Abstract

Knowledge Acquisition and Model Abstraction Using Soft Systems Methodology (SSM) is a thesis project of the application of SSM as an inquiry approach in order to understand the problem situation which support the decision on organizational change that attempt to align their business process with Information System (IS) development. The competitive environment has urged the organization to engage in automating their business from current manual system. The interest lies on Soft Systems Methodology which is concerned about the aspect of the organization as well as the system itself. The project covers four areas of studies which are Knowledge Acquisition, Model Abstraction, Soft Systems Methodology and design in order for the proposed project to produce the expected deliverables. The aim is to apply Soft Systems Methodology as an inquiry approach to the problem situation. The objectives of the project are; to analyze the current business problem situation, graphically described the problem situation, and proposed a conceptual model based on root definition. Soft Systems Methodology is used as problem structuring approach that contributes in designing Conceptual Model as a tool that focused on improvements to organizational problems as well as the Knowledge Acquisition which allow the process of acquiring knowledge in order to seize the overall situation explicitly and Model Abstraction for the process of model conceptualization. The project follows several stages which consist of the Preliminary Study phase, Data Gathering Phase, Data Analysis phase and Design phase. All the phases are conducted in depth in order to achieve the objectives of the proposed project. Conceptual Design concentrates on idealizing the core activities and meets the stakeholder needs. Besides, this project delivers a Conceptual Model that provides an understanding towards the problem situation and support the organization transformation decision.

Keywords: Soft System Methodology, Model Abstraction, Knowledge Acquisition, Conceptual Model

TABLE OF CONTENTS

APPROVAL	ii
DECLARATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
ABBREVIATIONS	ix
LIST OF FIGURES	x
LIST OF TABLES	xi
LIST OF APPENDICES	xii
CHAPTER 1	
INTRODUCTION	
1.0 Research Overview.....	1
1.1 Introduction.....	1
1.2 Research Background.....	1
1.3 Problem Statement.....	3
1.4 Aim	3
1.5 Research Objectives.....	3
1.6 Research Significance	4
1.6.1 Practitioner	4
1.6.2 Researcher.....	4
1.7 Summary.....	5
CHAPTER 2	
LITERATURE REVIEW	
2.0 Literature Review	6
2.1 Introduction.....	6
2.2 Systems Thinking	6
2.3 Knowledge Acquisition.....	8
2.4 Model Abstraction.....	10
2.5 Approaches	11
2.5.1 CAESAR Framework	11
2.5.2 METIS Approach.....	12