

UNIVERSITI TEKNOLOGI MARA

DATA MIGRATION STRATEGY OF  
HETEREGENOUS SYSTEMS

NOOR SYAFIQAH BINTI AB MANAH

MScIT

July 2016

## ABSTRACT

Data Migration has become main project highlight in information technology and computing field for years now. Many companies and organization has benefited from data migration, to make money out of it by selling tools and infrastructure for data migration processes. Note that data migration project required large amount of funding to be carried out, issues and risk of data migration cannot be delivered up to expectation may be a nightmare to the related organization or client. Without correct and suitable data migration strategy, many data migration projects has failed, go over budget or delivered late. This research is hoped to weight out industrial concern on failed data migration project by proposing the Data Migration Strategy of Heterogeneous System. Context of the Data migration project for this research is moving multiple data sources including legacy system, existing system and application into a single target system or platform. This research is hoped to benefit society especially the organization that will go through data migration project of the same scope with this research.

## ACKNOWLEDGEMENT

**"In the name of ALLAH S.W.T. the Most Beneficent and Most Merciful"**

First and foremost, praise upon the Almighty Allah, for giving me the opportunity and strength to complete thesis as a fulfilment of the requirement for the MSC IT. I would like to express my gratitude to all that have helped and support me throughout this research project.

First of all, from bottom of my heart, I would like to dedicate my deepest appreciation to my supervisor, Assoc. Prof. Dr. Haryani Haron who has put a lot of effort to guide me all the way to complete this thesis. Her guidance, ideas, motivation, advice, and criticism are most valuable knowledge in my embracement. Thank You.

I also would like to dedicate my greatest appreciation and gratitude to my beloved husband  
beloved father and my beloved mother  
for their prayers, support and encouragement. This project is one  
of my token of love for them.

Last but not least, thank you to all my friends who always be with me through my hard time .I would also like to thank people who were involved to complete of this research. Thank you so much, May Allah blesses all of us.

Thank You.

## TABLE OF CONTENTS

	<b>Page</b>
<b>AUTHOR'S DECLARATION</b>	i
<b>ABSTRACT</b>	ii
<b>ACKNOWLEDGEMENT</b>	hi
<b>TABLE OF CONTENTS</b>	<b>iv</b>
<b>LIST OF TABLES</b>	vii
<b>LIST OF FIGURES</b>	viii
<b>CHAPTER ONE: INTRODUCTION</b>	
1.1 Introduction	1
1.2 Research Background	1
<b>1.3</b> Research Problem	<b>2</b>
1.4 Research Questions	<b>3</b>
1.5 Research Objectives	<b>3</b>
1.6 Research Scope	<b>3</b>
1.7 Research Significance	<b>3</b>
<b>1.8</b> Report Structure	<b>4</b>
1.9 Summary	<b>4</b>
<b>CHAPTER TWO: LITERATURE REVIEW</b>	
2.1 Introduction	5
2.2 Data, Information and Knowledge	5
2.2.2 Types of Data	6
2.3 Information Technology	7
2.4 Data Migration	9
2.5 Data Migration Method and Approach	9
2.6 Data Migration in Malaysia Public Sector	17

2.7	The Conceptual Data Migration Strategy	17
-----	--	----

### **CHAPTER THREE: RESEARCH APPROACH AND METHODOLOGY**

3.1	Introduction	19
3.2	Research Approach	19
3.3	Research Design	20
3.3.1	Phase 1: Planning and Literature Review Phase	20
3.3.2	Phase 2: Data Collection and Analysis	21
3.3.2.1	Data Collection and Analysis: Interview	22
3.3.2.2	Data Collection and Analysis: Observation	23
3.3.2.3	Data Collection and Analysis: Document Analysis	23
3.3.3	Phase 3: Construction of Data Migration strategy	25
3.4	Research Process	26

### **CHAPTER FOUR: RESEARCH APPROACH AND METHODOLOGY**

4.1	Introduction	28
4.2	Data Collection	28
4.3	Project Background	29
4.3.1	Issues leading to Data Migration as a solution	29
4.4	The Proposed Data Migration Strategy	30
4.4.1	Planning Phase	30
4.4.2	Analysis & Design Phase	31
4.4.3	Implementation Phase	33
4.4.4	Close Out Phase	34
4.5	Summary	36

### **CHAPTER FIVE: CONCLUSION**

5.1	Introduction	37
5.2	Summary of Findings	37
5.2.1	Issues leading to data migration project of Organization K	37