



الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**INFORMATION TECHNOLOGY MANAGEMENT
AND DECISION MAKING IN PUBLIC SECTOR :
FROM THE PERSPECTIVE OF ADMINISTRATIVE
OFFICERS IN THE MINISTRY OF WORKS
MALAYSIA**

BY

UZAILEE BIN ABDUL LATIF

**A PROJECT PAPER SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENT FOR THE
DEGREE OF MASTER OF MANAGEMENT**

**MANAGEMENT CENTER
INTERNATIONAL ISLAMIC UNIVERSITY
MALAYSIA**

NOVEMBER 2000

853218
16/7/03

16/9/03 HJ
24/9 rose

t
HD
30-2
4991
2000

ABSTRACT

This study is an exploratory effort to empirically examine to what extent information technology is utilized to make decisions from the perspective of the administrative officers in the public sector. This study is focussed on the administrative officers in the Ministry of Works. More specifically the study assesses the status of information technology management in the organization, investigates the usage level, perception and attitude towards it in decision making and also explores patterns of association between these variables. A survey in the form of questionnaire was used to secure the primary information for investigating the objective and research questions of the study. Collected data was analyzed using the descriptive statistics, hypothesis testing and correlation. The analysis and the results are limited and confined to the sampling frame only. This study finds that the majority of the respondents use apparatuses and applications of information technology management to make decisions. But most of them are using the conventional ones. They also have relatively high formal training, positive perceptions and favorable attitudes towards information technology management in making decisions. Further investigation found that among the three variables tested for their significance, i.e. the usage status, perception and attitude, the attitude factor plays a significant role in information technology management in making decisions between senior and junior officers. Besides that, the attitude factor also has a significant positive relationship with formal training in information technology management. However, the magnitude and direction of the attitude factor of the administrative officers were not covered by this study. Hopefully, other future studies will undertake the task from here on.

APPROVAL PAGE

TITLE OF PROJECT PAPER : INFORMATION TECHNOLOGY
MANAGEMENT AND DECISION MAKING IN
PUBLIC SECTOR: FROM THE PERSPECTIVE
OF ADMINISTRATIVE OFFICERS IN THE
MINISTRY OF WORKS

NAME OF AUTHOR : UZAILEE BIN ABDUL LATIF


The undersigned certify that the above candidate has fulfilled the condition of the project paper prepared in partial fulfillment for the degree of Master of Management.

SUPERVISOR



Dr. Ahmad Faizul bin Shamsuddin
Date: 30 November 2000

ENDORSED BY



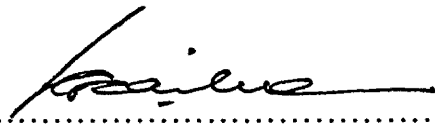
Dr. Junaidah bt Hashim
Head,
Master of Management Program
Date : 30 November 2000



Dr. Obiyatulla Ismath Batcha
Director,
Management Center
International Islamic University Malaysia
Date : 30 November 2000

DECLARATION

I hereby declare that this project paper is the result of my own investigations, except otherwise stated. Other sources are acknowledged by a reference, note and a bibliography is appended.

Signature : 

Name : UZAILEE BIN ABDUL LATIF

Date : 30 November 2000

© Copyright by Uzailee bin Abdul Latif
International Islamic University Malaysia

ACKNOWLEDGEMENT

IN THE NAME OF ALLAH THE MERCIFUL THE COMPASSIONATE

I thanked Allah for giving me strength, courage and inspiration to finish this project paper.

In preparation of this work I have availed myself of the help and kindness of many individuals. In particular, I owe a debt of gratitude to Dr. Ahmad Faizul bin Shamsuddin, my supervisor, without whose guidance and inspiration, this task could not have been undertaken and carried out.

I also wish to acknowledge my indebtedness to all the lecturers, Management Center's staff and colleagues of Master of Management Batch 5 who have been a friend, partner, counterpart and confidant that provided the joy, laughter, advices, tips and source of inspiration throughout the session.

Ibrahim bin Mohd Nor and Ahmad Masduki bin Selamat for being the "back-benchers partner" and "soul provider".

Khairilitov, Shuhaidi and Shashi for providing and easing me up with the crash course of SPSS for Windows Version 10.

Finally, I should record the sacrifices that my wife, Noor Ashikin and children, Asyraf, Aqil and Amirah had to undergo as a result of my endeavors. This work is dedicated to them.

TABLE OF CONTENTS

Abstract	i
Approval Page	ii
Declaration	iii
Copyright Page	iv
Acknowledgements	v
Table of Contents	vi
List of Tables	vii
List of Figures	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Public Malaysian Sector and Information Management System	2
1.2 Administrative Officers in Malaysian Public Sector	6
1.3 Place of Study	9
1.4 The Ministry of Works	9
1.5 Administrative Officers in the Ministry of Works	11
1.6 Statement of Problem	13
1.7 Research Questions and Objectives	14
1.8 Significance of Study	15
1.9 Limitation of Study	15
1.10 Definition of Terms	16

CHAPTER TWO: REVIEW OF LITERATURE	18
A. Theoretical Studies	18
2.1 Decision Making	18
2.2 An Analytical Model of Decision Making Process	19
2.3 Information Technology Management and Decision Making	21
B. Empirical Studies	23
C. Knowledge Economy Studies	25
CHAPTER THREE: METHODOLOGY	29
3.1 Research Design	30
3.2 Population	30
3.3 Sample	31
3.4 Instrument	32
3.5 Item Generation and Reliability	33
3.6 Issue of Validity	34
3.7 Data Collection Procedure	35
3.8 Data Analysis Procedure	36
3.9 Statement of Hypotheses and Hypotheses Testing Method	36
CHAPTER FOUR: DATA ANALYSIS	39
4.1 Respondents Characteristics	39
4.2 Itemized Analysis	42
4.3 Testing of Hypotheses	53
4.4 Summary of Hypotheses Testing Result	63

CHAPTER FIVE: DISCUSSION AND CONCLUSION	65
5.1 Major Findings	65
5.2 Implications	69
5.3 Suggestion for Further Research	71
5.4 Limitation of the Study	73
REFERENCES	74
APPENDIX	

LIST OF TABLES

No.	Table No.	Item	Page
1.	1.1	Approved Allocation for Information Technology Procurement in Public Sector	5
2.	1.2	Category of Administrative Officer in Malaysian Public Sector	8
3.	1.3	Administrative Officers in the Ministry of Works	12
4.	3.1	Sampling Frame of The Study	31
5.	3.2	Statement of Hypotheses and Hypotheses Testing Method	37
6.	4.1	Respondents Characteristics	40
7.	4.2	Responses about Information Technology Management Understanding, Knowledge, Skill and Specialized Knowledge	42
8.	4.3	Sources of Information Technology Management Among the Administrative Officer	44
9.	4.4	Information Technology Management Applications Among the Administrative Officers	45
10.	4.5	The Status Usage of Information Technology Management among the Administrative Officer	47
11.	4.6	The Perception Towards information Technology Management in Decision Making among the Administrative Officer	48
12.	4.7	The Attitude Towards information Technology Management in Decision Making among the Administrative Officer	49
13.	4.8	The Quality of Information Generated from Information Technology Management in Decision Making among the Administrative Officer	51
14.	4.9	Result of Test of Hypothesis 1	54
15.	4.10	Result of Test of Hypothesis 2	55
16.	4.11	Result of Test of Hypothesis 3	56
17.	4.12	Result of Test of Hypothesis 4	57
18.	4.13	Result of Test of Hypothesis 5	58
19.	4.14	Result of Test of Hypothesis 6	59
20.	4.15	Result of Test of Hypothesis 7	60
21.	4.16	Result of Test of Hypothesis 8	61
22.	4.17	Result of Test of Hypothesis 9	62
23.	4.18	Summary of Hypotheses Testing Result	63

LIST OF FIGURE

No.	Figure	Item	Page
1.	2.1	The Traditional Analysis Model of Decision Making	20

CHAPTER ONE

INTRODUCTION

The Public Sector in Malaysia is generally viewed as a bureaucracy. Bureaucracy predominates modern organizations. According to Weber (Garth & Mills, 1946), bureaucratic organizations are necessary for the maintenance of the legal and economic order in the modern society. Bureaucracy is the mechanism by which the state carries out its activities and achieves its goal. It is also responsible for maintaining law and order and carrying out day-to-day operations, executing policies and is involved in decision-making.

According to Fritz Marx (1983), a bureaucracy is able to influence the decisions and policies of a country's national development because of the key position that it occupies and the experience, skill and the resources that it has.

But for being a bureaucracy, the public sector in Malaysia cannot escape from being labeled as slow, unresponsive and indecisive, that causes a series of administrative problems. Administrative problems linked to communications and information quality, i.e. accessibility to and the quantity, timing and accuracy of information, have been cited as major obstacles to effective social and economic development (Bone, 1992).

Bone argued that information should play a major role in the development process. He defined information as *“any input that can be processed intellectually or cognitively for the development of meaning. Meaning indicates something that contributes to problem solving or decision making”* (page 228). He sees information as a resource such as capital, raw material, labor and technology that must be used and utilized in order for development to take place.

Buckholtz (1995) stressed that relevant, accurate, complete, convenience and timely information are the prerequisite for good decision making.

1.1 Malaysian Public Sector and Information Technology Management

Much has been done lately to further improve the performance of the public sector in Malaysia. In his keynote address at the 4th National Conference On The Civil Service in 1999, Tan Sri Abdul Halim Ali, the former Chief Secretary To The Government said that with the world experiencing such a rapid change resulting in globalization and relentless advance of technology in information, the challenge for the public sector to adapt to the changes is enormous. Old work habits and work processes must give way to new ones that are more efficient and productive, exploiting the full potential of information and multimedia technology.

The nation is witnessing the dawn of a new era with the advent of Multi Media Super Corridor (MSC). It is a strategy that will enable Malaysia to leap-frog into the information age which will hasten the realization of Vision 2020. The introduction of the electronic government, one of the seven flagship applications in the MSC, proves a tremendous challenge to the public sector and civil servants. It calls for a change in work habits and massive training programs in computer literacy.

Halim Shafie & Rebecca Fatima Sta Maria (1997) hoped that personnel in the public sector will view information technology management as an enabling tool to upgrade the quality of work and performance.

There are three (3) main factors contributing towards the growing inclination in using information technology among the public sector (Ahmad Sarji, 1994). The first, was strong emphasis given to quality and productivity in the public sector during the last few years. Secondly, the implementation of quality and productivity programs in public sector, for example, counter services, project management and micro accounting, requires the use of computers for their improvements. As such, the expansion in the use of information technology in public sector. Thirdly, the introduction of how administrative modernization programs have led to a significant paradigm shift in the public sector characterized by, for example:

- a. increased competitiveness in the delivery of the public sector.
- b. increased orientation of public sector towards result and performance for improved services to the public.

Ahmad Sarji also stressed that information technology should no longer to be viewed solely in the context of transaction processing or management information system but also in terms of their capability to improve performance of individuals in the organizations, especially the administrative officers.

The importance and significance of information technology in facing global challenges has led the government to increase the expenditure in acquiring the right hardware, software, telecommunication apparatus, system development and other value-added services.

The recent Asian economic crisis has affected the information technology implementation and usage in the public sector. This is clearly shown by the Table 1.1 where approved budget for information technology procurement in the public sector has declined about 27.23% in 1998 and 0.58% in 1999.

Table 1.1

Approved Allocation for Information Technology Procurement In Public Sector

Year	Approved Allocation (RM)
1997	556.22 million
1998	404.74 million
1999	402.38 million

Source: Malaysian Administrative Modernization Planning Unit (MAMPU),
Prime Minister Department.

But the above setback did not deter the government from its commitment in fulfilling the vision of creating an efficient government using information technology.

Government and public sector realized that successfully managing information technology has become crucial (McNurlin & Sprague, 1999). Lately, the government has realized that acquiring the essential skills in information and communication technology is a must in order to catch up and move towards a new trend of knowledge-based economy.

The implication of the knowledge economy is that there is no alternative to prosperity than to make learning and knowledge-creation of prime importance. Learning means not only using new information technologies to access global knowledge, but also

using them to communicate with other people and being involved in an innovation. This is what happened to the public sector in Malaysia. The working environment has changed. With the government orientation to serve public efficiently with high quality service, the information and telecommunication technologies have become the enabler to the intended changes.

One immediate effect of the emergence of information and telecommunication technologies is the reinventing of the government. This resulted in internal restructuring and the process of rightsizing in the Malaysian public sector to cope with the changes and challenges to face the knowledge economy. It has been proven that organizations that are knowledge-based are more innovative, more responsive to customer needs, have increased their productivity and enhanced competency of the people in organizations (Halim, 1999).

1.2 Administrative Officers In The Malaysian Public Sector

The main duties of administrative officers in the Malaysian public sector are to carry out the task of formulating administration and national development policy, implementing the strategies outlined, preservation of law and order and facilitating development of industries and trade.

These tasks are performed not only by the administrative officers from administrative service but also performed by other services, such as the military, police, doctors and other professionals. In the end, there is no clear mark or boundary to differentiate between them.

In 1992, the government launched and enforced the implementation of “Sistem Saran Baru (SSB)” or New Remuneration Scheme (NRS). It is a comprehensive and integrated approach to increase the managerial abilities of personnel in public sector in the areas of professionalism, quality and productivity.

Under the NRS, the structure of various services have been revamped into nineteen (19) service classification, three (3) tier of service groups and service schemes being reduced from 574 to 277.

Under the NRS also, the role of an administrative officer is spelled out clearly.

The service scheme entrusted in administrative matters are as follows:

- a. administrative and diplomatic service
- b. administration and support group service

These two (2) services known also with alphabetical code of M for Administrative And Diplomatic Service and N for Administration and Support Group Service.

The officers from these two services perform administrative routines as well as running day-to-day operations in most ministries, departments and units in the public sector. They are known as stated below:

Table 1.2

Category of Administrative Officer In Malaysian Public Sector

No.	Category	Service Scheme	Grade	Entry Qualification
1.	Executive Officer	N	6 & 5	Diploma
2.	Junior Administrative Officer	i. M ii. N	3 3	First Degree
3.	Senior Administrative Officer	i. M ii. N	2 & 1	Promotional Post

Senior officers of Grade 1 when further promoted, their service scheme is then known as “**Jawatan Utama Sektor Awam (JUSA)**” or **Public Sector Premier Post**. Most of them are from the Administrative and Diplomatic Services.

For the purpose of this study, the focus will be on the Administrative Officers of Grade 1,2,3,5 and 6. These officers represent the middle level of the management pyramid or hierarchy. At this level, many in-flow and out-flow of information and transaction has occurred. Many decision making processes take place, providing the output for the consumption of the top management. These administrative officers, besides

doing administration duties, also serve as leaders, head of divisions or units, managers, planners and policy makers.

The Malaysian public sector has always been sensitive to its operating environment. Halim (1999) said that numerous administrative reform measures have been undertaken, such as focusing on quality, productivity, elimination of bureaucratic red tapes, organizational restructuring and right sizing and the impact of information technology. This is reflected in the shift towards high-skill, high technology and service-based growth (Bank Negara Annual Report 1999).

1.3 Place of Study

This study will focus on the administrative officers in The Ministry of Works as sample and respondents.

1.4 The Ministry of Works

The Ministry of Works was established with the objective to formulate, plan and implement policies in the development of infrastructure and public utilities in order to fulfill the requirements of the social and economic development of the country particularly its rural areas in line with National Development Policy.

Other objectives are to mainly improve and upgrade existing infrastructure and public utilities.

The functions of The Ministry of Works are as follows:

- a. To plan, supervise and implement the budget of the Ministry in line with the National Budget System.
- b. To provide qualified, trained and efficient staff in order to carry out the responsibilities efficiently.

There are three (3) agencies placed under the Ministry of Works, as follows:

- a. Public Works Department (PWD)/"Jabatan Kerja Raya (JKR)"
- b. Malaysian Highway Authority (MHA)/"Lembaga Lebuh Raya Malaysia (LLM)"
- c. Construction Industry Development Board (CIDB)/"Lembaga Pembangunan Industri Pembinaan Malaysia (LPIPMM)"

The Ministry of Works consists of several divisions and units, as follows:

- a. Administration and Building Maintenance Division
- b. Finance and Account Division
- c. Human Resource Management Division
- d. Development and Implementation Division
- e. Highway Planning Unit
- f. Legal Affairs Unit
- g. Internal Audit Unit
- h. External Audit Unit
- i. Information Technology Unit
- j. Entrepreneur Development Unit
- k. Public Relations Unit

1.5 Administrative Officers in The Ministry Of Works

The administrative officers in the Ministry of Works which is subject of the study is as in Table 1.3 :

Table 1.3

Administrative Officers in the Ministry of Works

No.	Category	Designation	Grade
1.	Senior Administrative Officer	a. Division Secretary	1
		b. Principal Assistant Secretary	2
2	Junior Administrative Officer	Assistant Secretary	3
3	Executive Officer	Executive Officer	5 & 6

Source : "Anggaran Belanjawan Mengurus Persekutuan Tahun 2000"

It is to note that throughout the study, especially for hypotheses testing, the level of officers will be divided into two (2) categories of Senior Officer and Junior Officer. Senior Officer consists of Division Secretary and Principal Assistant Secretary of Grade 1 and 2 respectively. While Junior Officer will be Assistant Secretary and Executive Officer of Grade 3 and Grade 5 and 6 respectively.