Universiti Teknologi MARA

INFORMATION ARCHITECTURE FRAMEWORK FOR FTMSK: E-ACTIVITY

Nor Faradilla Bt Mohamed Idris 2005617082

Thesis submitted in fulfillment of the requirements for Bachelor of Science (Hons) Information System Engineering Faculty of Information Technology And Quantitative Science

MAY 2008

ACKNOWLEDGEMENTS

In the name of Allah the most Gracious and the most Merciful May His blessing be upon the Prophet Muhammad s.a.w

I would like to express my deep gratitude to Allah S.W.T, for He has bestowed me with ideas, strength, opportunity and He has opened up some peoples' heart to assist me in my task. Without it, I might be lost until today.

My gratitude also goes to all individual and group of people that involved directly and indirectly in this final project especially to my beloved supervisor Pn Wan Nor Amalina Wan Hariri for her patient, guidance, opinions and valuable advice. To PM Rashidah Rawi and Pn Jamaliah Tasnim, my thesis coordinator, for the entire positive comments that they gave to me. To Cik Rosdiana Abd Razak, my program coordinator for some ideas, support and assistance.

My personal gratitude goes to my family, and my friends for all the unceasing moral support and tolerance that they gave me.

Thank you everyone. May Allah bless all of us.

Nor Faradilla Bt Mohamed Idris BSc (Hons) Information System Engineering UiTM Malaysia, May 2008.

TABLE OF CONTENT

DECLARATION	īi
APPROVAL	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENT	v
LIST OF TABLE	viii
LIST OF FIGURES	ix
ABSTRACT	x
CHAPTER 1	1
INTRODUCTION	1
1.1 Introduction	1
1.2 Research Background	1
1.3 Problem Statement	5
1.4 Objectives of the research	6
1.5 Project Scope	6
1.6 Significance	6
1.7 Summary	7
CHAPTER 2	8
LITERATURE REVIEW	8
2.1 Introduction	8
2.2 Definition of Architecture	8
2.3 What is Information Architecture	9
2.4 Components of Architecture	10
2.4.1 Data Architecture	10
2.4.2 Integration Architecture	11
2.4.3 Application Architecture	12
2.5 Characteristics and criteria of good framework	14
2.5.1 Mature runtime functionality	14
2.5.2 Support for extensibility, tailorability, customizability	15
2.5.3 A workflow management metaphor and enduring business process	16
2.5.4 Mature framework documentation	17

2.5.5 Support for the role object pattern and ease of use	18
2.6 Types of framework	18
2.6.1 The Open group architectural framework (TOGAF)	19
2.6.2 Federal enterprise architecture framework (FEAF)	21
2.6.3 Treasury enterprise architecture framework (TEAF)	23
2.7 Conclusion of framework chosen	25
2.8 Data Reference Model (DRM)	26
2.8.1 Data Description	28
2.8.2 Data Context	29
2.8.3 Data Sharing	30
2.9 Summary	31
CHAPTER 3	32
METHODOLOGY	32
3.1 Introduction	32
3.2 Research Approach	33
3.3 Description of phases	.34
3.3.1 Problem assessment and research study phase	34
3.3.2 Knowledge acquisition phase	35
3.3.3 Data analysis phase	41
3.3.4 Knowledge modeling phase	43
3.3.4.1 Data Description Model for E-activity system	44
3.3.4.2 Data Context Model for E-activity system	45
3.3.4.3 Data Sharing Model for E-activity system	46
3.3.5 Framework development phase	47
3.4 Summary	49
CHAPTER 4	50
FINDINGS	50
4.1 Introduction	50
4.2 Discussion and findings	50
4.2.1 First Objective: To identify requirements needed to develop	e-activity
system	51

ABSTRACT

E-activity is a system which is developed to ease the process of activities application by the students. In the mean time, it could help the administration department to manage the process of application effectively and within a short time. Since there is no automated system to handle application process to apply activities in FTMSK, therefore there is a need to develop the system so that it could help FTMSK society to work more efficiency and effectively. However, this research focuses on developing information architecture framework for the eactivity system as it can be a guide for developer to have an overview of the overall e-activity before the development of the system can be done. Thus, the objective of the research is to identify requirements needed to develop e-activity, followed by to identify and select the suitable framework and finally to adapt the framework chosen into the e-activity system. Opinions and response have been obtained through observations and interviews with related persons in order to get the requirements for the system which has been studied and analyzed. In addition, the framework that has been selected from the comparison of Federal Enterprise Architecture Framework (FEAF), Treasury Enterprise Architecture Framework (TEAF) and The Open Group Architectural Framework (TOGAF) was FEAF. Five interrelated models was included in FEAF, however Data Reference Model (DRM) has been adapted and used since the model was suitable to information architecture. It consisted of three standardization areas which were Data Description, Data Context and Data Sharing. Therefore, the result of this research showed t hat the information architecture framework for e-activity system was constructed based on three standardization areas as stated before. Besides, suitable recommendations were outlined and proposed as the result of the research. These recommendations will be proposed to be implemented by the FTMSK in order to ensure its effectiveness as a whole.