

UNIVERSITI TEKNOLOGI MARA

**FROM TRADITIONAL DRY-ERASE BOARD TO VIRTUAL
CONTEXT-AWARE DIGITAL WHITEBOARD**

HAJAR IZZATI BINTI MOHD GHAZALLI

Dissertation submitted in partial fulfilment of the requirement
for the degree of
Master of Science (Computer Science)

Faculty of Computer & Mathematical Sciences

January 2014

AUTHOR'S DECLARATION

I hereby declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

In the event that my thesis is found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

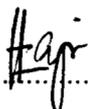
Name of Student : Hajar Izzati binti Mohd Ghazalli

Student's ID No : 2012420026

Programme : CS777 – Master of Science (Computer Science)

Faculty : Faculty of Computer and Mathematical Sciences

Dissertation Title : From Traditional Dry-Erase Board to Virtual Context-aware Digital Whiteboard

Signature of Candidate 

Date : 21 January 2014

ABSTRACT

Context-aware is the ability of an application reacts to changes of the environment. Context-aware applications, like smart systems are rapidly developed recently. Unknowingly, context-aware applications are more common in one's daily life. Traditional dry-erase whiteboard is an example of convention context-aware method in office environment to record staff activities. There are four (4) main problems of the usage of traditional whiteboard in displaying academic staffs' status in the office: (1) Limited time to update the information. (2) Non-real time information. (3) Limited space to write. (4) No data storage. Therefore, a Context-aware Digital Whiteboard (CAW) is proposed to solve the problems of traditional dry-erase whiteboard in administrator office of Faculty of Computer and Mathematical Sciences (FSKM). The proposed system embeds context-aware elements that able users to be more conscious of what activities currently are going on in the workplace. In summary, the whiteboard is able to report the presence of staffs' in related activities throughout years.

ACKNOWLEDGEMENT

Alhamdulillah, praises to Allah, Lord of Al-Mighty, for His Guidance and will, for the revelation of some of His knowledge for me in the successful to develop this research.

I would like to acknowledge my supervisor, Dr. Nasiroh Omar, because without her help this research would not have been possible. I would like to acknowledge her for giving me the instructions, advices, motivation, support and guidance in developing this research. I would also like to thank my best friends (Andra, Atiqah, Hamiz and Bakri) and classmates (Kamaliah, Farhana, Muna, Syairah, Seha, Syed and Fikri) for their never ending supports and helpful suggestions.

I would also like to thank my mother and my siblings who have given a lot of support and motivation throughout the time. Not forgetting to mention and extend thanks to all friends and others for their opinions, supports, suggestions and cooperation to do this research.

TABLE OF CONTENTS

AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER I INTRODUCTION	
1.0 Introduction	1
1.1 Background	1
1.2 Problem Statement	2
1.3 Research Objective	3
1.4 Scope and Limitation	3
1.5 Significance of Project	3
1.6 Summary	4
CHAPTER II LITERATURE REVIEW	
2.0 Introduction	5
2.1 Context-aware	5
2.2 Administration in Office Environment	6
2.2.1 Traditional Office	7
2.2.2 Smart Office	10
2.3 Academic Staff	11
2.4 Related Works	11
2.4.1 In/Out Board	12
2.4.2 Context-Aware Mailing List	13
2.4.3 Pervasive Healthcare Project	13
2.4.4 Hospital Mobile Communication	14
2.4.5 Pervasive Healthcare	14
2.4.6 Emergency Department Status Boards	15
2.4.7 MobileWard	16
2.4.8 Classroom 2000	16
2.4.9 Open Smart Classroom	16
2.4.10 Aware Home	17