UNIVERSITI TEKNOLOGI MARA

DESIGNING HALAL-ÇHECKER MOBILE APPLICATION (I-SCAN) USING CONTEXTUAL DESIGN MODEL

NOOR DINA WAHID

Report submitted in partial fulfillment of the requirements for the degree of

Master of Science (Information Technology)

Faculty of Computer and Mathematical Sciences

January 2014

ABSTRACT

Nowadays there are varieties of imported food products available in the market and most food manufacturers are monopolized by non-Muslims. There are still cases of misused of the halal logo by irresponsible traders and most imported food products used number coded food addictives or e-numbers. It is a very challenging process to determine the Muslim consumers's expectation and needs to solve this matter especially when travelling abroad and when e-code or e-number is visible in the food products. The main objective of this project is to design Halal-Checker Mobile Application using Contextual Design Model. The results shown in this study are; (i) contextual design processes and (ii) prototype of Halal-checker mobile application. Future work involve usability evaluation of halal-checker mobile application.

Keywords: E-numbers, Muslims Consumer, Contextual Design Model, Halal-Checker Mobile Application

ACKNOWLEDGEMENT

"In the Name of ALLAH, the Most Merciful, the Most Gracious"

Alhamdulillah, thanks to ALLAH S.W.T for giving me the time, strength, inspiration, perseverance and patience and whose permission has made the completion of this report possible.

This report could not been completed without the guidance, support, understanding and encouragement of many individuals. I would like to express my heartfelt gratitude and sincere appreciation to my supervisor Dr Wan Abdul Rahim Bin Wan Mohd Isa for his invaluable knowledge, tireless guidance, boundless patience and continuous support rendered throughout every phase of this report project.

I also want to express my gratitutes to all my friends, for their continuous support and friendship throughout this study. A special gratitutes to my friend and classmate, Siti Baya and Farah Hanim, for becoming my source of strength and will.

Not forgetting very special thanks to all the participants that sincerely willing to sacrifice their time for the contextual inquiry sessions. This study would have been harder without their help.

Finally, I wish to express a very special appreciation to all my family for their love, patience and their constant support that they have presented when I encountered difficulties during this study. With love, I am dedicating this work to them.

Wassalam. Thank You

TABLE OF CONTENTS

	Page
STUDENT'S DECLARATION	i
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	ix
CHAPTER 1: INTRODUCTION	
1.1 Project Background	2
1.2 Problem Statement	4
1.3 Aim	4
1.4 Objectives	4
1.5 Scope	5
1.6 Project Significance	5
1.8 Project Design	6
1.9 Outline of the Report	6
CHAPTER 2: LITERATURE REVIEW	
2.1 User-Centered Design	8
2.2 UCD Models and Approaches	9
2.2.1 The importance of UCD	11
2.3 Principles of User-Centered Systems Design	12
2.4 Methods of UCD	13
2.5 Contextual Design	15
2.5.1Contextual Inquiry	16
2.5.2 Interpret and Work Model	16
2.5.3 Affinity & Work Model Consolidation	17
2.5.4 Vision & Storyboard	17
2.5.5 User Environment Design	17

2.5.6 Paper Prototype	18
2.6 Mobile Technology	18
2.6.1 Optical character Recognition Overview	20
2.6.2 Principle of OCR	22
2.7 Overview of Halal Food	22
2.7.1 Islamic Dietary Terms	23
2.7.1.1 Halal	23
2.7.1.2 Haraam	24
2.7.1.3 Mushbooh	25
2.8 Overview of E-Numbers	25
2.8.1 E-numbers and Halal food	27
2.9 Conclusion	28
CHAPTER 3: METHODOLOGY	
3.1 Project Approach	29
3.2 Phase 1: Investigate requirements Halal-Checker	
Mobile Application (I-Scan)	30
3.2.1 Contextual Inquiry	30
3.2.1.1 Setting project focus	31
3.2.1.2 Planning contextual interviews	31
3.2.2 Work Model	33
3.2.3 Consolidation	33
3.2.4 Persona	34
3.3 Phase 2: Design Halal-Checker Mobile Application	
using Contextual Design Model	34
3.3.1 Visioning	34
3.3.2 User Environment Design	35
3.4 Phase 3: Develop Halal-Checker Mobile Application	35
3.4.1 Prototype	35
3.5 Conclusion	35