REQUIREMENT MODEL FOR SMALL AGRIBUSINESS WEB-BASED MARKETING SYSTEM

IBRAHIM MOHAMED KHALIFA

UNIVERSITI UTARA MALAYSIA
2006
REQUIREMENT MODEL FOR SMALL AGRIBUSINESS WEB-BASED MARKETING SYSTEM

A thesis submitted to the Faculty of Information Technology in partial fulfillment of the requirement for the degree Master of Science (Information Communication and Technology)

University Utara Malaysia

By

Ibrahim Mohamed Khalifa

© Ibrahim Mohamed Khalifa, October 2006. All rights reserved
Saya, yang bertandatangan, memperakukan bahawa (I, the undersigned, certify that)

IBRAHIM MOHAMED KHALIFA

calon untuk ijazah (candidate for the degree of) MSc. (ICT)

telah mengemukakan kertas projek yang bertajuk (has presented his/her project paper of the following title)

REQUIREMENT MODEL FOR SMALL AGRIBUSINESS WEB-BASED MARKETING SYSTEM

seperti yang tercatat di muka surat tajuk dan kulit kertas projek (as it appears on the title page and front cover of project paper)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan. (that the project paper acceptable in form and content, and that a satisfactory knowledge of the filed is covered by the project paper).

Nama Penyelia Utama (Name of Main Supervisor): MRS. NORLIZA KATUK

Tandatangan (Signature) : ___________________________ Tarikh (Date): 17/10/06

Nama Penyelia Kedua (Name of 2nd Supervisor): ASSOC. PROF. DR. WAN ROZAINI SHEIK OSMAN

Tandatangan (Signature) : ___________________________ Tarikh (Date): 18/10/06
PERMISSION TO USE

In presenting this thesis, the author agrees that Universiti Utara Malaysia's library may make this thesis freely available for reference and inspection. The author further agrees that permission for photocopying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by the author's supervisor or, in her absence, by the Dean of the Faculty of Information Technology. It is understood that any photocopying, publication, use of this thesis, or parts thereof for financial gain shall not be allowed without the author's written permission. It is also understood that, due recognition shall be given to the author and Universiti Utara Malaysia for any scholarly use of the materials presented in this thesis.

Permission for photocopying or other use of materials in this thesis, in whole or in parts, should be addressed to.

Dean of Faculty of Information Technology

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman
ABSTRACT

The information and communication technology (ICT) provides a good channel to communicate information among businesses. By using this mean, information can be dispersed across geographical boundary and without time constraint. The major ICT applications such as email and web-sites allow businesses to expand their products to the larger market size. Email and web-site can be very cost effective product marketing strategy especially for small and medium enterprises (SME). This kind of marketing strategy has been implemented in various countries for various kinds of products and services. However, the implementation of web-based marketing for small agribusiness enterprises is quite new. This research is intended to discuss the requirement model for small agribusiness web-based marketing system.
ACKNOWLEDGEMENT

I would like to express my thanks gratitude to Allah, the most Beneficent, the most Merciful whom granted me the ability and willing to start and complete this project. I pray to this greatness to inspire and to enable me to continue the work for the benefits of my country and especially for Muslims country.

I am deeply indebted to my supervisors, Mrs Norliza Katuk and A.P.Dr Wan Rozaini Sheikh Osman for their continuous and encouragement helped at all times during the project development and the writing of this thesis.

I would also like to express thanks to lecturers and former classmates of Msc. ICT programme and also the ICT lecturers who supported me towards the completion of this project.

Finally, I would like to give my special thanks to my parents, sisters and brothers and also my beloved family whose love and patience provide me the strength to go through the work. May Allah bless all of you.
TABLE OF CONTENTS

PERMISSION TO USE i
ABSTRACT (ENGLISH) ii
ACKNOWLEDGEMENT iii
TABLE OF CONTENTS iv
LIST OF TABLES v
LIST OF FIGURES viii
LIST OF ABBREVIATIONS x
LIST OF APPENDICES ix

CHAPTER ONE : INTRODUCTION

1.1 Problem Statement 2
1.2 Research Objectives 3
1.3 Scope of Study 3
1.4 Significant Of Study 3
1.5 Conclusion 3
CHAPTER TWO : LITERATURE REVIEW

2.1 Introduction 4
2.2 Marketing strategy 4
2.3 Web-based 6
2.4 Small and medium enterprises (SME) 10
2.5 Main functions of web-based marketing strategy 13
2.6 Unified Modeling Language UML 17

CHAPTER THREE : RESEARCH METHODOLOGY

3.1 Introduction 20
3.2 Awareness of Problem 21
3.3 Requirements Gathering 21
3.4 Prototype Development 21
3.5 Test of Requirement Model 21
3.6 Conclusion of the Project 22
3.7 Time Schedule 22
3.8 Conclusion 22
CHAPTER FOUR : REQUIREMENT ANALYSIS FOR WEB-BASED MARKETING FOR SMALL AGRIBUSINESS

4.1 Introduction 23
4.2 Use Case Specification 23
4.3 Definition of Actor 24
4.4 Definition of Use case 25
4.5 Use case Specification 25
4.6 Activity diagrams 31
4.7 Class Diagram 34
4.8 Sequence diagram 35
4.9 Collaboration Diagram 47

CHAPTER FIVE : PROTOTYPE DEVELOPMENT

5.1 Introduction 52
5.2 User interface prototype 52
5.3 Main page interface 53
5.4 Login interface 54
5.5 Home interface 55
5.6 List of Products interface 56
5.7 Advertisement interface 57
5.8 Search engine interface 58
5.9 Testing 59
5.10 Conclusion 59
CHAPTER SIX : DISCUSSION AND CONCLUSION

6.1 Introduction 60
6.2 Limitations 60
6.3 Recommendation of the project 61
6.4 Summary 61

REFERENCES 62

APPENDIX : SOFTWARE REQUIREMENTS SPECIFICATION 65
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table No.</th>
<th>Name of Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>Functions of web-based marketing strategy model</td>
<td>14</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>List of Actors</td>
<td>25</td>
</tr>
<tr>
<td>Table 4.2(a)</td>
<td>Use case description for login</td>
<td>26</td>
</tr>
<tr>
<td>Table 4.2(b)</td>
<td>Use case description for add/edit/remove product info</td>
<td>27</td>
</tr>
<tr>
<td>Table 4.2(c)</td>
<td>Use case description for supply product info</td>
<td>27</td>
</tr>
<tr>
<td>Table 4.2(d)</td>
<td>Use case description for product listing</td>
<td>28</td>
</tr>
<tr>
<td>Table 4.2(e)</td>
<td>Use case description for information management</td>
<td>29</td>
</tr>
<tr>
<td>Table 4.2(f)</td>
<td>Use case description for perform service</td>
<td>30</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure No.</th>
<th>Name of Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 3.1</td>
<td>The General Methodology of Design Reasoning</td>
<td>20</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>Use case diagram for web-based marketing strategy</td>
<td>24</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Activity diagram for the SME</td>
<td>32</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>Activity diagram for Administrator</td>
<td>33</td>
</tr>
<tr>
<td>Figure 4.4</td>
<td>Class diagram</td>
<td>34</td>
</tr>
<tr>
<td>Figure 4.5(a)</td>
<td>Sequence diagram for login</td>
<td>36</td>
</tr>
<tr>
<td>Figure 4.5(b)</td>
<td>Sequence diagram for add/edit/remove</td>
<td>37</td>
</tr>
<tr>
<td>Figure 4.5(c)</td>
<td>Sequence diagram for SME</td>
<td>38</td>
</tr>
<tr>
<td>Figure 4.5(d)</td>
<td>Sequence diagram for Administrator</td>
<td>39</td>
</tr>
<tr>
<td>Figure 4.5(e)</td>
<td>Sequence diagram for</td>
<td>40</td>
</tr>
<tr>
<td>Figure 4.5(f)</td>
<td>Sequence diagram for</td>
<td>41</td>
</tr>
<tr>
<td>Figure 4.5(g)</td>
<td>Sequence diagram for SME</td>
<td>42</td>
</tr>
<tr>
<td>Figure 4.5(h)</td>
<td>Sequence diagram</td>
<td>43</td>
</tr>
<tr>
<td>Figure 4.5(i)</td>
<td>Sequence diagram for</td>
<td>44</td>
</tr>
<tr>
<td>Figure 4.5(j)</td>
<td>Sequence diagram for</td>
<td>45</td>
</tr>
<tr>
<td>Figure 4.5(k)</td>
<td>Sequence diagram for</td>
<td>46</td>
</tr>
<tr>
<td>Figure 4.6(a)</td>
<td>Collaboration Diagram for Login</td>
<td>47</td>
</tr>
</tbody>
</table>
Figure 4.6 (b)  Collaboration Diagram for add/edit/remove product info  48
Figure 4.6 (c)  Collaboration Diagram for supply product info  48
Figure 4.6 (d)  Collaboration Diagram for supply product info (Admin)  49
Figure 4.6 (e)  Collaboration Diagram for product listing  49
Figure 4.6 (f)  Collaboration Diagram for info management  50
Figure 4.6 (g)  Collaboration Diagram for E-mail service  50
Figure 4.6 (h)  Collaboration Diagram for advertisement service  51
Figure 5.1  Main interface for small Agribusiness web-based marketing system  53
Figure 5.2  Login interface for small Agribusiness web-based marketing system  54
Figure 5.3  Home interface for small Agribusiness web-based marketing system  55
Figure 5.4  List of Products interface for small Agribusiness web-based marketing system  56
Figure 5.5  Advertisement interface for small Agribusiness web-based marketing system  57
Figure 5.6  Search engine interface for small Agribusiness web-based marketing system  58
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SME</td>
<td>Small and medium enterprises</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and communication technology</td>
</tr>
<tr>
<td>UML</td>
<td>Unified Modeling Language</td>
</tr>
<tr>
<td>ASP</td>
<td>Active Server Pages</td>
</tr>
</tbody>
</table>
CHAPTER ONE
INTRODUCTION

The growth of Internet technology offers lot of advantages to individuals and enterprises. For enterprises, advantages can be observed from various aspects of business. Marketing is the major business activities that can utilize this technology. Through Internet, enterprises will be able to expand their business coverage while diminish marketing expenses. The global market provides the enterprises a great challenge to improve their services, therefore the quality of product and services will be the first priority.

The new service offered by Internet is the web-based application services. Web-based provides flexible communication channel between enterprises and customers. Marketing strategy using web-based technology is now gained attention among small and medium enterprises (SME). The web has created a new revolution in marketing by providing much more than just a medium through which organizations can communicate with the public (Palmer & Griffith, 1998). It created a new marketing arena, complete with a new distribution structure, moving enterprises closer to their customers.

In Malaysia, adoption of web-based marketing among SME is quite low. If we look into
The contents of the thesis is for internal user only.
REFERENCES


