

WEB-BASED ORDERING MANAGEMENT SYSTEM

A thesis submitted to the Graduate School in
partial fulfillment of the requirement for degree
Master of Science (Information Technology),

University Utara Malaysia

by

Tham Si Si

Copyright Tham Si Si, 2003. All rights reserved



**Sekolah Siswazah
(Graduate School)
Universiti Utara Malaysia**

**PERAKUAN KERJA KERTAS PROJEK
(Certification of Project Paper)**

Saya, yang bertandatangan, memperakukan bahawa
(I, the undersigned, certify that)

THAM SI SI

calon untuk Ijazah
(candidate for the degree of) Sarjana Sains (Teknologi Maklumat)

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

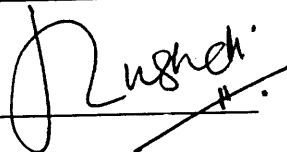
WEB-BASED ORDERING MANAGEMENT SYSTEM

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 field is covered by the project paper).*

Nama Penyelia
(Name of Supervisor) : Encik Mohd. Rushdi Idrus

Tandatangan
(Signature) :



Tarikh
(Date) :

21/5/2003

PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purposes may be granted by my supervisors(s) or, in their absence, by the Dean of the Graduate School. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to:

**Dean of Graduate School
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman**

ABSTRAK (BAHASA MALAYSIA)

Dengan perkemabangan pesat Internet, sistem memesan produk manual bukan lagi **cara** yang efektif dan efisien untuk membuat **pesanan** dan sistem ini **amat** bergantung kepada tenaga manusia. Oleh itu, “Web-based Ordering Management System” merupakan **cara** yang terbaik untuk peniaga mempromosikan barang mereka. Ini membolehkan mereka berinteraksi secara terus dengan pelanggan.

Projek ini bertujuan menghasilkan satu sistem yang efisien dan efektif untuk menggantikan **cara** traditional untuk memesan produk. Dengan “Web-based Ordering Management System” membolehkan pelanggan memesan produk kegemaran mereka **melalui** Internet. Selain itu, projek ini juga bertujuan untuk membangunkan **satu** sistem berkos **rendah**, senang dikendali dan “user-friendly” untuk produk kesihatan di Malaysia.

ABSTRACT (ENGLISH)

With the huge grow of the Internet, the traditional way of ordering system may not be effective and efficient to handle the sales order and there are highly human dependent. So, Web-based Ordering Management System is a great way of business to promote them as it enables them to communicate their message directly to the target customer.

This project aims to deliver an efficient and effective system to replace the traditional way of ordering system. With this Web-based Ordering Management System enable the customer to order their preference products through web. Besides that, this project also aims to develop a low cost, easy to maintain and user-friendly windows based Ordering Management System for Health Care Product Company in Malaysia.

ACKNOWLEDGEMENTS

Firstly, I would like to express my appreciation to my supervisor, Encik Mohd. Rushdi Idrus for his constructive suggestion, guidance, and consistence support during the developing project process.

Secondly, I would like to thank Graduate School of Universiti Utara Malaysia for giving me an opportunity to pursue my master degree at University Utara Malaysia.

Thirdly, for information or reviewing and evaluation of this thesis, I would like to thanks to Mr. Wong Kok Thye for his sincere support.

Lastly, to my parent Mr. and Mrs. Tham Wah Leong and also my sister and brother, thanks for all your support and the hope that you give to me. I am greatly indebt to all of you for your sacrifice during my study.

TABLE OF CONTENTS

	Page
PERMISSION TO USE	i
ABSTRAK (BAHASA MALAYSIA)	ii
ABSTRACT (ENGLISH)	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	xi
LIST OF FIGURES	xii
LIST OF ARONYMNS	xiv
CHAPTER 1: INTRODUCTION	1
1.1 Structure and Organization of Health Care Industry in Malaysia	1
1.1.1 Development of the Government Health System	2
1.1.2 Private Health Care Systems	3
1.1.3 Traditional Practitioners	4
1.1.4 Voluntary Organizations	6
1.1.5 International Bodies	6
1.2 Traditional Ordering System	6
1.3 Problem Statement	7
1.4 Objective	8
1.5 Scope	9
1.6 Constraint	9
1.7 Significant of Project	9

1.8	System Requirements	10
1.8.1	Hardware Requirements: Application Server	10
1.8.2	Software Requirements: Application Server	10
1.8.3	Hardware Requirements: Client Server	11
1.8.4	Software Requirements: Client Server	11
1.8.5	Technology Requirements	11
1.9	Summary	12
CHAPTER 2: LITERATURE REVIEW		13
2.1	Definition of Ordering Management System	13
2.2	Definition of Web-based Ordering Management System	14
2.3	Why Web-based	14
2.4	Which product is suitable to be on the web	14
2.5	Benefit of Web-based Ordering Management System	15
2.5.1	Customer	15
2.5.2	Company	16
2.6	How the Web-based Ordering Management System affect the company	17
2.6.1	Size	17
2.6.2	Location	18
2.6.3	Customer Feedback	19
2.7	How will Web-based Ordering Management System change the sales department	19
2.8	How Web-based Ordering Management System works in Meito Transportation	20

2.9	Intel: E-business Web Ordering System	21
2.9.1	Benefits of the current processes	24
2.9.2	Limitations of the current processes	24
2.10	Oracle: Order Management for e-business	26
2.11	Amazon.com: Customer Order Management System	30
2.12	Dell's: Direct Ordering System	32
2.13	Summary	33
CHAPTER 3: PROJECT METHODOLOGY		34
3.1	What is RUP	34
3.2	Process Overview	35
3.3	Phases	36
3.3.1	Interception Phase	36
3.3.2	Elaboration Phase	36
3.3.3	Construction Phase	37
3.3.4	Transition Phase	37
3.4	Iterations	38
3.4.1	Benefits of an Iterative Approach	38
3.5	Core Workflows	38
3.5.1	Business Modeling	40
3.5.2	Requirements	40
3.5.3	Analysis & Design	41
3.5.4	Implementation	42
3.5.5	Test	43
3.5.6	Deployment	43

3.5.7	Project Management	44
3.5.8	Configuration and Change Management	44
3.5.9	Environment	44
3.6	Summary	45
CHAPTER 4: SYSTEM REQUIREMENT ANALYSIS		46
4.1	Functional Requirements	46
4.2	Non-Functional Requirements	48
4.3	Summary	49
CHAPTER 5: A DESIGN OF WEB-BASED ORDERING MANAGEMENT SYSTEM		50
5.1	Business Model	50
5.2	System Architecture	52
5.3	Use Case Diagram	53
5.3.1	Definition of Actor	55
5.3.2	Definition of Use Case	55
5.4	Class Diagram	57
5.5	Sequence Diagram	58
5.5.1	Sequence Diagram for Register a Customer	58
5.5.2	Sequence Diagram for Change Password	59
5.5.3	Sequence Diagram for Change Customer Profile	60
5.5.4	Sequence Diagram for Add to Cart	61
5.5.5	Sequence Diagram for Review Order	62
5.5.6	Sequence Diagram for Make Payment	63

5.5.7	Sequence Diagram for Enquiry Product Information	64
5.5.8	Sequence Diagram for Search Product	65
5.6	Collaboration Diagram	66
5.6.1	Collaboration Diagram for Register a Customer	66
5.6.2	Collaboration Diagram for Change Password	67
5.6.3	Collaboration Diagram for Change Customer Profile	68
5.6.4	Collaboration Diagram for Add to Cart	69
5.6.5	Collaboration Diagram for Review Order	70
5.6.6	Collaboration Diagram for Make Payment	71
5.6.7	Collaboration Diagram for Enquiry Product Information	72
5.6.8	Collaboration Diagram for Search Product	73
5.7	Summary	74
 CHAPTER 6: IMPLEMENTATION ARCHITECTURE		75
6.1	Internet Connection	75
6.2	Application Architecture	76
6.2.1	Client Tier	77
6.2.2	Server Tier	77
6.2.3	Resources Tier	77
6.3	Security	77
6.4	Database	79
6.5	Summary	79

CHAPTER 7: TESTING AND EVALUATION	80
7.1 Functional Requirements Testing	80
7.2 Non-Functional Requirements Testing	83
7.3 Summary	84
CHAPTER 8: CONCLUSION	85
8.1 Contribution of the Project	85
8.2 Problems of the Project	86
8.3 Recommendation and Future Development	86
8.4 Summary	87
REFERENCES	88
APPENDICES	90

LIST OF TABLES

	Page
Table 4.1: Functional Requirements for Web-based Ordering Management System	47
Table 4.2: Non-Functional Requirements Web-based Ordering Management System	48
Table 5.1: Definition of Actor	55
Table 5.2: Description of Use Case	55
Table 7.1: Functional Requirements Testing for Web-based Ordering Management System	81
Table 7.2: Non-Functional Requirements of Web-based Ordering Management System	83

LIST OF FIGURES

	Page
Figure 1.1: Organization of Health Care Services in Malaysia	2
Figure 2.1: Flow of information and goods for Meito Transportation	21
Figure 2.2: Oracle Order Management for e-business	29
Figure 3.1: Two Dimensions of RUP	35
Figure 3.2: The Nine Core Process Workflow of RUP	39
Figure 3.3: Use Case Model with Actors and Use Cases	41
Figure 5.1: Business Model of Web-based Ordering Management System	51
Figure 5.2: System Architecture for Web-based Ordering Management System	53
Figure 5.3: Use Case diagram for Web-based Ordering Management System	54
Figure 5.4: Class Diagram Web-based Ordering Management System	57
Figure 5.5: Sequence Diagram for Register a Customer	58
Figure 5.6: Sequence Diagram for Change Password	59
Figure 5.7: Sequence Diagram for Change Customer Profile	60
Figure 5.8: Sequence Diagram for Add to Cart	61
Figure 5.9: Sequence Diagram for Review Order	62
Figure 5.10: Sequence Diagram for Make Payment	63
Figure 5.11: Sequence Diagram for Enquiry Product Information	64
Figure 5.12: Sequence Diagram for Search Product	65
Figure 5.13: Collaboration Diagram for Register Customer	66

Figure 5.14: Collaboration Diagram for Change Password	67
Figure 5.15: Collaboration Diagram for Change Customer Profile	68
Figure 5.16: Collaboration Diagram for Add to Chart	69
Figure 5.17: Collaboration Diagram for Review Order	70
Figure 5.18: Collaboration Diagram for Make Payment	71
Figure 5.19: Collaboration Diagram for Enquiring Product Information	72
Figure 5.20: Collaboration Diagram for Search Product	73
Figure 6.1: 3-Tier Application Architecture	76
Figure 6.2: 3-Tier Application Architecture with Firewall	78

LIST OF ARONYMNS

CRM	Customer Relationship Management
EDI	Electronic Data Interchange
HTTP	Hyper Text Transfer Protocol
MOH	Ministry of Health
SLM	Supply Line Management
RAM	Random Access Memory
RUP	Rational Unified Process
UML	Unified Modeling Language
VAN	Value Added Network
WOM	Web Order Management
WWW	World Wide Web

CHAPTER 1

INTRODUCTION

This project is initiated and the fulfillment of course Project (TZ6996) as one of the graduation requirements for Master of Science in Information Technology MSc.(IT) in University Utara Malaysia. The purpose of this project is to generate a prototype of Web-based Ordering Management System for Health Care Product Company.

This chapter gives the overview structure and organization of Health Care Industry in Malaysia, traditional ordering system, problem statement, objective, scope, constraint, significant of project and lastly system requirements.

1.1 Structure and Organization of Health Care Industry in Malaysia

Although the formal health care system has grown from the early urban-centred and curative-based services of pre-Independence, its basic structure and organization has essentially remained the same (Figure 1.1). In the last thirty years, the two largest sectors involved in the delivery of health care are both preventive and curative which have been the government and the private sectors.

The contents of
the thesis is for
internal user
only

REFERENCES

- Aberdeen Group, Inc. (2000). *Order management integrating e-business demand and the supply chain*. Retrieved 30th December 2002 from <http://www.aberdeen.com>
- Alsburly, A. & McManus, S. (2002) *Quick answers to web marketing questions*. United Kingdom: Prentice Hall.
- Booch, G., Rumbaugh, J., & Jacobson, I. (1999). *The unified modeling language user guide*. USA: Addison Wesley.
- Collin, S. (2000). *E-marketing*. New York: John Wiley & Sons, Limited.
- Collin, S. (1997). *Doing business on the Internet*. London: Kogan Page.
- Davis, J. (2000) *A guide to web marketing*. London: Kogan Page.
- Eager, B., & McCall, C. (1999) *The complete idiot's guide to online marketing*. USA: Que Corporation.
- Finger, P., et al. (2000). *Enterprise e-commerce*. Tampa, Florida: Meghan Kiffer Press.
- Haig, M. (2001). *The e-marketing handbook*. UK: Kogan Page.
- Hardaker, G., & Graham, G. (2001). *Wired marketing energizing business for e-commerce*. New York: John Wiley & Sons, Limited.
- Heggenhougen, H.K. (1980). Bomohs, doctors and sinsehs - medical pluralism in Malaysia. *Soc. Sci. & Med.* 14B: 235-244.
- Hofacker, F.C. (2001). *Internet marketing*. New York: John Wiley & Sons, Limited.
- Leebaer, D. (1998). *The future of the electronic marketplace*. Boston: MIT Press.
- McFadden, F.R., & Hoffer, J.A. (1994) *Modern database approach*. Canada: The Benjamin/Cummings Publishing Company, Incorporation.
- Mitchen, A. (2000). *Interactive marketing*. New York: McGraw Hill.
- Kruchten, P. (2001). *What is the rational unified process*. Retrieved 13th May 2003 from http://www.therationaledge.com/content/jan_01/f_rup_pk.html
- Krutchon, P. (1999). *The rational unified process - an introduction*. USA: Addison-Wesley-Longman.
- Rosen, A. (2000). *The e-commerce question and answer book*. USA: Amacom.

- Tapp, A. (2000). *Principles of direct and database marketing*. New York: Prentice Hall.
- Turban E. et al (2002) *Electronic commerce 2002: A managerial perspective*. New Jersey: Prentice Hall.
- Walters, V. (1980). *Class inequality and health care: the origins and impact of the national health service*. London: Croom Helm.
- Will, B.M. (1949). Some cases of marasmus among children in Kinta. *Med. J. Malaya* 3: 259-263.
- Tapp, A. (2000). *Principles of direct and database marketing*. New York: Prentice Hall.
- Whitten, J.L., Bentley, L.D. & Dittman, K.C. (2001). *System analysis and design methods*. USA: McGraw Hill.