

Mobile Distributed News Web Service

This thesis is presented to the Graduate School
In fulfillment of the requirements for
Master of Science (Information Technology)
Universiti Utara Malaysia

By

PRASIT ABDULWAHAB

©Prasit Abdulwahab, April 2005. All Rights Reserved

Mobile Distributed News Web Service

This thesis is presented to the Graduate School
In fulfillment of the requirements for
Master of Science (Information Technology)
Universiti Utara Malaysia

By

PRASIT ABDULWAHAB

©Prasit Abdulwahab, April 2005. All Rights Reserved



JABATAN HAL EHWAL AKADEMIK
(Department of Academic Affairs)
Universiti Utara Malaysia

PERAKUAN KERJA KERTAS PROJEK
(Certificate of Project Paper)

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

PRASIT ABDULWAHAB

calon untuk Ijazah
(candidate for the degree of) **MSc. (Information Technology)**

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

MOBILE DISTRIBUTED NEWS WEB SERVICE

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): **MR. AHMAD HISHAM ZAINAL ABIDIN**

Tandatangan
(Signature)

:

Tarikh
(Date)

:

11 APRIL 2005

PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a post-graduate 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 the whole or in part, for scholarly purposes may be granted by my supervisor or, in her absence, by the Dean of 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 materials for my thesis.

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

Dean of the Graduate School

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman

Abstract

The demand for access to the Internet by mobile users is increasing. Many mobile providers have to provide the wireless network carries signals between the cellular phone and web server. A new concept is latest released that joined mobile and web service together called “Mobile Web Service”. It provides services like service on web sites but use both web and mobile device as clients. This research aim to explore mobile web service technology and attempt to develop a prototype called “Mobile Distributed News Web Service System” which demonstrates the usefulness of mobile web service technology. This study uses online news website as a case study.

Abstrak

Permintaan terhadap pelayaran kemudahan internet oleh pengguna bergerak semakin meningkat. Kebanyakan pembekal telefon menyediakan kemudahan rangkaian tanpa wayar yang melibatkan signal di antara telefon bimbit dan pembekal laman web. Satu konsep baru yang diperkenalkan menggabungkan telefon bimbit dan laman web dikenali sebagai "*Mobile Web Service*". Ianya bukan sahaja menyediakan kemudahan sepertimana kemudahan yang disediakan oleh laman web, namun ianya juga menggunakan kedua-dua laman web dan peralatan telefon bimbit yang dikenali sebagai klien. Kajian ini dilakukan bertujuan untuk mengkaji teknologi kemudahan laman web bergerak, dan membangunkan satu prototype yang dikenali sebagai "*Mobile Distributed News Web Service System*" yang akan menjurus kepada kepentingan penggunaan teknologi laman web bergerak. Kajian ini menggunakan laman berita secara on-line sebagai kajian kes.

ACKNOWLEDGEMENTS

In the name of Allah, the Most Gracious and the Most Merciful.

First of all, I would like to express my most sincere thanks to Allah the Almighty for giving me the excellent health, mind, power and extra strength for doing the research.

Next, I would like to extend my thanks and gratitude to:

My supervisor, Mr. Ahmad Hisham Bin Zainal Abidin for expert guidance, wonderful support and his encouragement to make me carrying out this research become reality;

Mr. Waeibroheem Salapor, for brushing up my English and for his gracious help and support;

My beloved parents, my brothers, and sisters for their support, cherish and encouragement at all times.

Next, I would like to thank My UUM friends, I. Tarmizi, S. Usman, H. Aslina, L. Fatimah, and C. Fauzi for their efforts in getting things coordinated, and their patience in taking care of me to help me complete my project.

And all individuals involved in the establishment of this research.

TABLE OF CONTENTS

Chapter	Title	Page
	PROMISSION TO USE	i
	ABSTRACT	ii
	ABSTRAK	iii
	ACKNOWLEDGEMENT	iv
	TABLE OF CONTENT	v
	LIST OF FIGURES	vii
	LIST OF TABLES	viii
	LIST OF ABBREVIATIONS	ix
1.	INTRODUCTION	1
	1.1 Background	1
	1.2 Statement of Problems	2
	1.3 Objective	3
	1.4 Scope of Project	4
	1.5 Project Significance	4
	1.6 Research Outcome	5
	1.7 Organization of this thesis	5
2.	LITERATURE REVIEW	6
	2.1 Mobile Service Technology	6
	2.2 Mobile Web Service	10
	2.3 Web Service Technology	10
	2.4 Online News	14
	2.5 Previous Research on Similar	14
3.	METHODOLOGY	18
	3.1 System Development Methodology	18
	3.2 Planning	19
	3.3 Analysis	20
	3.4 Design	21
	3.5 Development	21
	3.6 Testing	22
	3.7 Implementation	22
	3.8 Measuring User Reaction	22
4.	DEVELOPMENT OF SYSTEM	25
	4.1 Mobile Distributed News Web Service System Architecture	25
	4.2 Database Design	28
	4.3 Web Service Design	30
	4.4 User Interface Design	34
	4.5 Hardware and Software Requirement	37

Chapter	Title	Page
5.	SYSTEM EVALUATION	40
	5.1 Mobile Distributed News Web Service Evaluation	40
	5.2 Finding	42
	5.3 Results	43
	5.4 Discussion	43
	5.5 Factors That Affected the System Evaluation	44
6	CONCLUSION AND RECCOMENDATION	46
	6.1 Conclusions	46
	6.2 Recommendations	49
	REFERENCES	51
	Appendix A: Questionnaire	
	Appendix B: User Manual	

LIST OF FIGURES

Figure	Title	Page
2.1	I-mode Architecture	9
3.1	Process of System Development Methodology Using RAD Approach	14
4.1	Mobile Distributed News Web Service System Architecture	26
4.2	XML file for Online News Center	29
4.3	Web Services view by using web browser	30
4.4	SOAP view by using web browser	31
4.5	Add web reference	32
4.6	Select services on web reference	32
4.7	Function provide by getNews1 service	33
4.8	Mobile Distributed News Web Service Homepage	34
4.9	Online news on mobile phone simulator	35

LIST OF TABLES

Table	Title	Page
2.1	Analogies between Sun ONE and Microsoft.Net	13
2.2	The Research on Online News	15
4.1	Database Structure of N1 and N2 table	31
4.2	The Minimum Requirement for Install Visual Studio.Net	37
5.1	Users Background	42
5.2	Score by Respondent for the 6 questions by the 35 Users	42

LIST OF ABBREVIATIONS

ASP	Active Server Page
cHTML	Compact Hyper Text Markup Language
GSM	Global System for Mobile Communication
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
I-mode	Information Mode
IIS	Internet Information Service
JSP	Java Server Page
JVM	Java Virtual Machine
PC	Personal Computer
PDA	Pocket Digital Assistant
RAD	Rapid Application Development
SMS	Short Message Service
SOAP	Simple Object Access Protocol
TCP	Transmission Transfer Protocol
UDDI	Universal Description, Discovery, and Integration
URL	Uniform Resource Locator
UUM	Universiti Utara Malaysia
WAP	Wireless Application Protocol
WBMP	Wireless Bitmap
WML	Wireless Markup Language
WSP	Wireless Session Protocol
WSDL	Web Service Description Language
WTLS	Wireless Transport Layer Security
WTP	Wireless Transaction Protocol
WWW	World Wide Web
XML	Extensible Markup Language

CHAPTER 1

INTRODUCTION

This chapter provides an overview of mobile web service technology and online news application. It includes a brief background of this research, problem statement, objectives, project scope, and the study's significance.

1.1 BACKGROUND OF STUDY

The Internet has changed the way to search the information worldwide. In the business, organization use Internet to assist and improve organization's performance. Moreover with the Internet, business interacts directly with their customers, and it is an easy way to communicate with the customer. During recent year, many organizations have started to offer their customers and Internet users to receive information on web pages as well as more complex interaction such as on-line commerce and electronic banking. The latest trends in the field of web interaction are Web services. Web services are essentially some captured application or business logic that is programmatically encoded to execute on a Web server by exposing its functional capabilities as methods available to clients over HTTP (Greenwood and Calisti, 2004).

The contents of
the thesis is for
internal user
only

REFERENCES

- Amor, D. (2002). *Internet future Strategies: How pervasive computing services will change the world*. USA: Prentice-Hall.
- Connolly, T., Begg, C. & Strachan, A. (1999). *Database System, A Practical Approach to Design, Implementation and Management*. UK: Addison-Wesley.
- Elkarra N., (2003). A Web Services Strategy for Mobile Phones, Retrieved November 5, 2004 from <http://www.w3.org/TR/xhtml1/DTD/transitional.dtd>
- Emmer M. , C. Kuhlmann, G.Voew and J. Wolling (2002), Der 11.September Informationsverbreitung, Medienwahl, Anschlusskommunikation. Media Perspektiven 4/2002, 166-177
- Fernandez B., T. M., Fernandez H. (2004). Comparing the security architectures of Sun ONE and Microsoft .Net. Department of Computer Science and Engineering, Florida Atlantic University.
- Greenwood, D. and Calisti, M. (2004). Engineering Web Service – Agent Intergration. Whitestein Technologies AG, Zurich, Switzerland.
- Kalakota, R., & Robinson, M. (2002). *M-business: The race to mobility*. USA: McGraw-hill.

- Kemrova M. (2003). *T-Mobile customers can also shop on the Internet and WAP*
Retrived june 12, 2003 from:http://www.t-Mobile.cz/cms/pr_tz_detail_eng.asp
- Neilsen, J. (1993). *Usability Engineering*. USA: Academic Press
- NTT DoCoMo. (2002). *M-commerce with I-Mode*. Retrieved January 22, 2005 from
the WWW: <http://www.nttdocomo.com/top.html>.
- Sekaran, U. (2001). *Research methods for business: A kill-building approach* (2nd
ed). Singapore: John Wiley & Sons.
- Sequest Software, (2002). Web Service Workshop Learn What Web Services Can
Do for Your Enterprise, Retrieved November 5, 2004 from
<http://www.sequest.com/wsworkshop.pdf>
- Shneiderman, B. (1998). *Designing the User Interface: Strategies for Effective
Human-Computer Interaction*. USA: Addison-Wesley.
- Tian, M., Voigt, T., Naumowicz, T., Ritter, H., Schiller, J.(2004). Performance
considerations for Mobile Web Service. Retrieved November 5, 2004
from <http://www.inf.fu-berlin.de/aswn2003.pdf>
- Trench B., Quinn G. (2003), Online news and changing models of journalism.
Journal of Irish Communications Review, Vol 9,2003

W3C, Web service Activity. Retrieved November 5, 2004 from
<http://www.w3.org/2002/ws/>

Whitten, L.J., Bentley, D.L. & Dittman, C.K. (2001). System analysis and Design
methods. USA: McGraw-Hill.