CONTENT MANAGEMENT MODEL FOR ACADEMIA WEBSITE DEVELOPMENT

Nor Azlina Ramli

UNIVERSITI UTARA MALAYSIA
2012

CONTENT MANAGEMENT MODEL FOR ACADEMIA WEBSITE DEVELOPMENT

A project submitted to the Dean of Reseach and Postgraduate Studies Office in partial Fullfillment of the requirement for the degree of
Master of Science (Information Technology)
Universiti Utara Malaysia

By

Nor Azlina Ramli
(807698)

PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a postgraduate degree from the Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying this report in any manner in whole or in part, for scholarly purposes may be granted by my supervisor(s) or in their absence by the Dean of Awang Had Salleh Graduate School of Arts and Sciences. It is understood that any copying or publication or use of this report 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 from my thesis.

Request for permission to copy or to use any materials in this report, in whole or in part, should be addressed to

Dean of Awang Had Salleh Graduate School

of Arts and Sciences Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman

Malaysia

ABSTRAK

Sistem Pengurusan Kandungan (CMS) biasanya digunakan dalam kebanyakan laman web. Ia merupakan gabungan proses dan maklumat yang berkualiti. Disebabkan oleh perkembangan teknologi, terdapat banyak platform yang boleh digunakan sekarang, seperti Facebook, Buletin Elektronik dan sebagainya. Walau bagaimanapun, masalah yang timbul adalah mengenai keselamatan dan ianya tidak selamat bagi akademik untuk menyiarkan kerja-kerja akademik. Penggunaan medium sosial di kalangan ahli akademik adalah cara yang tidak berkesan. Tujuan kajian ini adalah untuk membangunkan model pengurusan kandungan untuk ahli akademik. Dalam erti kata lain, objektif kajian ini adalah untuk mengenalpasti keperluan dan jenis maklumat yang dikongsi di kalangan ahli akademik. Satu tinjauan tentang keperluan kandungan laman web juga telah dilakukan bagi mengumpul maklumat. Metodologi yang digunakan dalam projek ini adalah mengenalpasti keperluan, analisis, membangun CMS rangka kerja, prototaip dan pengesahan. Hasil daripada kajian menunjukkan bahawa hanya 14% daripada ahli akademik di Pusat Pengajian Pengkomputeran mempunyai laman web mereka sendiri manakala selebihnya tidak mempunyai laman web sendiri. Kajian ini memberi peluang kepada ahli akademik untuk menggunakan satu sistem yang sesuai dalam menguruskan kerja mereka.

ABSTRACT

Content management system is generally used in most websites. It is the combination of quality information and formal processes. Due to the development of technology, there are many platforms can be used nowadays, such as Facebook, Electronic Bulletin and others platforms. However the problem is about security and it is not safe to publish the academia work. Using the social medium among the academia is not the effective way. The aim of this study is to develop a content management model for the academia. In other words, the objective of this study is to identify the needs and types of information shared among the academia. A survey about the website content requirement also had been done in a way to collect the data. The methodologies that were used in this project are identifying the requirement, analysis, developing CMS framework, prototyping and validation. The result from the survey showed that only 14% of the academia in School of Computing has their own websites, while the rest of them do not have their own websites. This study has given an opportunity to the academia to use an appropriate system in managing their work.

ACKNOWLEDGEMENT

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

Alhamdullilah, praise to Allah SWT for guiding, blessing me and for the strength in completing this thesis. Special appreciation goes to my supervisor En. Jasni Ahmad for his supervision, patience, motivation and constant support. His guidance helped me in all the time of this master project. Not forgotten my second supervisor En Wan Hussain Wan Ishak for his support and guidance regarding this project.

Sincere thanks to all my friends especially Nabilah, Norhayati, Hafizah and Muhammad Marwan and others for their kindness and moral support along my study. Thanks for the friendship and moments memories we had shared together.

Last but not the least, my deepest gratitude goes to my beloved parents; En. Ramli B. Salleh and Pn. Mariam Bt. Hussain, and also to my sister and brother for their prayers and encouragement. To those who indirectly contributed in this project, your kindness means a lot to me. Thank you very much.

TABLE OF CONTENT

PERMISSION TO USE		i
ABSTRAK		ii
ABSTRACT		iii
ACKNOWLEDGEMENT		iv
LIST OF TABLE		viii
LIST OF FIGURE		ix
LIST OF ABBREVIATION		xi
CHAPTER ONE: INTRODUCTION		
1.1	Introduction	1
1.2	Problem Statement	4
1.3	Objective	6
1.4	Scope of study	6
1.5	Research Question	6
1.6	Project Outline	7
CHAPTER TWO: LITERATURE REVIEW		
2.1	Academia Information Sharing	8
2.2	Information Sharing Model	9
2.3	Content Management System	12
2.4	Summary	20
CHAPTER THREE: METHODOLOGY		
3.1	Research Phases	21
	3.1.1 Identify the Requirement	22
	3.1.2 Analysis	22
	3.1.3 Developing CMS Model	23
	3.1.4 Prototyping	24
	3.1.5 Validation Phases	27
3.2	Technical Requirement	28
	3.2.1 Macromedia Dreamweaver Definition	28

3.2.2 Hypertext Pre- Processor (PHP) 29
3.3.3 My Structured Query Language (SQL) 30
3.3 Summary 31

CHAPTER FOUR: SYSTEM ANALYSIS AND DESIGN

4.1 Unified Markup Language (UML) 32
4.2 Use Case Diagram 33
4.2.1 Use Case Specification 34
A. Use Case (View) 34
B. Use Case (Update) 35
4.3 Activity Diagram 36
4.4 Sequence Diagram 38
4.4.1 Log in 38
4.4.2 Update 39
4.5 System Design 39
4.5.1 CMS Model Layout 40
4.5.2 Log in Layout 41
4.5.3 Publication Layout 42
4.5.4 Database 42
4.6 Implementation 43
4.7 Summary 45

CHAPTER FIVE: RESULT AND FINDING

5.1 Website Content Requirement Analysis 46
5.1.1 Respondent Background 46
5.1.2 Respondent Current Website Status 49
5.2 Validation Test Analysis 54
5.3 Summary 55

CHAPTER SIX: CONCLUSION AND FUTURE WORKS

6.1 Conclusion 56
6.2 Contribution of the study 57
6.2.1 Easy to manage 57
6.2.3 Improve the Security 58

6.3 Limitation of the study 58
6.4 Recommendation and suggestion for further Study 59

REFERENCES 60

APPENDICES

Appendix A: User Requirement 63

Appendix B: Prototype Validation 66

LIST OF TABLE

Table 2.1	Comparison table of content management features	14
Table 2.2	Additional Features in CMS Onion	19
Table 5.1	Reason for Not Having Website	53
Table 5.2	Aspect in Validation Based on Questionnaire Result	54
Table 5.3	Perceived Usefulness	55

LIST OF FIGURE

Figure 1.1	Facebook Growth in the World Between 2011 Q1 and 2012 Q1	2
Figure 2.1	The Active Sharing Model	9
Figure 2.2	Example of CMS	15
Figure 2.3	How the Content Management System Page Generated	16
Figure 2.4	Architecture from content provider perspective.	17
Figure 2.5	The CMS Features Onion	18
Figure 3.1	Flow of CMS Research Methodology	21
Figure 3.2	CMS Model	23
Figure3.3	Phases in the RAD Methodology	24
Figure 3.4	Dreamweaver	29
Figure 3.5	PHP Coding	30
Figure 3.6	My SQL	31
Figure 4.1	Use Case Diagram	33
Figure 4.2.	Use Case View	34
Figure 4.3	Use Case Update	35
Figure 4.4	Activity Diagram for Academia CMS	37
Figure 4.5	Sequence Diagram for Login	38
Figure 4.6	Sequence Diagaram for Update	39
Figure 4.7	CMS Layout	40
Figure 4.8	Log In Layout	41
Figure 4.9	Publication Layout	42
Figure 4.10	CMS Database Table	43

Figure 4.11	Main Interface of CMS Model	43
Figure 4.12	LogIn Interface	44
Figure 4.13	Publication Interface	44
Figure 5.1	School Involved in UUM	47
Figure 5.2	Type of Department	47
Figure 5.3	Percentage of Specialization	48
Figure5.4	Percentage of The Gender	49
Figure 5.5	Percentage of Respondent Website	50
Figure 5.6	Type of Web site	50
Figure 5.7	Category of Website	51
Figure 5.8	Website Hosting	51
Figure 5.9	Updating Frequency	52

LIST OF ABBREVIATIONS

CMS	Content Management Model
ICT	Information and Communication Technology
HTML	Hypertext Markup Language
PHP	Hypertext Pre-Processor
UML	Unified Modeling Language
CASE	Computer-Assisted Software Engineering
RAD	Rapid Application Development

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Academia is the community of students and scholars that engaged in higher education and research. Systems at higher education of learning promote and encourage mutual interaction between students, scholars, and also the society. While scholars are a group of people that actively doing the research, developing and preparing the course content and materials. Students are the active group of people that interact with each other and their respective scholars to gain knowledge on a particular domain.

The advancement of the information and communication technology (ICT) particularly computer and Internet technology has widened the scope of interaction and information sharing among academia. To date information sharing has been borderless, worldwide, across culture, languages and economic barriers. Even though, in some countries scholar's communication has been

The contents of the thesis is for internal user only

REFERENCES

Ambler. & Scott, W. (2004). *The Object Primer: Agile Model Driven Development. with UML 2*. Cambridge University Press. ISBN 0-521-54018-6.

Black, E. L. (2009). Selecting a Web Content Management System for an Academic Library Web Site. Vol.30, No.4

CASEMaker, Inc. (2000). *What is Rapid Application Development?* Retrieved April 10,2012from http://www.casemaker.com/download/products/totem/rad_wp.pdf

Chung, S. & Yun, S. L. (2000). Reverse Software Engineering With UML For Website Maintenance. 0-7695-0577-5/00.

Clark, D. (2007). Content Management and the Production of Genres. ACM 978-1-59593-588-5/07/0010.

Cohen, E.B. (2009). A philosophy of informing science. *Informing Science: The International Journal of an Emerging Transdiscipline, 12*, 1-15. Retrieved from http://www.inform.nu/Articles/Vol12/ISJv12p001-015Cohen399.pdf

Deitz, G. (2008). Developing A Content Management System for SIGUCCS. ACM 978-1-60558-074-6/08/10

Elizabeth, B.L. (2009). Selecting A Web Content Management System For An Academic Library Web Site. Journal of Information Technology and Libraries. Columbus, Ohio.

Freedictionary.com. (2012). Definition of Web Based.Retrived from World Wide Web on March 22,2012 at http://encyclopedia2.thefreedictionary.com.

Haeussler, C. (2010). Information-Sharing in Academia and the Industry:A Comparative Study. No.154.

Haeussler, C., Jiang, L., Thursby, J. & Marie, C. (2009). ThursbSpecific and general information sharing among academic scientists. No. 15315.

Hannon, H. C. (2010). Content Management System For Higher Education. Hannon Hill Corporation. Atlanta, GA 30326.

Hoffer, A. J., George, F. J. & Valacich, S. J. (2005). Modern System Analysis And Design.New Jersey: Pearson Education.

Hong, H. C. & Chen, Y. C. (2000). Design and Implementation of a Web-Based Bulletin System for Official Documents. 0-7695-0792-1100.

Internetworldstats.com (2012). Internet Usage in Asia. Retreived from www.internetworldstats.com on April 28,2012.

Jamaludin, Z. & Wan Ishak, W. H. (2011). A Virtual Repository Approach To Departmental Information Sharing. American Journal of Economics and Business Administration, 3(1) pp:18-23.

Joel, J. & Harsha, T. (2005). Developing Spatially-Aware Content Management Systemsfor Dynamic, Location-Specific Information in Mobile Environments.

Li, D. & Wang, H. (2004). "Information via Academic BBS in China: A Contents Analysis," Chinese Librarianship: an International Electronic Journal, vol. 18.

Martin, J. (1991). Rapid Aplication Development. New York : Macmillan Publishing Company.

Mich, L. Franch, M. & Gaio. (2003). Evaluating And Designing Web Site Quality. Journal of Computer Society, 1070-986X/03.

Netsity. (2010). Web based Application. Retrieved, Feb 9,2012 from http://www.netsity.com/webbasedapplication.htm

Paul, B. & Mikes, L. (2001). JISC TechWatch Report: Content Management System.TSW 01-02.

Phillip, W. J. (2002). Content Management, Portals and Personalized. State of Utah.

Phuwanartnurak, A. J. (2009). Did You Put It on the Wiki? Information Sharing through Wikis in Interdisciplinary Design Collaboration. ACM 978-1-60558-559-8/09/10

Rambe, P. & Ng'ambi, D. (2011). Towards an Information Sharing Pedagogy: A Case of Using Facebook in a Large First Year Class. Informing Science: The International Journal of an Emerging Transdiscipline, 14, pp: 62-89.

Rohani, V. A. & Ow, S.H. (2011). Eliciting Essential Requirements for Social Networks in Academic Environments. 978-1-61284-691-0/11.

Schmuller, J. (2002). Sams Teach Yourself UML In 24 Hours 2nd editions Sams Publishing: USA.

Shen, Y. (2006). Scholarly Communication in Scientific Research Practice – A Study of Computer Sciences Faculty, International Library Review, vol.56, pp. 239–251.

Simpson, L.D. (2005). Content For One:Developing A Personal Content Management System. ACM 1-59593-173-2/05/0011.

Swierad, D., Zabierowski, W. & Napieralski, A. (2009). Universal Content Management System with Ajax Technology. Polyana-Svalyava (Zakarpattya), UKRAINE.

Talja, S. (2002). Information Sharing In Academic Communities Type and Levels of Collaboration In Information Seeking and Use.University of Tampere, Finland.

Tummala, H. & Jones, J. (2005). Developing Spatially Aware Content Management Systems for Dynamic, Location– Specific Information in Mobile Environment.

Vaidyanathan, G. & Moutone, S. (2009). Security In Dynamic Web Content Management Systems Application. Acm Journal, Vol 15.

Visualwebz. (2009). Joomla vs Drupal – Website Content Management System. Seattle Web Development Company.

Wenhua, Y. & Xiang, C. (2010). Using Content Management System Joomla! to build A Website for Research Institute Needs. 978-1-4244-5326-9/10.

Wikipedia Encylopedia (2009). Rapid Application Development, Retrieved, March 29 ,2012 from http://en.wikipedia.org/wiki/Rapid_application_development

with UML 2. Cambridge University Press. ISBN 0-521-54018-6.

Xia, J. (2006). Scholarly communication in East and Southeast Asia: traditions and challenges, *IFLA Journal*, 32(2), pp. 104-112.

Zheng, Y., Zhoa, F. & Song, Q. (2009). Roles and Effects of BBS and Personal Websites in Academic Information Exchanges in China, DOI 10.1109/COINFO.2009.68.