Content Management System for Academia Information Sharing

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Abstract

The information sharing is one of the vital activities played by academia. Typically, academia shares their knowledge through articles which was distributed by the publisher of the article. The scope of the reader my limited to the reader subscribed to the publication. Thus, the existence of the articles may not widely known to the public. Website is one of the popular medium for academic information sharing. Through the website, academia can personalize the information, posting information related to their expertise area, lecture notes and etc. However, website development requires some technical knowledge on the web programming and web authoring tools. This factor encouraged academia to develop their personalize website. In addition, time also hinders the use of website as certain tasks such as preparing, updating and uploading the content required timely effort. Realizing these factors, a simple content management system specifically for academia is proposed. The finding shows that the proposed CMS is accepted as alternative tools for academic website developed with ease of use and easy to maintenance. Yet, the functionalities of the CMS still need to be improved.

Keywords

Content Management System, Information Sharing, Website, CMS

1. Introduction

Academia is the community of students and scholars that engaged in higher education and research. Systems in 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 of a particular domain.

A review of the selected articles presented at a knowledge management conference in 2012 shows that information sharing is one of the prevailing issues in knowledge management (Ishak, 2011). There are various platforms for academia information sharing. This platform can be categorized into three categories such as community forum, social media and personal webpage. The example of the community forum is such as electronic bulletin. With the rapid development of science and technology, the academic exchange information has increased in exponential way and needs to be utilized in various subject fields via various channels. One of the famous medium is electronic bulletin. In china over the last decades it has become one of the key players in global academic information exchange. The problem using this electronic bulletin is about the ownership. Using the electronic bulletin in the academic field is owned by the universities and colleges. The main advantages of electronic bulletin sponsored by universities and colleges is their wide readership, because a considerable number of teachers and students regularly visit and discuss on the electronic bulletin and some teacher and students even take electronic as an indispensable part of their work and study (Li and Wang, 2004). For academia sharing information, there is sometime needed to be personalized.

Information sharing can also be done using the social network such as blog, Twitter and Facebook. This social medium can make information sharing among academia move very fast. Cohen (2009) informing science framework provides a way of analyzing the role of Facebook in mediating information sharing among students who assume

interchanging role of informers and clients. However, social networking is facing a privacy problem such as every user can view their profile. In the other word, in the education field, social networking was an ineffective way to publish the academia work. Some information can be misused by the hackers. Therefore, a social network is not really secured and the security of the user account is vulnerably in secured.

Academia information sharing through the website can be as a platform which required some effort in order to maintain the updated information. The website is known as a personalize information sharing medium. Typically, website is hosted and funded by the academic organization or self-hosted and funded by the owner himself through the third parties. The content of the website is typically prepared, edited and owned by the owner without intervention or addition from other academia as compared to electronic bulletin and Facebook. However, updating the static website has been time consuming since the whole webpage need to be re-uploaded even though only small changes are made. Developing a dynamic website requires technical knowledge in website development and programming skills. Therefore, scholars with a non - programming background such as chemistry and material science will find it difficult to effectively construct and maintain a high - quality website (Shen, 2006).

CMS provides an alternative to the methodology of developing a website. However, existing CMS is difficult to customize. During the installation and setting up, the whole package needs to be installed on the user web server. This installation may consume large server space, but, some of the components may not be fully utilized.

This paper proposed small scale CMS model for academia information sharing. The new model will enable academia to setup website with minimum technical knowledge. The use of databases and electronic form will allow the content of the website to be easily updated.

2. Literature Review

Academia can be defined as a group of community and scholars that occupy the higher education. Xia (2006) uses the scholarly communication term in a way to define the process of information sharing among the academia in publishing their work. Scholarly communication term can be defined as a process of knowledge delivery practiced by members of the academic community. Consistently, Jamaludin and Ishak (2011) highlighted that the academician is an active group of people who distribute and share knowledge actively. They proposed an active information sharing model that involves lecturers as both owners and the users (Figure 1). The owners will typically create and maintain the information, while the users can view and retrieve the information. The model was implemented as a web application to widen the information sharing and provide easy access among academician.

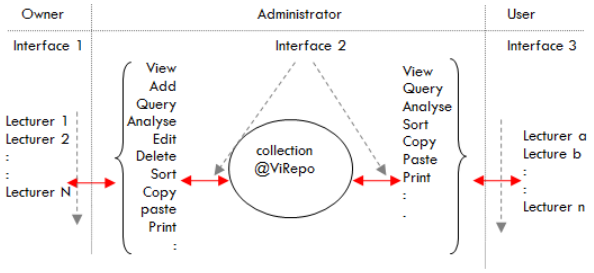

Figure 1. The Active Information Sharing Model

A web application is a software application that delivers its functionality to a user from a Web server, through a network such as the World Wide Web or an intranet. The user views and manipulates the application through a Web browser from anywhere in the world and at any time. Web-based applications are based on displaying the objects and also providing a form to enable some changing to be done to the object (Turban et al., 2006). It also refers to those applications or services that are stored on a server which are allowed to be accessed by using a web browser from anywhere in the world via a web. Web based applications give an opportunity to users to access information from anywhere in the world and at any time. It is economical and fast. Web-based applications are easy to use and can be implemented without interrupting the existing work process (Netsity, 2010). Typically, websites consist of three basic features that are content, layout and navigation (Windley, 2002).

CMS is one of the applications that support the creation and development of the website. Simpson (2005) defines that a content management system "as a database of information and a way to change and display the information without spending a lot of time dealing with the technical details of presentation". CMS cover a wide set of processes and also a combination of quality information, formal process and support system architecture (Browning and Lowndes, 2001). Consequently content management system helps the organization to manage website dynamically. In the other words, content management system is a way to deliver the content to the visitor in a way such as search engine friendly, easy to manage and easy to

edit. Even non-technical user can use CMS (Swierad et al., 2009).

To date, many CMS software has been developed are such Joomla, Drupal, and Wordpress. Most of the CMS is open source which means they can be modified and customized by the user. Table 1 illustrates different features of the CMS. Drupal is one of the unique publishing systems, it has the ability to run many sites and manage many users with different roles and permission. Wordpress is a blog engine, more accessible and flexible. However, Wordpress has limited function and take some time to set up the website. Joomla have an intuitive user interface, simple to operate and use to rapidly set up large websites with a professional appearance based on a wide variety of free and inexpensive templates.

Table 1. Different Features of CMS

Content Management	Joomla	Drupal	Wordpress
User Friendly	√	√	
Community features	√		√
Template/ Themes	√		√
Forum		√	√
Internalization		√	
Ease of Use	√		
Blog	√	√	√
Document Management	√		
Events Calendars	√		

3. Methodology

This study involves three major phases. The phases are identification of the requirement, design and develop CMS prototype and validation. In the requirement identification phase, a questionnaire has been distributed to lecturers. The aims of the survey are to identify the current status of the academic website and to identify the major contents of the website. The frequency analysis is then performed and the information is sorted based on the frequency.

In the next phase, the CMS prototype is designed and developed. The CMS interface is proposed to consist of three main sectors as shown in Figure 2. The Sector I is the header and the Sector II is where all the menus and links should be placed. Sector III is the main display panel where all information is to be displayed.

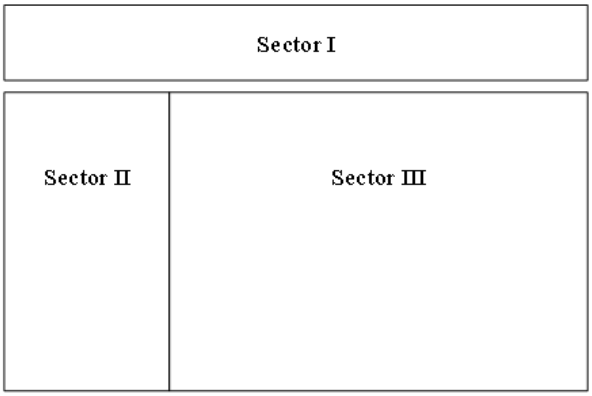

Figure 2. Layouts of the CMS

The prototype development is based on Rapid Application Development (RAD) methodology. RAD applies iterative approach in the development and the construction of prototypes. This method can accelerate the software systems development. In the validation phase, five lecturers were asked to use the prototype. The perceived ease of use and perceived usefulness of the prototype is then accessed. Figure 3 shows the main interface of the CMS prototype.

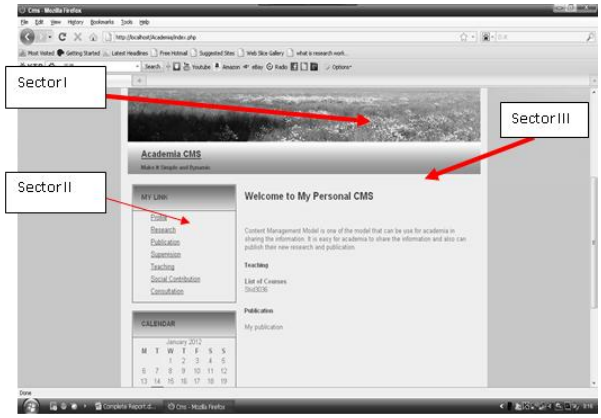

Figure 3. CMS Main Interface

4. Findings and Discussion

Initial survey was carried out involving 36 lectures in the area of Information Communication & Technology (ICT). The initial survey reveals that only 14% of the respondents have their own website, while another 86% do not have a website. This finding shows that the awareness of the importance of website in academic is still lacking even though all respondents are in the area of information and communication technology. Various reasons have been raised by the academician for not having a website. The most popular reasons are no time to maintain the website

(29%) and no time to prepare the material and maintain the website (23%). Table 2 summarizes the feedbacks.

Table 2. Reason for not Having a Website

Reason For Not Having Website	Respondent (%)
No time to prepare the materials	3
No time to maintain the website	29
Don't have the hosting location	3
No encouragement from the university's management	10
No time to prepare the materials & maintain the website	23
No time to maintain the website & no encouragement from university	6
No time to prepare the materials & no encouragement from university	10
No time to prepare , maintain & no encouragement from the university	6
No time to maintain and develop the website	3
Low profile	3
The website already provided by the university	3

The CMS was validated by five selected lecturers where they indicate the perceived ease of use and perceived usefulness. Both are based on 5 Likert Scales where number 1 is strongly agreed and 5 strongly disagree. The results are depicted in Table 3 and Table 4. Based on the Table 3 and 4 the answers are more than 3.00. This indicates that the respondents have a natural perception towards the CMS, yet have interest to further use CMS for website development.

Table 3. Perceived Ease of Use

Description		Mean
B1	I found system is easy to use	3.00
B2	I would find CMS easy to do what I want to do	3.20
B3	Learning to use the CMS would be easy for me	3.80
B4	My interaction with this CMS was clear and understandable	3.20
B5	It would be easy for me to share information via this system	3.40
B6	It would be easy for me to become skillful by using this CMS	3.20

Table 4. Perceived Usefulness

Description		Mean
C1	Using this system in my job would enable me to accomplish tasks (Manage the CMS) more quickly	3.00
C2	Using this system would enhance my effectiveness in share the information	3.20
C3	Using this system would make it easier to do my job	2.80
C4	Using this system would improve and enhance my task performance	3.20
C5	Using this system would stimulate and increase my productivity	3.20
C6	I found this CMS is useful	3.20

5. Conclusion

Nowadays web site has become one of the most important mediums to academia to publish their work and share information online. CMS is easy to use and manage. Less technical skills are required since all the components required are provided. Entering the information is simply by typing as those of Microsoft Word software. The proposed CMS is relatively simple and small as compared to the existing CMS. The proposed CMS is aimed for academician where the components were developed based on their needs. The proposed CMS is expected to increase the development of the academic's website, provide the ease of editing and maintenance of the website's content.

In our future work, the CMS will be enhanced to include more interactive features, such as visitors can leave comments and receive the feedback, tracking of the new website content, and online forum. The future CMS may adapt the features as in the social media such as Facebook.

The same concept can be applied to the rural business community such as Small Medium Enterprise (SME). The use of simple CMS may help them to set up their own website to promote and market their product online. In addition, the website can be used as an information sharing medium to connect the rural people and the worldwide. This initiative can be explored further in future study.

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