

## *Improving Web-site for International Postgraduate Students in UTHM*

Mohammed Riyad Abdullah

Faculty Computer Science and Information Technology  
Universiti Tun Hussein Onn Malaysia  
Parit Raja, Malaysia  
mohammed\_riyad@yahoo.co.uk

Mohd Sazali Khalid Ph.D

Faculty Computer Science and Information Technology  
Universiti Tun Hussein Onn Malaysia  
Parit Raja, Malaysia  
hjsazali@uthm.edu.my

**Abstract**— The information and communication technology (ICT) gives an organization a chance to improve their overall services and efficiency. However, The problem there is no common knowledge prototype for the Center for Graduate Studies for International Postgraduate Students enable to knowledge management(KM)to be managed in UTHM that. The objective of this research is to study and analyze the critical requirements of a knowledge portal for international postgraduate students in (UTHM), and design web-based prototype of the knowledge management portal. Three major modules were included in Improving Web-Site for International Postgraduate Student in UTHM. The project methodology used is the Operational framework. The portal was developed using ASP.NET, MY SQL, and Flash Chat. The result after the deployment of the new system and working with it, the problems referred to were solved; this is done by adopting the website for international postgraduate students in UTHM which helped a lot of available information in different ways example knowledge management and students monitoring.

**Keywords-component;** *Information Communication Technology, Knowledge Managemen, Active Server Pages, Information System;*

### I. INTRODUCTION

Universiti Tun Hussein Onn Malaysia (UTHM) has been providing learning, research and training since its organization at the 15th public University in Malaysia [1]. There is no prototype to collect among registration and knowledge management portal for the International Postgraduate Students (IPS) to first enable to manage knowledge among staff at the Centre for Graduate Studies and students. Second to acquire knowledge from other students in the UTHM, based on that, the current problem for the international postgraduate students in UTHM that they do not know where to seek and contribute knowledge. A solution is needed to give students a platform to free flow information from the university to improve the quality of the university service, and to contribute with other students with their academic and non-academic issues and their knowledge for updating their information.

Information can be defined as a fact or condition of knowing something with knowledge gained through experience or association. The meaning of knowledge was adopted from Oxford Advanced Learner Reference. Knowledge is best defined as actionable information-deeper, richer, and additional expansive. Actionable implies when and where it is needed to make the right decision, and the right background [2]. Knowledge is meant to provide a competitive advantage through the resource based view because it is one of the resources of the firm that is difficult and impossible for other firms to imitate [3].

There are two types of knowledge, which is tacit and explicit knowledge. As for other sources, demonstrates the organizational complexities of attempting to manage the dynamic process of knowledge generation. The author defined knowledge as possessing one of the two main characteristics –tacit or explicit knowledge [4]-[5]. Knowledge exists at multiple levels within organizations [6] divided it into individuals, groups, and organizational levels [7] added the levels of departments and divisions. Although individuals constitute only one level at which knowledge resides within organizations, the sharing of individual knowledge is imperative to the creation, dissemination, and management of knowledge at all the other levels within an organization whereby knowledge is created through interaction between individuals at various levels in the organization[8][9].

## II. CURRENT ISSUES

The staff at the Centre for Graduate Studies (CGS) used the phone, fax, post, and electronic mail to contact students, in case there is a requirement. Because of the huge number of prospective students and their problems, the center found it difficult to solve all of their problems. Some prospective students still send the admission documents by email to their friends who study in UTHM in order to get admissions, registration information at the university and inquire about dates of registration and the system of study, facilities and programs in the departments.

Currently, the old UTHM website has not enough information about the university, and there is no accessible platform for the UTHM to contribute and give all knowledge needed by the International Postgraduate Students. Therefore, based on web-based technology, knowledge management website is required to facilitate the knowledge among the International Postgraduate Students in UTHM and to reduce a perceived gap in knowledge management within the students. The portal should provide access to information more easily related to a wide variety of activities and help the knowledge to be shared and available for the International Postgraduate Students inside or outside the UTHM.

## III. Methodology

### A. System Design

In the operational framework, which is design and refine, it relies on the developing a prototype of knowledge management. Thus, prototyping is an iterative process of systems development in which requirements are converted to a working system that is continually revised through close work between users. The design is based on the data collection whereby the prototype requirements are based on the data collection process results. Followed by, refine the prototype continuously until the objectives are achieved, which is stated in the following points:

1. Build a new model works to facilitate the management of international postgraduate students in one site.
2. Study and understand the requirement of this project.
3. Enable supervisors to view everything that their respective students have stored in the website such as the milestone and discussions.
4. Using available technology to design a WEB-based management of the information prototype as a critical component for UTHM to enhance CGS services and international students. Figure 1 presents common paper structure.

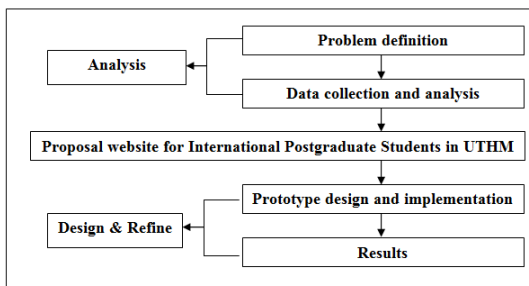


Figure 1. Operational Framework

This diagram started with defining the problem and determining the problem domain and scope, and the objectives to be achieved at the end phase.

The website development requires some hardware which is necessary for designing, developing, and testing the system. The requirements of hardware are listed in Figure2.

Table 1. Requirements Specifications

NO	Hardware Item	Minimal Specification
1	Processor	Intel Pentium IV or AMD (1 GHz Speed)
2	Hard Disk Storage	Free GB
3	RAM	256 MB
4	Monitor	14" SVGA Color
5	Modem or LAN Card	56 Kbps/ 100 Mbps
6	Mouse and Keyboard	PS2
7	Printer	Ink-Jet/ Laser-printer
8	CD-ROM Driver	16X Max

### B. Use case module

Use cases are scenarios for understanding system requirements. A use-case model can be instrumental in project development, planning and documentation of systems requirements. In order to understand the proposed system, this section will describe all visual diagrams of the system. Unified Modeling Language (UML) is chosen for specifying, constructing, visualizing and documenting the Improving Web-site for International Postgraduate Students in UTHM.

### C. Actors

An Actor is someone or something outside the system that interacts with the system. In this case, there are three types of actor which are a student, Visitor and System Administration. Figure 2, shows those main actors in the system.

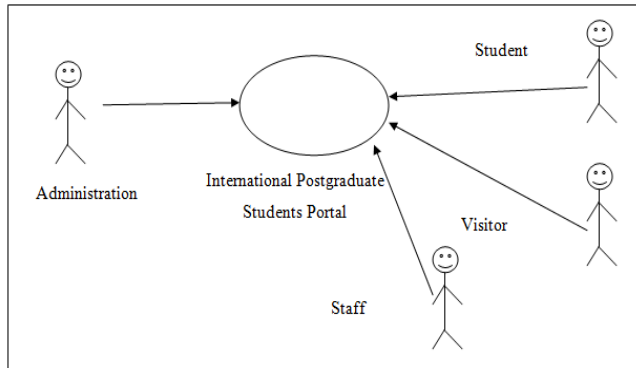


Figure 2. Actors of International Post graduate StudentsPortal

This figure just describes who can use this website in the university.

## IV. IMPLEMENTATION

The development of this website for International Postgraduate Students Portal has been taken into consideration of user requirements. The main function of my prototype is to allow members to exchange views and ideas that they have on any matters submitted into the portal. In addition, the prototype portal allows users to imagine the solution for their problems

they have asked about them.

### A. Prototype Interface Design

In this part, the prototype interface has been designed according to the model of Improving Web-site International Postgraduate Students in UTHM. The main function of the prototype is to provide postgraduate students with online communication with Centre for Graduate Studies (CGS) staff instead of the current communication media such as phone and E-mail. In addition, the CGS website structure proposed by has been followed in order to benefit from the usability study of the Centre for Graduate Studies website for customer satisfaction. Also, these some case studies have been included with this project in order to provide a continual integrated improvement for CGS portal. For manageability of designing the prototype, it has been divided into three main menus which are the main menu, Registration Students, Knowledge Management and Monitoring of Postgraduate Student.

### B. Monitoring of Postgraduate Student

The Monitoring of International Postgraduate Student (MIPS) will allow supervisors to track their student's research milestone progress. View the contents of the previous and future intended meeting conducted with the students to upload reports through online. The system is developed using SQL.

The interface design was done by using ASP.NET software. And the interface must be made to be displayed via a web browser. It is also must be user-friendly, with intuitive characteristics that make the learning curve short, so that users do not have to spend much time getting familiar with the system. To separate each module built within the system, the site will consist of several pages. This part will show some of the taken snapshots of the system interface.

### C. Registration Students Module

Centre for Graduate studies (CGS) in UTHM using two systems in the center. Data for the students stored in the same database Student Information System (SIS) and Academic Student Information System (ASIS). Through this website can be CGS register new students and query for international postgraduate students, in the same page there is inbox receive a new email from registration new student when register in the online application. There are also three tables in this system (table new student, table current student, table all students) in international postgraduate students at the university.

The postgraduate registration system in web based system meaning it runs from a browser. The system has also been a web database application because it has the long term and short term storage information, using a database. There are two kinds of database which are the new student and current student. So when the user registers new student the data directly save in the table current student. The system should allow those two kinds of users to edit and delete the specific information accurately.

## V. KNOWLEDGE MANAGEMENT MODULE

The Students Gathering is the module developed with the intention of providing a platform for the students. This will help students to share their knowledge with others in order to have as much as information. The only user who uses these tools should be registered students. Each registered member in the portal will have his/her own profile thus other students can contact with this person through his/her profile information (email, Telephone, etc.). In the knowledge framework, the researcher used the KM tools which involved Knowledge Acquisition tools. . This step allowed researcher to understand what kind of information and knowledge students need. From identifying the problems, it will be clear what the researcher needs to use on the ICT application to help students in order to overcome those problems. The Knowledge management tools proposed in this situation are to use knowledge sharing portal with features inside it that will help students to acquire and share their experience, information, and knowledge.

**A. Forum Module**

All registered students and staff have the capability to create a topic for discussion or respond on a topic. With this functionality, international postgraduate students can share their knowledge with each other without boundaries. Figure 3 and Figure 4 give brief description to the pages in student’s forum.

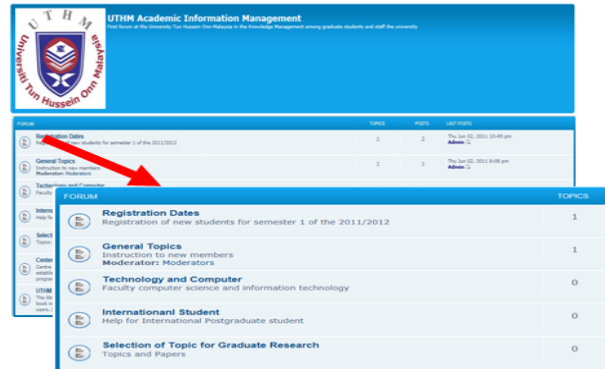


Figure 3. Forum First Page

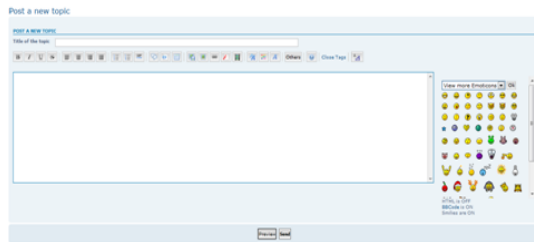


Figure 4. Post a new topic

As mentioned earlier, knowledge sharing tools include personalization elements. The phpBB3 forum involves a lot of tools for users– profile, board performance, private message, user group, friends & foes and overview. Each member in the forum has a control panel. So, any of members can personalize his/her pages. Moreover, the user control panel includes one of important elements needed by the user which is friends list. The friends list

allows other users in the forum to add friends to their friends list in order to trace those friends' articles, topics, replying, or contact with them.

Forum is the best knowledge sharing tools which has the powerful effect on the community of practice. Knowledge sharing framework indicated that any member in the target community of practice can be either Knowledge Owner or Knowledge user. In such a forum, students can play both roles.

**B. Online Chat Module**

Registered students and staff have the capability to enter into the chat room for sharing online topics discussion. With this functionality, international postgraduate students can share their knowledge with others in a friendly environment with a lot of powerful tools. The chat room was designed by using 123 Flash Chat Room as mentioned in chapter three. This tool was made for synchronize communication between the users. Figure 5 gives brief description to the first page.

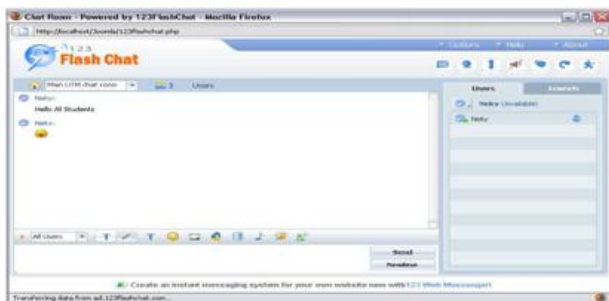


Figure 5. Chat Room

123 Flash Chat Room has many serviceable elements. Shows screen shout for Video and Audio. Some examples of the most important elements are:

1. Add friends to your friends list.
2. Private chat.
3. Change personal appearance in chat room.
4. White board.
5. Video and Audio.
6. Image transfer.

### *C. Enquiry for Faculties and Departments*

There are seven faculties in UTHM. In each faculty there are many departments with their staffs. Through this page the international postgraduate student needs some information for staff and CV to each employee. The international student can download the CV to staff in the faculty.

### *D. UTHM library*

This includes how information resources are organized to serve the needs of select user groups, how people interact with classification systems and technology, how information is acquired, evaluated and applied by people in and outside of libraries as well as cross-culturally, how people are trained and educated for careers in libraries, the ethics that guide library service and organization, the legal status of libraries and information resources, and the applied science of computer technology used in documentation and records management. Page includes a library of several components of:-

#### **1. Research Postgraduate Student Graduated.**

From this page can download research graduate students with the entire information thesis.

#### **2. Centre for Graduate Studies Video sharing.**

This section was made for sharing video that uploaded by students. This module can be considered as downloadable documents center for the international postgraduate students. In documents sharing module, there are two categories, academic documents and non academic documents. The user can choose any of these categories and upload his/her documents, or if the user would like to find a document, he/she can search for a particular document and download it. The administrator job here is just to check out if documents are legal or illegal according to the university policy. If the administrator finds document is illegal or not appropriate to be published among the students, he/she can delete it immediately.

#### **3. UTHM Forum.**

Forum is the best knowledge sharing tools which has the powerful effect on the community of practice. Knowledge management framework indicated that any member in the target community of practice can be either Knowledge Owner or Knowledge user.

#### **4. Wiki Module**

The Wiki was added to the portal as free software to seek sharing knowledge among the students. This software is accessible for registered students. The students will have the capability of creating a topic for discussion or as providing information. With this functionality, international postgraduate students can share and add more knowledge with other students. Using such media will create an academic social relationship among the students, which is useful and an encouragement environment area for them to share and participate their ideas and information.

#### **5. Library Catalogue**

This is to review all links Malaysian universities to help these international students in the search for academic subjects

## VII. OPERATIONS TO SEARCH FOR INFORMATION

### *A. General Inquiry Module*

In this module, the student can contact CGS staff online for general inquiries such as academic, examination, academic off campus and international students. The online communication tools used in this module are the E-mail or phone, student webmail, CGS forum and online chat.

The CGS E-Mail Form provides students with the contact information of CGS staff involved in this module. The position, E-mail, and phone number for each staff. When a student chooses one staff to contact with, the E-mail Form is displayed and the E-mail message can be sent from this form directly without the need to open a student's email account in order to send an Email.

The messaging tools alternative in General Enquiry Module is the CGS Forum. When a student chooses these tools, the General Enquiry Forum going to be displayed once student login into the portal, they are already login to the Forum. The

student and CGS staff can add new topic, post reply, attach files, and send private mail to each other. The online chat module has its own chat room. The same here, the student and CGS staff do not need to login to the chat rooms because they already login to their portal account. The student can chat with room admin by private chatting. In addition, the video and audio chatting is supported in the CGS Chat Rooms.

*B. Academic Information Module*

The student can inquire about any academic resources by the postgraduate program, Blogger, academic portal, bindery, document sharing , UTHM Guide, online application The student can inquire about the status of their online application by CGS Email Form, UTHM messaging account and online chat. The student can use the University Rules and Services, and the CGS Video sharing page is used in this module in order to enrich the CGS website. Both students and staff are asked to add new topics, videos, comments, and so on.

VI. RESULTS AND DISCUSSION

We got the following results in Table2.

Table 2. Results websites

<b>Items</b>	<b>CGS 2010</b>	<b>Others Websites</b>	<b>Current website2011</b>
<b>Structural system</b>	5%	10%	10%
<b>Development</b>	15%	10%	20%
<b>Implementation</b>	10%	5%	20%
<b>Validation</b>	10%	5%	10%
<b>Creative and innovative features</b>	10%	5%	20%
<b>Total</b>	50%	35%	80%

An officer from PTM, UTHM has checked this work using rubrics by FSKTM. We made comparison and successfully got the percentages based structural system, development of website, implementation, validation & creative features.

Universiti Tun Hussein Onn Malaysia (UTHM) has a significant level of KM activities, and use them as foundations for further development, rather than to invent a whole new paradigm. UTHM and their students must recognize and respond to their changing role in a knowledge-based society. In order to assess the challenges that higher education institutions face in embedding KM, it can use three types of Knowledge Management objectives to viewing CGS: improving knowledge access, enhancing knowledge environment and valuing knowledge.

Website for international postgraduate students is designed for flexibility and user friendly purposes. It is intended to simplify the knowledge of creating and maintaining a fully purpose able website. Although there are similar web builders available in some universities, some websites use friendly and efficient.

With the existence of a website, the target users can fully utilize the web-space provided to them in a more convenient, timeserving and professional way, which will then increase the overall work performance. With this, students will be able to gain as much information as possible and simultaneously in a chance users to enjoy the features and maximizing the work performance for all academic organizations in Malaysia.

## VII. THE CONTRIBUTION OF KNOWLEDGE MANAGEMENT IN WEBSITE

The contribution of this paper is:-

1. How design website based knowledge management.
2. This study about improving website using knowledge management.
3. How UTHM graduate school can enable knowledge management to be used effectually for International Postgraduate Students.

## XI. CONCLUSION

In this paper, we have proposed to improve knowledge management of CGS, UTHM. Based on a rubric system at FSKTM, UTHM. We have successfully developed better website for UTHM's International Post Graduate Students. This can be used to support international postgraduate students practices and KM activities.

## ACKNOWLEDGMENT

Thanks to UTHM for giving me the opportunity to use its web site for my research. Many technicians and lecturers like Dr Mohd Najib has helped me. And all staff in faculty Computer Science and Information Technology (FSKTM) UTHM.

## REFERENCES

- [1] UTHM, I.T.C., (2010). UTHM. [Online].
- [2] Hsia, T.L. & Lin, L.i. (2006). A Framework for Designing Nursing Knowledge Management Systems. *Interdisciplinary Journal of Information, Knowledge, and Management*, 1, pp.13-22.
- [3] Tiwana, A., (2000). *The Knowledge Management Toolkit: Orchestrating IT, Strategy and Knowledge Platform*. Goliath Business Knowledge on Demand.
- [4] Spender, J.c., (1996). *Competitive Advantage from tacit Knowledge*. Sage ed. London R
- [5] Nonaka, I., (1991). *The Knowledge Creating Company*. Harvard Business Review.
- [6] Delong, D. & Fahey, L., (2000). Diagnosing Cultural Barriers to knowledge Management. *The Academy of Management Executive*, pp.112-27.
- [7] Gazem, N.A., (2009). *Knowledge Sharing Portal For International Postgraduate Students in UTM*. Inpublished . University Technology Malaysia.
- [8] Abdullah, R., Shahabudin, S.b., Alias, R.A. & Selamat, M.H., (2007). Developing Knowledge Management System for Public Higher Learning in Collaborative Environment. *International Journal of Computer Science and Network Security*, 7(7, July 2007), pp.331-41.