

**KNOWLEDGE SHARING PORTAL FOR INTERNATIONAL
POSTGRADUATE STUDENTS IN UTM**

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TO MY BELOVED
FATHER, MOTHER AND WIFE
ASSO. PROF. WARDAH ZAINAL ABIDIN
FAMILY MEMBERS
BEST FRIENDS

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ABSTRACT

The evolvement of information and communication technology (ICT) gave the organization an opportunity to enhance their services and productivity. One of the ICT tools is knowledge management. Knowledge management is a process of organizing, identifying, and sharing knowledge either tacit or explicit experience, and expertise that typically resides within individuals in an organization. Equally fundamental, in the information society, is the sharing of knowledge between people in different locations. The purpose of this research is to help foreign postgraduate international students to overcome their academic and non academic problems during their study at Universiti Teknologi Malaysia (UTM). Identifying the appropriate requirements needed by these students in UTM will help this research to achieve that object. Therefore, this research proposed a portal to serve as a knowledge sharing platform for the foreign postgraduate students in UTM. By using questionnaires and doing interview with the international students as a methodology, the main findings of the study which are the knowledge and information that need to be shared among the foreign students are studied. The data was analyzed using Statistical Package for Social Sciences (SPSS) version 16.0. These findings were then incorporated in the form of a prototype web-based Knowledge Sharing Portal. In structuring the portal prototype, the portal was developed using PHP, Macromedia Dreamweaver MX, My SQL, and Rational Rose. Due to the development of this portal, it is expected to gain a lot of benefits in solving the community members problems and enhance and facilitate knowledge sharing among the students.

ABSTRAK

Perkembangan teknologi maklumat dan komunikasi (ICT) memberi peluang kepada organisasi untuk meningkatkan mutu perkhidmatan dan produktiviti. Salah satu alat ICT adalah pengurusan pengetahuan. Pengurusan pengetahuan adalah proses di mana pengetahuan disusun, dikenalpasti, dan dikongsi samada pengalaman dan kepakaran secara tersurat atau tersirat yang secara dasarnya terdapat dalam diri individu dalam organisasi. Dalam masyarakat teknologi maklumat, berkongsi maklumat antara manusia pada lokasi yang berbeza adalah perkara asas. Tujuan kajian ini adalah bagi membantu para pelajar antarabangsa pasca graduat untuk mengatasi masalah akademik dan bukan akademik mereka sepanjang pengajian di Univerisiti Teknologi Malaysia (UTM). Pengenalpastian keperluan-keperluan berkenaan yang diperlukan oleh para pelajar ini dalam UTM akan membantu kajian ini mencapai objektif. Maka, kajian ini dicadangkan agar satu portal disediakan sebagai platform untuk memberi khidmat perkongsian maklumat bagi pelajar asing UTM. Melalui soalselidik dan temubual dengan para pelajar asing sebagai metodologi, carian utama bagi kajian adalah pengetahuan dan maklumat yang diperlukan untuk dikongsi sesama pelajar asing akan dikaji. Data dianalisa menggunakan pakej statistik bagi sains sosial (SPSS) versi 16.0. Dapatan akan disatukan dalam prototaip borang berasaskan web Portal Perkongsian Pengetahuan. Dalam menstruktur prototaip portal, portal akan dibangunkan menggunakan PHP, Macromedia Dreamweaver MX, My SQL, dan Rational Rose. Pembangunan portal ini adalah diharapkan dapat memberi banyak manfaat dalam menyelesaikan masalah pelajar asing dan agar dapat membantu serta dapat menguruskan perkongsian maklumat dalam pelajar.

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CHAPTER 1

PROJECT OVERVIEW

1.1 Introduction

Universiti Teknologi Malaysia (UTM) is the oldest public engineering and technology university in Malaysia. It has more than 20,000 students over 25% are post graduates. Since the 1990s, the number of foreign students, particularly from neighboring Asian countries, the Middle East, and Africa, has been increasing. Although the UTM has undergraduate and postgraduate foreign students from many countries, the research in this project is going to focus on the international postgraduate students (IPS) only. Through this project, the researcher is going to identify appropriate requirements and components of Knowledge Sharing Portal for International Postgraduate Students in UTM depending on some literature reviews and questionnaires. The sections of the project are categorized into chapters.

In this part of the chapter, it will contain problem background, problem statement, objectives of the project, scopes of the project, significance of the project and summary.

The literature review chapter established background of the study by reviewing knowledge and knowledge sharing, looking for available knowledge sharing frameworks or models, examining knowledge portal, and brief looking in community of practice and how to design website.

The research methodology chapter elaborated and briefly explained the activities and operational framework for this study. It also identified the most appropriate procedures and techniques to be used in order for smooth implementation of the study.

The analysis chapter analyzed the information gathered based on the information from literature resources, questionnaire and interviewed with the community of practice which are postgraduate students, School of Graduate Studies (SPS), and International Postgraduate Students Society (IPSS). The interview and questionnaire findings analysis are based on the opinions and suggestions given by respondents regarding the research problem.

The prototype design and user testing chapter discussed the process of developing a prototype web-based International Students Knowledge Sharing Portal based on the features and requirements that have been collected the information through the sets of questionnaires that were given to and discussed with the students earlier. After the researcher has developed the prototype, the next step was to test this portal through presented it to group of postgraduate students in UTM.

The organizational strategy chapter proposed the method or strategy that can be undertaken by UTM in order to develop the International Students Knowledge Sharing Portal which in return will help the management of UTM to encourage their students to use it.

Finally, the discussion and conclusion chapter contains the achievements, constraints, challenges and future enhancement of the project.

1.2 Problem Background

The use applications of information and communication technologies (ICT) still the most powerful tool for the organization development. One of the ICT tools is Knowledge Management (KM). Basically, KM helps an organization to gain insight and understanding from its own experience. Specific knowledge management activities help focus the organization on acquiring, storing and utilizing knowledge for such things as problem solving, dynamic learning, strategic planning and decision making. It also protects intellectual assets from decay, adds to firm intelligence and provides increased flexibility. Knowledge and information produced should be shared and delivered fast and information technology must offer the solutions that are able to fulfill the requirements of the organization.

One of the key elements of a knowledge management system in an organization is knowledge sharing. Generally, knowledge sharing is the fundamental requirement of a knowledge-based organization. Therefore, knowledge management can be described as a management of organizational knowledge for creating business value and generating competitive advantage then avoiding sole ownership and hoarding of knowledge(Yaz, 2004)..

The key to a successful knowledge dissemination strategy is to channel the knowledge to the communities of practice and at the same time provide means for information exchange and peer-to-peer collaboration, Martin and Eklund(1990). One of the models for a virtual collaborative research environment that provides means for both, knowledge sharing and collaboration is the “Knowledge Portal” model. Or

we can say that the aim of knowledge portals is to make knowledge accessible to users and to allow users to exchange knowledge. Knowledge portals specialize in a certain topic in order to offer deep coverage of the domain of interest and, thus, address a community of users.

A university represents the ultimate knowledge organization. However, many researchers are not aware of the research activities within their own universities. This often leads to redundancy in areas of research as well as reduced innovation and productivity since they are not aware of the available expertise and resources that could greatly contribute to their own research endeavors. Knowledge management represents a systematic means of acquiring, sharing, and using knowledge effectively within an organization.

To gather all UTM students, the UTM has site (UTM, Yahoo! Groups) which is to be a platform for updating information on UTM and its members, to have discussions, provide opinions and feedback. The aim of that site is to pool UTM resources to help the student communities especially in areas such as education and social issues. Although this work has been done for the previous reasons, but the international students still have many problems.

The UTM international students are using Yahoo! Groups email to participate with each other their knowledge, ideas, information, or social issues. This does not consider suitable technique for many students since they usually add their own emails to the group. In the mean time the same emails are used for friends, relatives, or other purposes. This may cause confusion to the students and does not give them the desire to check all the emails which are sent by the UTM Yahoo! Group. From researcher perspective, the previous method does not help students to share or get enough knowledge because it lacks to meet the appropriate information knowledge requirements needed by international students.

In any organization exchange knowledge has been considered an important factor to improve its work. Even the UTM website have enough information about the university, yet it failed to meet the international students' needs. One of the biggest problems that is facing the international students is the fact that the majority of the international students don't speak or understand the Malay language. In some part of the UTM websites information is presented in the Malay Language, this causes problem to foreign students to know more about the university. In additional, The SPS provides the postgraduate students with some forms needed by the students. For Example, form to drop subject(s). This form was written by Malaysian Language. Therefore, the students often complain from the information which written in such language.

As we know, technology plays an important role in the knowledge-based world and being a principle underlying the development of effective knowledge sharing. At present, there is no accessible platform for the UTM to contribute and give all knowledge needed by the IPS. With no specific platform, there are many obstacles exist in sharing the knowledge. Therefore, based on web-based technology, knowledge sharing portal is required to facilitate distributing the knowledge among the IPS in UTM and to reduce a perceived gap in knowledge sharing 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 IPS inside or outside the UTM.

1.3 Problem Statement

At present, there is no common knowledge portal for the IPS to first enable to share knowledge among themselves and second to acquire knowledge from other students in the UTM. Based on that, the current problem for the IPS in UTM that they do not know where to seek and contribute knowledge. A solution is needed to

give students a platform to continuously get information from the university to improve the quality of the university service, and to contribute with other students with their nonacademic issues and their knowledge for updating their information.

From what has been said, this project is done for the sake of answering the following question:

- How can the problems of the foreign graduate students in UTM be overcome using ICT applications?
 - I. What are the problems categories that are faced by the foreign postgraduate students in UTM?
 - II. How to identify the main requirements to develop an effective and useful knowledge sharing portal for UTM international postgraduate students?
 - III. How can the knowledge sharing portal assist the IPS in UTM in academic and non academic issues?

1.4 Objectives of The Project

By answering the problem statement questions, the researcher has identified four main objectives to be achieved as the end result of the project:

- 1- To Study the Knowledge Sharing basics and ideas.
- 2- To study and analyze the critical requirements of a knowledge portal for international postgraduate students in UTM.

- 3- To design web-based prototype of knowledge sharing portal for UTM international postgraduate students.
- 4- To formulate strategy in developing the knowledge portal.

1.5 Scopes of The Project

The objectives of this study were stated in the previous section. In order to achieve the study objectives, it is important to highlight the study area and its boundaries, which are stated in the following points:

1. Identifying academic and nonacademic problems that may be faced by the IPS through interviewing with the IPS, SPS and IPSS deans.
2. The features for the proposed system were based on questioning activities which spread out randomly to the international postgraduate students and demonstrate the primary prototype.
3. Include the processes involved in the knowledge portal for UTM through identifying and analyzing requirements needed by international postgraduate students.
4. Using available technology and web.2 in order to develop a web-based knowledge portal prototype as a critical component for UTM to enhance IPS services.
5. The interfaces of the portal pages contain English Language only.

1.6 Significance of The Project

The project hopes to benefit the International Postgraduate Students and School of Graduate Studies in UTM. Developing knowledge portal can improve the quality of academic services as the following perspectives:

I. Students Perspective

- The knowledge sharing portal will help the international postgraduate students outside the Malaysia to get information about the UTM.
- The international postgraduate students inside the UTM can share and exchange their knowledge with others through using the knowledge sharing tools which are involved in the portal web-based.
- Wider range of resources to get knowledge.

II. UTM Perspective

- Knowledge sharing portal of international postgraduate students will help UTM in sharing and distributing knowledge and information to the foreign postgraduate students.
- The knowledge portal should help the university to reducing the time and effort to enhance their services with regard to the international students.
- Providing useful and up-to-date information about university and programs.
- Easy to interact and communicate with foreign students.

1.7 Summary

The problem background and problem statement have been discussed in this chapter to give an introduction of the project and to explain why this project has been proposed. The objective, scope and the importance of this project have also been pointed out. Hopefully, by developing the project successfully, the objective and aim of the project can be achieved.

The knowledge portal is a user-centered environment which a user could gain access to information and knowledge from a single internet location. To achieve this goal, there should be a strategy for designing a system for international student service. Developing a Knowledge Sharing Portal for the international students is powerful tool to achieve this service. The future work is to use web-based technology to implement this design in the university information system.

REFERENCES

- Aida, S. S., Azizah, A. R., and Wardah Z. A. (2009). The Selection of Knowledge Sharing Tools for Special Children Community. *Postgraduate Annual Research Seminar 2009 (PARS09)*. 17-18 June 2009. Universiti Teknologi Malaysia Skudai Johor, pp.7.
- Amrit Tiwana (2000). *The Knowledge Management Toolkit*. Upper Saddle River: Prentice Hall.
- Ang Bee Leng, and Lee Ting Ting. (2002). The Quest for Knowledge. *Computer World Magazine*.
- Applehans, et.al. (1999). *Managing Knowledge: A Practical Web Based Approach*. Addison Wesley, Information Technology Series.
- Bahrami, A. (1999). *Object Oriented Systems Development*, Boston, McGraw Hill.
- Bartol, K. M., & Srivastava, A. (2002). Encouraging knowledge sharing: The role of organizational reward systems. *Journal of Leadership & Organizational Studies*. 9(1), 64-77.
- BEA Systems, Inc., (2004), "BEA Weblogic Workshop". Version 8.1 SP4
- Blackler, F. (1995). Knowledge, knowledge work and organizations. An overview and interpretation. *Organization Studies*, 16 (6), 1021-1046.
- Brown, J. S., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2(1), 40-57.
- Brown, J. S. and Duguid, P. (2000). *The Social Life of Information*. Harvard Business School Press, Boston, MA.
- Cook, S. D. N., & Yanow, D. (1993). Culture and organizational learning. *Journal of Management Inquiry*. Pages, 373-390.

- Davenport, T.H. (1995). "Think Tank: The Future of Knowledge Management", *CIO*.
- Davenport, T.H and Prusak, Lawrence. (1998). *Working Knowledge: How Organizations Manage What They Know*. Harvard Business School Press. Boston, MA.
- DeLong, D. & Fahey, L. (2000). Diagnosing cultural barriers to knowledge management. *Academy of Management Executive*, 14(4), 113- 127.
- Denham, Grey (2001). "Knowledge and Organization: A Social-Practice Perspective". *Organization Science*, vol. 12 (2).
- Drucker, P. (1993). "Managing in a Time of Great Chance", *Butterworth Heinemann*, Oxford.
- Ghoshal, S., & Bartlett, C. A. (1994). The dimension of quality management. *Strategic Management Journal*, 15 (Special Issue), 91-112.
- Hamzah Kasim (2003). Knowledge Management Framework For Public Sector. *Putrajaya: CIO Conference*.
- Hansen, M.T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly* (44), pp. 82-111.
- Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and Process Management*, 6(2), 91-100.
- Huber, G. (1991). Organizational learning: The contributing processes and the literatures. *Organization Science*, 2(1), 88-115
- Huemer, L., von Krogh, G., & Roos, J. (1998). Knowledge and the concept of trust. *Knowing in firms: Understanding, managing and measuring knowledge* (pp.123-145). Thousand Oaks, CA: Sage
- Lam, A. (2000). Problems of collaboration and knowledge transfer in global cooperative ventures. *Organization Studies* (18:6), pp. 973-996.
- Leonard-Barton, D. (1995). *Wellsprings of knowledge: Building and sustaining the source of innovation*. Boston: Harvard Business School Press.
- Lim Ang Lean. (2003). "Knowledge Management In Hindsight". *NSTP In Tech Magazine*, NSTP. 27 Mac 2003.

- Lowendahl, Revang, B., & Fosstenlokken, F. (2001). *Alternative educational systems: a multi-case study in museum schools*. Bloomington, IN: Thesis (Ph.D.), Indiana University.
- Knowinc.com, (2001). "Knowledge Management Definitions". *The Knowledge management info@knowledgeshop.com*
http://www.knowinc.com/knowledge_sharing_tools.asp (23rd February 2009)
- March, J.G. (1994). "A Primer on Decision Making; How Decisions Happen". *New York, NY*; Free Press.
- Martin, P., Eklund. P. (1999). Embedding Knowledge in Web Documents, In Proceedings of the 8th Int. World Wide Web Conf. (WWW'8), Toronto, Elsevier Science B.V.
- McDermott, R.,&O'Dell, C. (2001).Overcoming cultural barriers to sharing knowledge. *Journal of Knowledge Management*. California. Pages, 76-85.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital and the organizational advantage. *Academy of Management Review*, 242-266.
- Nonaka, I. (1991). The Knowledge Creating Company. *Harvard Business Review*. 69, 96-104.
- Nonaka, I. and Takeuchi, H. (1995). The knowledge-creating company: How Japanese companies create the dynamics of innovation. *New York, NY*: Oxford University.
- Roos, J., & von Krogh, G. (1992). Figuring out your competence configuration. *European Management Journal*. Pages, 422-444.
- Roth, W.-M. (1999). Authentic school science: intellectual traditions. In: McCormick, R and Paechter, C. (eds). *Learning and knowledge*. London: Paul Chapman Publishing, pp.6-20.
- Rulke, D. L.,&Zaheer, S. (2000). Shared and unshared transactive knowledge in complex organizations. *Organizational cognition: Computation and interpretation*. Mahwah, NJ: Lawrence Erlbaum.
- Sallis, E and Jones, G. (2002). Knowledge management in education: enhancing learning and education. *London: Kogan Page*.
- Sharp, J. (1997). Communities of Practice: A Review of the Literature.
<http://www.tfriend.com/cop-lit.htm> (3rd March 2009)

- Siteground.com (2009). What is PhpBB Forum.
http://www.siteground.com/popups/phpbb_popup.htm (4th Aug, 2009).
- Spender, J.C. (1996). *Competitive Advantage from tacit Knowledge*, London: Sage.
- Stenmark, D. (2001). Leveraging tacit organizational knowledge. *Journal of Management Information Systems*. Pages, 9-24.
- Tatiana Gavrilova, HaiNan Jin (2008). One Approach To Knowledge Mapping For International Student Portal. *Conference of Knowledge-Dialogue-Solution*. KDS 2008, Varna, Bulgaria.
- Toffler, A, (1985). *The Adaptive Corporation*. McGraw Hill. University of Cambridge (1995). "Cambridge International Dictionary of English". *Cambridge University Press*.
- Van Beveren, J, (2002). A Model of Knowledge Acquisition that Refocuses Knowledge Management, *Journal of Knowledge Management*. Pages, 18-22.
- Weiss, L. (1999). Collection and connection: The anatomy of knowledge sharing in professional service. *Organization Development Journal*. Pages, 61-72.
- Wenneker, M., Selm M.V. & Nelissen P. (2002), Role of ICT in Processes of Knowledge Sharing in Organizations. *Conference of the Association of Internet Researchers*. Maastricht, The Netherlands,
- Yaz (2004). *Knowledge Sharing Portal For ICT Academic Community*. Pages 2, 17. Universiti Teknologi Malaysia, Skudai.