ENHANCEMENTS OF E-LEARNING SYSTEM BY USING SOCIAL NETWORK FEATURES

JAMILAH BINTI MAHMOOD

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Universiti Teknologi Malaysia

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This dissertation is dedicated to my parents and family members for their love, endless support and encouragement. Not to forget to the lecturers and friends who give encouragement and help to drive success.

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ABSTRACT

E-learning that is used in the organization is found to be lack of knowledge sharing elements. Instead of using e-learning, user tends to use other alternatives site like social network to share knowledge. The knowledge sharing barriers in e-learning are identified from the analysis on past papers and questionnaire. The barriers found are willingness to share, changing organization culture, social relationship, features is difficult to use, limited functions, limited user access, knowledge evaluation and as well as the representation of features are not interesting. However, social network is found to have a strong relationship with knowledge sharing and its features are useful in solving the technology problems. It can facilitate knowledge sharing in two ways, which are by increasing knowledge reuse within users and by eliminating the reliance on formal liaison structures. The features of social network are analysed and enhancements of e-learning are proposed. The enhancements are evaluated by using questionnaire and interview. The results found that in order to enhance knowledge sharing in e-learning, the organization should embedded the knowledge sharing culture in student activities and promote the existing best features of e-learning to users. Besides, e-learning should provide more space for user's profile and medium of communication for its user. In order to present the enhancements, a framework is developed. The framework consists of five components which are academic information system, mobile service/webcast, learning portfolio, knowledge management engine, websites/emails/blogs and knowledge sharing tools. The social network features are embedded into the knowledge sharing tools components. The features are Status Update, Message, Media Sharing, Notes, Share, Like, Quote, Mention, Hashtag and Trends. The improvements on existing features with embed social network features will enhance knowledge sharing e-learning.

ABSTRAK

E-pembelajaran yang digunakan dalam organisasi mempunyai masalah kekurangan unsur-unsur perkongsian pengetahuan. Walaupun pengguna sistem mempunyai kemudahan e-pembelajaran, mereka lebih cenderung untuk memilih cara alternatif seperti rangkaian sosial untuk berkongsi pengetahuan. Masalah perkongsian pengetahuan dalam e-pembelajaran dikenal pasti daripada analisis dari kajian lepas dan soal selidik. Antara masalah-masalah yang dikenal pasti adalah ketidakrelaan untuk berkongsi, budaya organisasi, hubungan sosial, fungsi perkongsian sukar untuk digunakan, fungsi yang terhad, fungsi tidak menarik, akses pengguna terhad dan nilai pengetahuan. Namun begitu, rangkaian sosial didapati mempunyai hubungan yang kuat dengan perkongsian pengetahuan dan fungsinya berguna dalam menyelesaikan masalah yang dikenalpasti. Rangkaian sosial boleh memudahkan perkongsian pengetahuan dalam dua cara, iaitu dengan meningkatkan penggunaan semula pengetahuan dan menghapuskan pergantungan kepada struktur perhubungan formal. Fungsi rangkaian sosial dianalisis dan penambahbaikan e-pembelajaran dicadangkan. Penambahbaikan dinilai dengan menggunakan soal selidik dan temu bual. Keputusan mendapati bahawa organisasi perlu menanam budaya perkongsian ilmu dalam aktiviti pelajar dan mempromosikan fungsi terbaik yang sediaada. Selain itu, e-pembelajaran perlu menyediakan ruang profil pengguna dan medium komunikasi untuk pelajar dari fakulti yang berbeza. Dalam usaha untuk membentangkan penambahbaikan, rangka kerja dibangunkan. Rangka kerja ini terdiri daripada lima komponen iaitu sistem maklumat akademik, perkhidmatan mudah alih/siaran, portfolio pembelajaran, enjin pengurusan pengetahuan, laman web/e-mel/blog dan alat perkongsian pengetahuan. Fungsi rangkaian sosial yang dicadangkan adalah Status Update, Message, Media Sharing, Notes, Share, Like, Quote, Mention, Hashtag dan Trend. Penambahbaikan kepada fungsi yang sedia ada dengan fungsi rangkaian sosial akan meningkatkan perkongsian pengetahuan di dalam e-pembelajaran.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

e-learning is an electronic learning which consists of an acquisition of knowledge by using computer and internet-based courseware. e-learning system is used to transfer knowledge and skills (Qwaider 2011). Besides, e-learning also can be defined as a process to acquire data, information, skills or knowledge. It enables transfer process on leveraging knowledge held in different parts of the organization, so users can use e-learning to share knowledge on their interested topic easily and get respond faster. The stakeholders of e-learning are learners, faculty, administrative, technical staff and employers (Ozkan and Koseler 2009).

e-learning is mostly used in university nowadays to manage information and knowledge, but the presences of the system does not guarantee that the people in the university used the system at the optimal way. e-learning are not widely used in the university although user know the importance of managing the knowledge. This study tends to focus only on knowledge sharing problems in e-learning. Knowledge sharing (KS) is defined as the process of exchanging knowledge (skills, experience, and understanding) among people, community, organization, or groups (Wiener, E.D., Pedersen, J.O. and Weigend, A.S., 1995).

The barriers of KS are identified from the analysis on the past study and the problems that users face in the current e-learning. The barriers found are willingness to share, changing organization culture, social relationship, features is difficult to use, limited functions, the representation of features are not interesting, limited user access and knowledge evaluation.

The arising of new technology of social network with communication tools nowadays can facilitate many processes in e-learning. Social networks were found as the form of resource for collaborative knowledge management (Jones 2001). A person tends to share knowledge with his/her friends or unknowns person when they interact with others by using social network compared to when using e-learning. Social network can facilitated KS in two ways, which is by increasing knowledge reuse within users and by eliminating the reliance on formal liaison structures (both in terms of personnel and systems) between staffs (Yates and Paquette 2011). Based on the observation on the people activities at using social network, there relies a strong relationship between social network and KS. The purpose of this study is to find how the features of social network can be used in order to enhance KS in e-learning.

The motivation of this study is to provide the research on knowledge sharing problems that happens in e-learning which has cause the user to not leverage the system to the maximum level. The organization or university has invest a large amount of money and time to provide the e-learning system to the users, however the organization do not get the expected outcome from the system. The new phenomenon of social network in user's daily life and sharing activities that happens in that site has motivate the author to study and find the valuable factor that makes KS happens in social network sites.

This chapter will provide the overview of background of the problems and objectives of this project.

1.2 Background of the Problem

e-learning is widely applied to many universities in order to provide collaborative learning through a virtual space. e-learning also enable knowledge transfer processes based in leveraging knowledge held in different part of the organization or university. The issue arise is the involvement of people in the e-learning are not satisfying. e-learning is thought to be very useful as a learning package tools, however the exchange of knowledge of user through KS is less (Iris and Vikas 2011). This aspect has so far been in adequately addressed and poorly implemented.

One of the KS problems found in e-learning is the willingness of sharing. The reason user reluctance to share knowledge is information hoarding (Ardichvili 2008). Users are not willing to share their knowledge with others within the organization because they believe what they owned can give them advantage. They do not clearly understand the benefit that they will get if they share the knowledge they have with others.

Organizational culture is found crucial to policy mediation and the way that e-learning use is embedded in within the organization (Czerniewicz and Brown 2009). However, there is lack of organization framework to encourage students to learn and share knowledge (Liaw 2008). Until now, there are some lecturers who still do not use e-learning as the main medium of KS with their students. Besides, students also prefer to communicate with their friends by using other communication media like social network side or email. Next problem found in KS of e-learning is the social relationship. In the e-learning, besides the contents, social connection between users is also very important to enrich user's learning experience (Bitonto, Roselli et al. 2011; Wang 2011). The current e-learning used by students now however is lack of social elements.

Ease of use is one of the problems found as technology barriers in e-learning (Pituch and Lee 2006). This problem is related to the features provided in e-learning which is it difficult to use. User may resist using e-learning in sharing knowledge when they face difficulty in using the features provided. This also will impact the use outcomes. Ease of use also is found to be one of the critical success factor affecting learner's perceived satisfaction (Sun, Tsai et al. 2008). Thus, e-learning will not be practiced properly.

e-learning also has difficulties in letting users to determine knowledge to be captured and shared. Not all end-users of e-learning are allowed to decide the type of topic, content, medium and technology that they will use to share knowledge. For example in e-learning forum section, the students are not allowed to create topic for forum and discussions. Only lecturers can initiate the forum or discussion topic. So in that way, students will not have freedom in sharing their knowledge to others. Limited functions will reduce the occurrence of individual to transfer and control their knowledge (BenMoussa 2009). This results the knowledge overload and knowledge misplaced in the wrong section because user tend to share knowledge they have by using the medium that they could have access only. For example in e-learning, the features of sharing are limited which is only; forum post, message, blog, upload and download and email.

Moreover, system interfaces also may become one of the barriers of why people are not using e-learning. The interfaces are very important because it is the medium of how human interacts with computer system. (Tourangeau, Couper et al. 2003) in his paper also stated that social interface theory has influence within the human-computer interaction. The interfaces of the features can alter the character of user's interaction and affect the responses user give to the system. Besides, decision-making also would be affected by a human-like aid, which it reduced decision-making reaction time for users. For example in e-learning cases, although the interfaces are well arranged, however it is lack of humanized interaction. Humanized interfaces will provide users with more humanized features and emotional design. It also can increase the level of trust and user will probably spend more time on it and enjoy using the system.

The study also review that the interaction between different units within the organization is the primary resources of unification and KS (Lin 2008). The new knowledge created from sharing and collaboration can give competitive advantage to the organization. For instances, IT management researchers would focus on topics such as how IT can be applied in learning and transfer knowledge, while strategic management academics might focus on topics such as how the organization culture, system, core competitiveness and knowledge may be integrated and linked innovatively. But in e-learning there are less function that allows interaction between different course and faculty. There is limited user access to the specific features for KS in e-learning such as forum in course section only allow users from one section to take part in the discussion.

The last problem found in KS of e-learning is lack of knowledge evaluation tools. (Ozkan and Koseler 2009; Bhuasiri, Xaymoungkhoun et al. 2012) found that the knowledge quality is one of the user's reasons to use e-learning and it has a strong positive effects towards learner's satisfaction. Knowledge evaluation can be one of the ways to support the assessment of the knowledge quality in e-learning. In e-learning, there are two types of knowledge which is tacit knowledge and explicit knowledge. Tacit knowledge can be defined as the knowledge that embedded in human mind through personal knowledge and experience while explicit knowledge is that which is codified and digitized (Falconer 2006). The example of explicit knowledge is documents, book, reports, spread sheets and memos. In the current e-learning, the explicit knowledge is usually shared by using the published journal paper or conference paper. The explicit knowledge can be easily be evaluate, however there is a need of tools or features to assist the knowledge evaluation of tacit knowledge shared in e-learning.

Some user did not acknowledge the values of sharing that e-learning have and tend to share knowledge at the other sites like social network. Thus, this research will analyse the KS barriers in e-learning to find the reasons on why e-learning is not acknowledge widely. Social network are one of the key factor for KS. In building a sharing culture, enhancements of the networks that already exist need to be done. The networks among people are very important to enable KS, but social elements in

e-learning seem to be less effective. This is here we find the opportunity to integrate the social element from social network into e-learning in order to enhance KS. Moreover, social network sites provide interaction, collaboration, information sharing, active participation and critical thinking in educational context (Ajjan and Hatshorne, 2008; Selwyn, 2007).

1.3 Problem Statement

The main question addressed in this research is "How to enhance KS in e-learning by incorporating Social Network features?" Besides, there are also some another question arises, which are:

i. What are the barriers of Knowledge Sharing in e-learning?
ii. How the features of social network can be used to solve the Knowledge Sharing problems in e-learning?

1.4 Objectives

The objectives of this research are as follows:

i. To analyse the knowledge sharing problems in e-learning.
ii. To investigate social network features that can be used to enhance KS in e-learning.
iii. To propose enhancements of e-learning in terms of KS by incorporating social network features.
iv. To evaluate the proposed enhancements.

1.5 Scope of the Project

The research scope is focused on the statement below:

i. The research focused primarily on e-learning used in Universiti Teknologi Malaysia without specifically discussing the other various online learning websites.
ii. The research will examine the most popular social network, which is Facebook and Twitter.
iii. The research focuses on examining the social network features that can be used to enhance KS in e-learning.

1.6 The Project Importance

This research is expected to bring enhancements of KS to e-learning. The enhancements with the features of social network are proposed in order to enhance KS in e-learning.

1.7 Chapter Summary

In conclusion, this chapter summarize the brief overview of the research problem background, and from the problem statement identified, the goal of this project is finalize, which is to propose enhancements of e-learning by incorporating social network features in order to enhance KS.

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