

The Switching of Learning Management System: A Case Study on UUM Online Learning Acceptance

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ABSTRACT

Learning Management System (LMS) has been widely used in most of education institutions. In order to stay relevant, changes and improvement must be implemented from time to time. Thus, Universiti Utara Malaysia (UUM) has taken several actions for UUM's LMS to evolve and be competent. This paper begins with some introduction on LMS and the chronology of LMS in UUM. Then, this paper continues with the next section explaining the need of switching from the current LMS, Learningzone to UUM Online Learning. This paper further describes the research method undertaken in this study in section III, presents the results and findings in section IV and conclude the paper in the last section.

Keywords: Learning management system, technology acceptance model, case study.

I INTRODUCTION

Learning Management Systems (LMS) are intended to support teaching and learning activities. Though initially LMS focused on distant education which is rational since online studies is the only way to gain knowledge if you are geographically away from the learning environment. However, their usage may be extended to support face-to-face and blended delivery (Emelyanova & Voronina, 2014). LMS consist of various features that enable educators to share learning materials as well as a medium of interaction with their students both synchronously and asynchronously (Vovides et al., 2007). Thus, LMS have been proven to encourage a constructive approach to knowledge acquisition and support active learning (Emelyanova & Voronina, 2014).

LMS is developed for Universiti Utara Malaysia (UUM) lecturers and students as a complement to existing conventional teaching and learning methods. The development and implementation of LMS in UUM are under the responsibility of UUM Information Technology (UUMIT). UUM Online Learning is the 3rd LMS used by UUM to perform all teaching and learning activities through web applications. The first introduced LMS was the Learning Care which is a third party software that resulted in high maintenance costs. Therefore, it

was quickly replaced by inhouse developed LMS called Learningzone in July 2009. The transition time from Learning Care to Learningzone took approximately TWO (2) semesters from July 2009 until Januari 2010 before Learning Care was fully replaced.

Learningzone enabled teaching and learning materials to be uploaded and shared among students and other lecturers. It also provided the mechanism of interactive chats in forums, quizzes, surveys, assignments submissions and students grading. Then, UUM Online Learning was introduced to replace Learningzone on September 2014.

II SWITCHING FROM LEARNING ZONE TO UUM ONLINE LEARNING

A. Learning Management Systems (LMS)

LMS was introduced in the 1990's as the education industries adopting technology and moving away from the traditional way of teaching (Davis et al, 2009). LMS was purposely designed in regards to creating, distributing, and managing digital learning content and assessing those experience. Among the pioneer of LMS available were Blackboard and SABA then Moodle, an open source based LMS emerged. (Davis et al, 2009)

Being an open source based, Moodle was chosen by UUM for its second LMS since the first LMS was commercially purchased from third party vendor. Open source was appealing as it offers the concept of not having to pay for the expensive software license fees. Moodle can also be customized and uniquely adhered to UUM learning and teaching needs. UUM LMS, Learningzone was developed using Moodle version 1.9 to replace the previous commercialized third party LMS, Learning Care in 2009.

B. The Need to Switch

The switching from Learningzone to UUM Online Learning is inevitable due to the directives from the upper management. It is acknowledged that UUM is also an organization that operates in a rapidly changing business and technical environment. In order to excellent teaching and learning environment for their students, the management of UUM has requested for UUMIT to take necessary actions on the current UUM's LMS.

UUMIT started by assessing the existing Learningzone whether it was adequate to achieve the Malaysian government's education objectives. Since the existing LMS was not adequate, UUMIT must take the necessary actions to ensure the LMS was able to achieve the government's education objectives.

Various reasons contributes to the LMS switching decision, among them are some sections of the current system no longer meet the needs of the organization or some aspects of the organization's work are not covered by the current system and in most cases the current system can no longer evolve but needs to be replaced. Since Learningzone was developed using Moodle 1.9 version where this version was no longer supported by Moodle. There will be no new patches release for the 1.9 version thus make the support and assistance would be problematic. Figure 1 shows the snapshot of Learningzone.



Figure 1. Snapshot of Learningzone

The new LMS, UUM Online Learning was ready by the required date on September 2014 and replaced Learningzone. Most of the functions were similar to Learningzone however, there were some additional functionalities. Among the added functionalities were back-up and restore functions of previous semesters teaching and learning materials, integration with other UUM systems such as Echo360, Turnitin and MyBox, and upload functions for learning objects in accordance to SCORM/AICC standards. Refer to Figure 2 for a snapshot of the UUM Online Learning System main page.



Figure 2: Snapshot of the UUM Online Learning

C. Technology Acceptance Model (TAM)

TAM is a model that is most widely adopted and adapted, supported by a lot of empirical studies. TAM confirms Usefulness response factor (Perceived Usefulness, PU) and the Simple Response Use (Perceived ease of use, PEOU) is a major determinant of the use of an information technology. Figure 3 shows the TAM Model. TAM model believe that an individual's intention to use the system determine by two major factor PU and PEOU (Davis, 1989; Venkatesh & Davis, 2000).

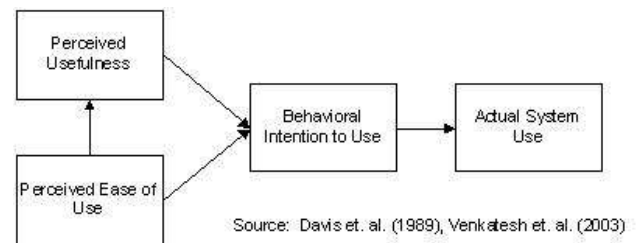


Figure 3: TAM Model

III RESEARCH METHOD

This study employed a case study to understand how the switching process of previous LMS to UUM Online Learning was carried out. The case study method is chosen in order to get a deep and broad understanding and insightful analysis (Yin, 2004). Case study provides researchers of an occasion to observe an environment that usually are not available for scientific investigation. When the research focusing on a particular foci in a real-life context, the case study method is appropriate (Yin, 2004).

The primary data collection was conducted using an in-depth interview session with the Head of Academic System unit of UUMIT who was responsible for the development UUM LMS and its implementation. The semi-structured interview was done face-to-face that lasted for more than 2 hours. The conversation was recorded alongside with the notes. The voice recorded were transcribed and analyzed.

Semi-structured interview is chosen because it is guided by an overall structure and directions yet allow more flexibility for the interviewer to include unstructured questioning (Hair et al., 2007). A semi-structured interview also allows the researcher to ask probe questions without being constrained by a set of standardized questions (Patton, 2002).

Secondly, a survey was then conducted focusing on the acceptance of the new UUM Online Learning using an adopted tools of Technology Acceptance Model (Davis, 1989).

Questionnaires were distributed to all stakeholders of UUM Online Learning System focusing on user's acceptance of UUM Online Learning. The purpose of the survey was to 1) get their point of view of the new system and 2) study factors affecting acceptance of UUM Online Learning among lecturers and students.

The questionnaire instruments contained five sections namely; the perceived usefulness of the system, the behavioral intention to use, the perceived usage complexity, the perceived ease of use and the reasons not to use the system. The sampling strategy for the lecturers were based on stratified sampling which include professors, associate professors, senior lecturers, lecturers and visiting lecturers categorized according to UUM colleges. The samples of students were determined by their year of study, the program they enrolled in (IT and non-IT students).

IV RESULTS AND DISCUSSION

A. In-Depth Interview Results

The results from the in-depth interview was to understand the process of LMS development including its implementation which involves the change process from the first LMS to UUM Online Learning.

The Head of Academic System unit of UUMIT have followed the usual system analysis and design steps for the development of UUM Online Learning. She and her team had put their full effort in finding a new solution for Learningzone and they needed to do it fast only in 8 months as the direction from the upper management put a strict deadline to launch by September 2014.

The main issue faced was for them on how to come out with a new solution in a situation where there were limited budget allocated for software upgrades in UUM. They decided to maintain with Moodle but for the time being, use the free version of the Moodle Open Source Software. This was at least until they can come out with a better and cost effective solution for another LMS. According to

the Head of Academic System unit of UUMIT, upgrading of the current version (version 1.9) to the latest free version of moodle, version 2.7 was inevitable. One reason for this was to keep abreast with advancements in technology so that they will not be left behind when there is no support for the older versions.

There were quite a lot of work to be done to migrate to the new LMS, this was due to the fact that the database structure of the new LMS was quite different from Learningzone. But somehow she and her team managed to fulfil the switching process on time and launched UUM Online Learning on September 2014.

B. Survey Results

i. Lecturers' responds.

28 lecturers responded to the questionnaire. Approximately 80% of the lectures had more than 2 years' experience of using LMS. The overall acceptance of the new LMS among the lecturers seemed positive. All lecturers that participated in the survey were currently using the new LMS and they had no complaints regarding the usefulness of the UUM Online Learning. For the questions that asked whether they will always try to use UUM Online Learning to do task, none of the lecturers gave a negative response.

Despite the positive responses regarding the perceived usefulness and behavioral intention on using the UUM Online Learning, when they were questioned on the user interface aspects of the system, the responses depicted a few variations. Figure 4 shows 3 pie charts of the lecturer's responses.

In Figure 4a, when asked about the system's perceived ease of use, some respondents perceived the system to be not user friendly when an average of 10% of the respondent answered negatively to questions on this issue

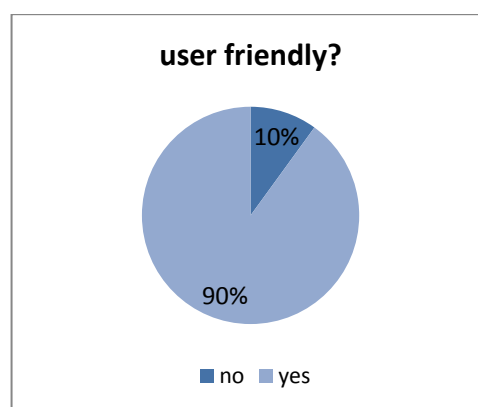


Figure 4a. Pie charts depicting lecturer's response on user friendliness

As shown in Figure 4b, 25% of the lectures expressed that the UUM Online Learning was taking too much of their time when performing many tasks and it was difficult to integrate the tasks into their existing work. In addition, it was vulnerable of computer breakdowns and loss of data.

Furthermore, in terms of training, as shown in Figure 4c. 21.4% of the lecturers expressed that they needed more training on how to use all the functionalities of UUM Online Learning. Whereas, regarding usage problems, they argued that the accessibility factors such as facilities and network performance were the main reason that hinders them from fully utilizing the new LMS especially when administering concurrent online tasks such as quizzes.

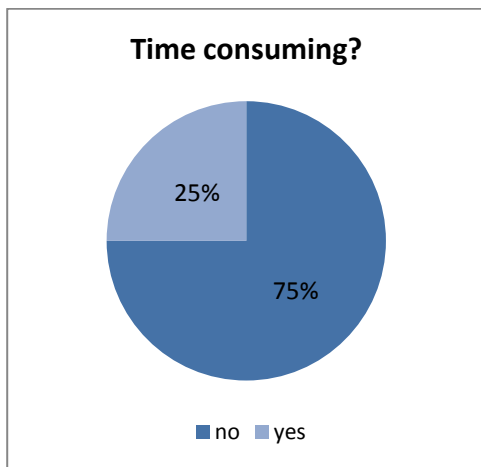


Figure 4b. Pie charts depicting lecturer’s response time consuming

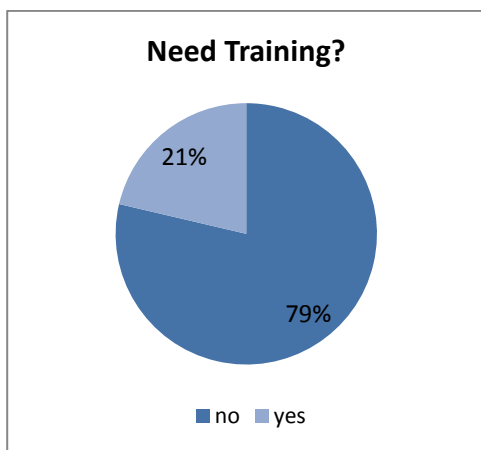


Figure 4c. Pie charts depicting lecturer’s response on the need of training

ii. Students’ Responds

251 students participated in the survey, they were from various programs offered in UUM with 24% of them were students who were enrolled in Information Technology program (IT students). The survey revealed differences of opinion among the IT students and the non-IT. Figure 5 shows the bar graph of the student’s opinion.

Regarding the perceived usefulness of the UUM Online Learning, there was no significant difference between the Non-IT and the IT students where approximately only 3.7% of the students responded negatively to the usefulness of the UUM Online Learning. However in terms of intention to use UUM Online Learning, 9% of the Non-IT students responded that they are reluctant to use the system. However for the questions on perceived ease of use, as can be seen in Figure 5a, only 3% of both IT and non IT students responded negatively as opposed to the lecturer’s responses.

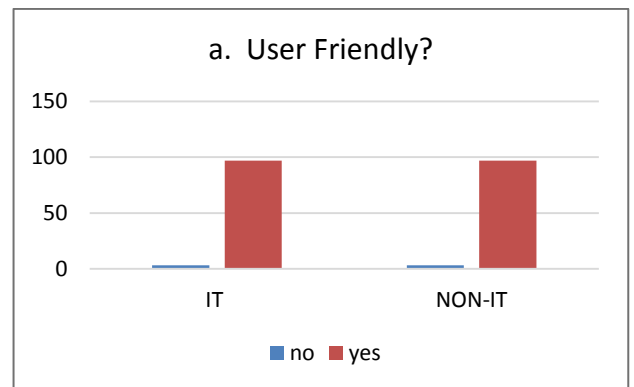


Figure 5a. Bar graphs depicting student’s opinion on user friendliness

In terms of perceived complexity of using UUM Online Learning there was a significant difference between IT and non IT students where their responds was 3% and 19% respectively as shown in Figure 5b.

This shows the IT student felt that the UUM Online Learning was taking too much of their time when performing many tasks, difficult to integrate the tasks into their existing work and it was vulnerable of computer breakdowns and loss of data. In terms of training (Figure 5c), 13% of the both IT and non IT students agreed that they need training on the functionalities of UUM Online Learning.

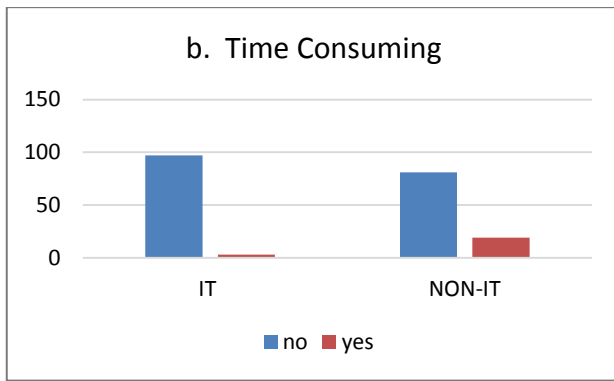


Figure 5b. Bar graphs depicting student's opinion on time consuming

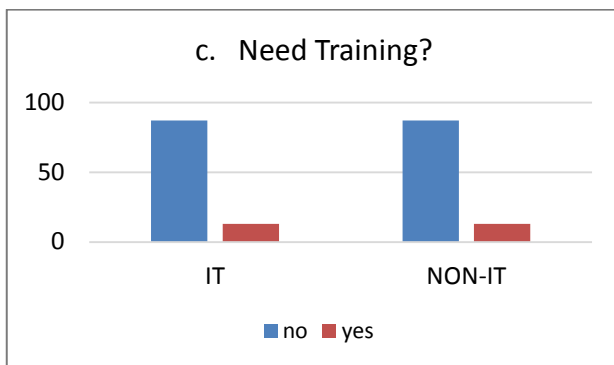


Figure 5c. Bar graphs depicting student's opinion on the need of training

V CONCLUSION

This paper presented a case study on the migration of the LMS used in Universiti Utara Malaysia. Even though the switch from Learningzone to UUM Online Learning went through various difficulties with user acceptance problems and complaints, the new UUM's LMS is currently fully operational and now used by all students and lecturers. The case explored various reasons for the migration and discussed the procedures performed during the development of the new LMS as well as the steps taken in the deployment of the new system in the organization. As such this case will be very beneficial to be used as a complementary teaching material for undergraduate and postgraduate level Computer Science or Information Technology courses such as System Analysis and Design, Software Engineering, Web Engineering, Human Computer Interaction, Requirement Engineering and Information System Development. This study also employed an acceptance test using TAM to

identify the factors affecting acceptance of UUM Online Learning among lecturers and students.

This case will help the instructors in delivering a real life case on a system development project. It will enable the students to study a case which is near to them since they themselves are active users of similar Learning Management Systems. Besides that, this case provides an opportunity for students to understand the process of requirement engineering by investigating the UUM Online Learning system adoption. Specifically, the learning outcome from the case study will let the students to; list the requirements; elaborate data finding techniques in the requirement analysis process; elaborate the problems in the requirement analysis phase; differentiate the types of requirements and describe the importance of good user interface design.

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