

Using Information Technology for Academic Management in Continuing Education

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Abstract

Lifelong learning is one of the core objectives in Malaysia's Higher Education Strategic Planning to increase students' participation in continuing higher education through a more flexible delivery. The key element in flexible delivery is the Information Technology which is a valuable tool for extending learning opportunities at all levels. The School of Professional and Continuing Education, Universiti Teknologi Malaysia (*UTMSPACE*), focuses on serving working adults who are interested in pursuing higher education in part-time mode at any of the 16 learning centres all over the country. This can only be accomplished by relying heavily on the use of Information Technology. *UTMSPACE*'s portal (<http://www.utmSPACE.utm.my>) is the main online gateway of *UTMSPACE*. It serves as an information portal to introduce *UTMSPACE*'s services. There are a total of 11 online systems to support the operation of *UTMSPACE*. This paper will present six of the systems which are solely for the use of *UTMSPACE*'s students. The Student Information System (SIS) is for the students to manage and get information on academic and finance. The Students' Web gives latest information on their academic activities. The e-Learning System enables the student to download additional notes of subjects taken in each semester. The Helpdesk System is a one-stop centre for customers' to give feedback on *UTMSPACE*'s service. The customers will receive response to their enquiries online. A finance system named Pay2Us is an online payment service gateway used to accept study fees payments from part-time students and registration payments for conferences' participants. The Lecturers' Portal enables them to upload the students' examination marks online and for them to get information on their students. The systems are reviewed and upgraded from time to time in order to give better services to the students and in doing so, indirectly increase the interest and participation rate in continuing education.

Keywords: continuing education; lifelong learning; academic management system

1. Introduction

Universiti Teknologi Malaysia (UTM), through its School of Professional and Continuing Education (*UTMSPACE*) offers part-time programs for working adults as part of UTM's exercise to offer higher education opportunities for adult learners.

To date, *UTMSPACE* offers 36 Part-Time Degree and Diploma programs at 16 learning centers across Malaysia. The school provides extensive choice of courses based on engineering, science, technology, information and business discipline. Highly qualified academic staff from the faculties in UTM teaches the adult learners on a part-time and weekend face-to-face mode rather than through virtual distant learning.

2. Background

UTMSPACE's main office is based in Skudai, Johor, while a branch office is located in Kuala Lumpur. Previously, there were two separate information

systems to fulfill the needs of both offices. There were no data connections between the offices and this resulted in data discrepancy between both offices. It was hard to determine data validity without referring to manual hardcopy record. It was time and cost consumed.

With more than 6000 students located all over the country and the two offices, *UTMSPACE* requires an integrated web-based application system to manage its extensive operation. In 2000, a Total intEgrated Academic Management System (TEAMS) was developed.

TEAMS offers two-way interaction between *UTMSPACE* and the students. Its data integration ability eases information access and storage. Figure 1 shows the web-based components in TEAMS.

3. THE SYSTEMS

TEAMS was developed to support information needs for *UTMSPACE*'s core business, which is the academic service management for Part-Time

undergraduate programs. TEAMS manages information for more than 7000 active customers at a time, 32 programs, almost 1000 subjects, 16 learning centers, 12 faculties and more than 320 lecturers and coordinators for each semester. A number of web-based systems are sub-portal of TEAMS. They are Student Information System (SIS), Student's Web, Lecturer's Portal and E-Learning. Apart from TEAMS, another two web-based supporting services systems are frequently accessed by the students. The systems are Helpdesk System and Pay2Us System.

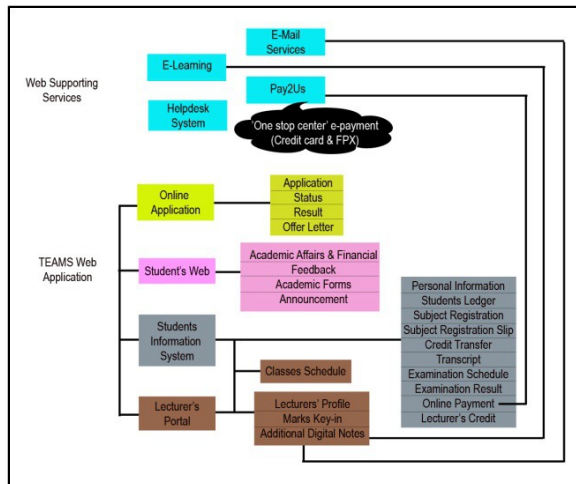
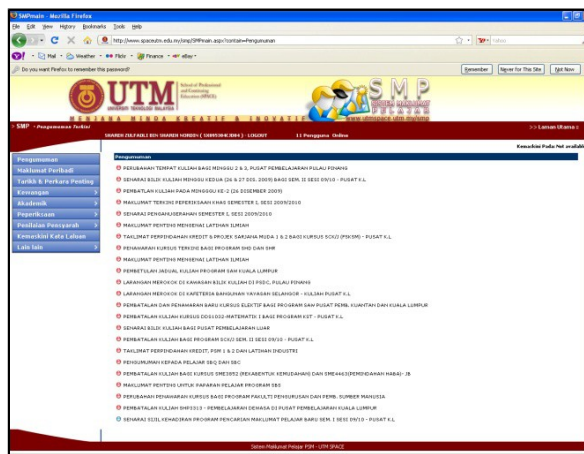


Fig 1. Web-based Components in TEAMS

3.1 STUDENT INFORMATION SYSTEM (SIS)

The Student Information System (SIS) was developed for *UTMSpace's* Part-Time undergraduate programs. It is a one-stop-center for students' academic and financial management. The students are able to manage and get information on academic and financial matters. Apart from that, it was also designed to help students in planning their academic schedule. Figure 2 shows the first page of



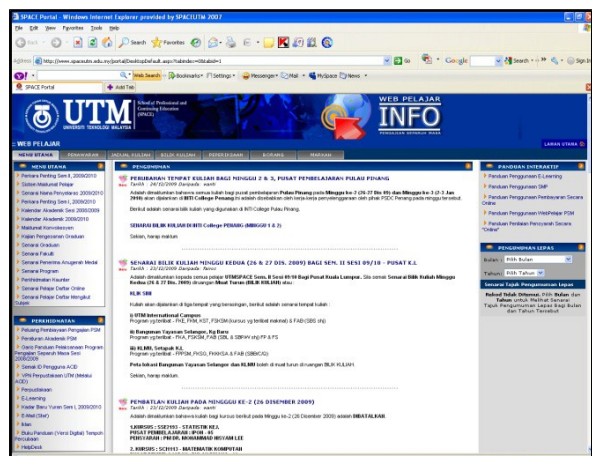
SIS after the student has log in.

Fig 2. Student Information System

The components in SIS comprise of Academic Schedule, Personal Information, Students' Account, Subject Registration, Online payment, Credit Transfer and others. Each student is given his own personal login and password. With SIS, students are able to access information easily. Financial data are encrypted, which means any online transactions are well protected.

3.2 STUDENT'S WEB

The Student's Web provides the latest news and information on students' academic activities. Students are able to view and download academic and financial matters, download academic forms and to transmit feedback on *UTMSpace's* services. They are also able to view a list of Frequently Asked

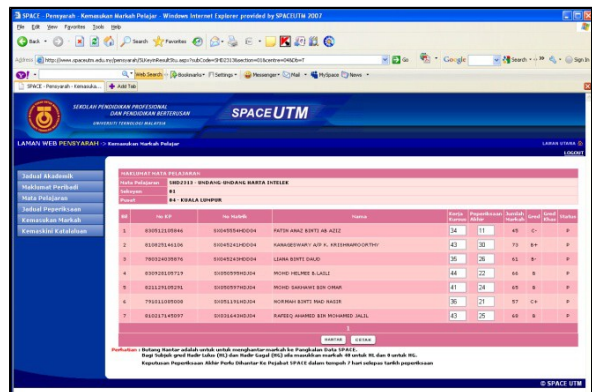


Questions regarding their course and program. Figure 3 shows the main page for Student's Web.

Fig 3. Student's Web

3.3 LECTURER'S PORTAL

Lecturer's portal stores the lecturers' profiles and enables them to access information on *UTMSpace's* students and view class schedule. The portal also



allows them to key-in examination marks online.

Figure 4 shows the page where lecturers are able to key in marks.

Fig 4. Lecturer's Portal

3.4 E-LEARNING

E-Learning is one of web services systems for the students. It enables the student to get additional lecture notes in digital form by subjects in each semester and participate in forum discussion. Figure 5 shows the summary of the subject SBC2263 in the E-learning system.

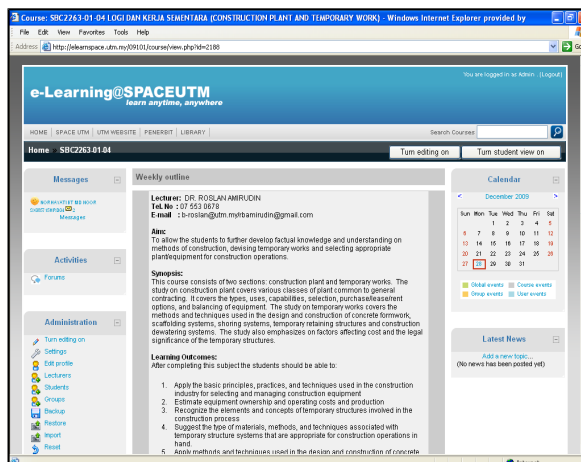


Fig 5. E-Learning Portal

3.5 HELPDESK SYSTEM

Helpdesk System is an interface where students are able to voice out their enquiries or complains regarding *UTMSPACE*'s services. A customer relation officer who handles the system will route all enquiries to the officer in-charge. Mostly the enquiries concern academic issues such as credit transfer, subject registration and examination marks. There is also a Frequently Asked Questions section for the students to view before enquiring. Prospective customers of *UTMSPACE* are also allowed to post questions and view FAQ. Figure 6 shows the response page of Helpdesk System where in this page student can view the response given to their query.

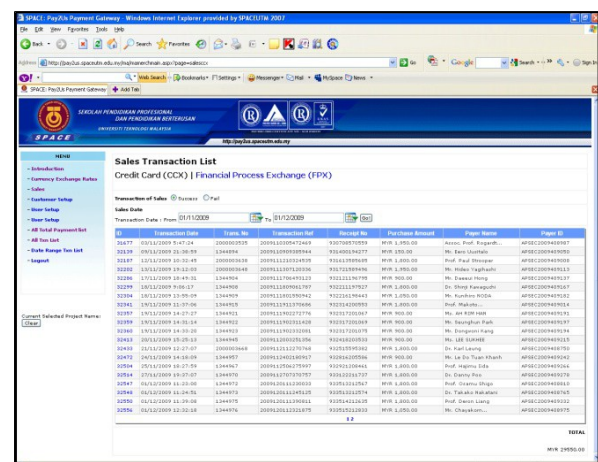


Fig 6. Helpdesk System

Any complains, suggestion and feedback, which are received online, or offline (letter, phone, fax, counter) are recorded into Helpdesk database. The information will be analyzed and used to increase system's performance. This is part of a continuous process, quality and production improvement.

3.6 PAY2US

Pay2Us Portal was developed as an online payment interface using Credit Card and Financial Process Exchange (FPX). It is a gateway service for Part-Time undergraduate students as well as for conference's and seminar's participants to pay their fees. Pay2Us was developed with external integration. They were MIGS (MasterCard Internet Gateway Service) which is based in Australia for Credit Card and FPX which is provided by MEPS (Malaysian Electronic Payment System) for internet banking. *UTMSPACE* was the first education entity



in Malaysia to provide such service to its customers. Figure 7 shows a screenshot of Sales Transaction List.

Fig 7. Pay2Us System

4. SUCCESS MEASUREMENT

The systems were developed by both *UTMSPACE*'s own IT team with collaboration with the Faculty of Computer Science and Information System, UTM. The development was done in a few phases. The systems' success is measured by two main factors: Customer and Finance

4.1 CUSTOMER

The systems are able to:

- Improve customer satisfaction;
- Increase market share;
- Increase brand awareness;
- Increase customer loyalty.

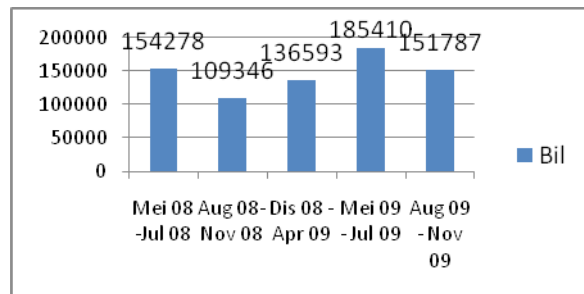


Fig 8. SIS logins statistic by the students.

Since April 2008 till November 2009, a total of 737,414 logins by *UTMSPACE* students were recorded. During that period, 122 logins or three times per week were done by each student. One of the systems' successes is in the course registration, which are done 100% online. This is truly convenient for the students who are working adults, with limited free time between their work and studies.

4.2 FINANCE

The systems are able to increase profitability by:

- Increasing productivity;
- Decreasing number of students' debt; and
- Decreasing operational cost.

For the first 4 intakes after the systems were implemented, *UTMSPACE* was able to reduce about RM 300,000 in operational cost by having application and subjects' registration online.

4.3 ORGANIZATION EFFECTIVENESS RESULT

The web-based application systems enables the gathering and updating of information being done directly at the source. This will increase data integrity received by *UTMSPACE*. Pay2Us put *UTMSPACE* as one of the pioneer organizations in E-Commerce.

CONCLUSION

In summary, the systems are able to fulfill *UTMSPACE*'s ICT vision in providing data visibility, accessibility and availability to the whole organization (Section/Unit in *UTMSPACE*, Faculty, Learning Centre, Smart-partner and Customer). Real-time information that is received online eases decision making process. Optimum utilization of technology is achieved by providing integrated solution and supporting application integration process and data sharing between applications. Continual increment of productivity, profit and service quality are achieved by reviewing and upgrading the systems from time to time in order to give better services to the customers and in doing so, indirectly increase the interest and participation rate in continuing education.

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