Learning Management System (LMS) and Learning Content Management System (LCMS) at Virtual University

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Abstract

Virtual universities with using of Learning Management System (LMS) and Learning Content Management System (LCMS) provide opportunities that manage learning, administration, tracking, and reporting functions. Virtual universities by apply the LMS and LCMS have a variety of applications that are available to manage course and learner administration, content, and key organizational information. At virtual university LMS can connects learners and content in a standardized manner. Also virtual universities by apply LCMS can create, store, reuse, manage and deliver digital learning content. LCMS allows learners and managers to manage the content related functions of training. LMS emphasizes on manage learners, manage instructor-led sessions, course catalogue, registration system, competency management, launch and track e-learning, searchable library of reusable content ,and integration with human resources applications. LCMS emphasizes on manage content, create content, assessment creation, evaluation, and feedback, locate and deliver specific content to a learner, and searchable library of reusable content. LMS and LCMS could each be an appropriate solution depending on the needs of virtual universities. By understanding the differences, the core functionalities of each, and the benefits of combining or keeping applications separate, designer can guide managers toward the best solution for issues at the virtual universities.

Key words: Virtual University; Learning Management System (LMS); Learning Content Management System (LCMS).

INTRODUCTION

Virtual university with applying the new strategy and approach in educational programs and in the process of teaching and learning can change some of traditional policies (Abdoli Sejzi, Aris, and Yahaya, 2012). Also Virtual universities with using of the Learning Management System (LMS) have unique capabilities that make it a better choice for students, lecturers, and managers. Also virtual universities with Learning Content Management System (LCMS) will be able to investigate contents, and tools. The learning Management System ,which is in charge of managing the education and especially the learners and teachers, the material and digital means they need, the planning and communication tools, and the follow up of the training. Learning content management system, which is in charge of managing the contents, and especially their specification, production, publication, maintenance and reuse. Learning management system (LMS) and learning content management system (LCMS) are basic concepts that warrant efficiency and effectively of virtual university (Abdoli Sejzi, 2013; Sobhaninezhad et al., 2006).

LEARNING MANAGEMENT SYSTEM (LMS)

Definition of Learning Management System (LMS)

Learning Management Systems (LMS) play a central role in the Web-based e-learning scenario. It connects learning contents and learners together in a standardized manner. It manages users, learning materials (in the form of objects in Content Management System) and learning events. It manages and administers learning progress and keep track on learning Performance. It manages and administers administrative tasks. LMS is a software system designed to facilitate administrative tasks as well as student participation in e-learning materials (Recesso, 2001)

Learning Management System and higher education

Higher education is working to integrate next-generation education technology into its learning activities and is struggling to find cost-effective approaches (Klonoski, 2008). Higher education is facing the perfect storm of higher enrolments, reduced state support, and technology-driven change. Technology is increasing not only in cost, but also in importance and ubiquity; in particular, technologies such as the LMS are no longer mere accessories to teaching and learning, but have become vital tools for the educational process. Once a technology becomes common in the classroom, it takes its place beside the lights and the heat as an essential infrastructure element and becomes a necessity or basic operating expense. The time is right for collaborative action because the time is wrong for any approach other than cost-sensitive, resource-smart deployments (Klonoski, 2008).Learning Management Systems have emerged from an auxiliary role to a critical one in higher education. Current college students are

technologically savvy and demand their faculty to use technology and Learning Management Systems (Ganjalizadeh and Molina, 2006).

Why learning management system (LMS)?

LMS extends the classroom and its activities online, thereby connecting students to each other and their instructors; empowering web-based sharing of research materials, library resources, and even textbooks; and integrating learning activities with administrative systems. Through LMS technology faculty members can now amplify their teaching with powerful online tools, and students can use these tools to increase their contact with teachers, fellow students, and information. By adopting such technology across various educational sectors, the state can thus prepare the next generation for a workplace that is growing more wired by the day (Klonoski, 2008). Higher education institutions, particularly those with budget constraints, are very attracted to open source LMS because of their cost savings and more control (Ganjalizadeh and Molina, 2006). Next-generation LMSs offer student information system integration, learning object repositories, branding, content sharing, and an improved user interface (Klonoski, 2008).

Higher education institutions and their faculty members must continue to investigate and experiment with new pedagogical approaches and the technologies to support them. Open source software movements are in tune with the collaborative nature and intellectual freedom characteristic of academic institutions worldwide. After all, learning management systems, particularly open-source ones, have a crucial role in closing the digital divide through education. At the same time, however, institutions must protect themselves with appropriate technical, legal, and organizational strategies against potential patent litigation (Ganjalizadeh and Molina, 2006). Learning management system (LMS) is a software application for the administration, documentation, tracking, and reporting of training programs, classroom and online events, e-learning programs, and training content (Ellis, 2009).

Recesso (2001) states that: "Learning Management Systems (LMS) play a central role in the Web-based e-learning scenario. It connects learning contents and learners together in a standardized manner. It manages users, learning materials (in the form of objects in Content Management System (CMS) and learning events. It manages and administers learning progress and keep track on learning performance. It manages and administers administrative tasks. LMS is a software system designed to facilitate administrative tasks as well as student participation in e-learning materials"(Recesso, 2001).Learning management system (LMS) is software designed and developed to track and manage computer-based training and education. Education is key to productivity and that means access to the right content and the right platform for the content. Essential to a learning management system are the goals of increasing knowledge, developing new skills and awareness, and improving productivity on the job.Ellis (2009) states, while there are several definitions of a learning management system (LMS), the basic description is a software application that automates the administration, tracking, and reporting of training events. However, it's not that simple. A robust LMS should be able to do the following:

• centralize and automate administration
• use self-service and self-guided services
• assemble and deliver learning content rapidly
• consolidate training initiatives on a scalable web-based platform
• support portability and standards
• personalize content and enable knowledge reuse (Ellis, 2009).

Learning Management System typically contains features for administration, assessment, course management, possibly content management and authoring (Commonwealth of learning, 2003). Hall (2003) defines an LMS as: "software that automates the administration of training events. All Learning Management Systems manage the log-in of registered users, manage course catalogs, record data from learners, and provide reports to management. A learning management system is defined as software that has been used in a learning content presentation which has a significant role and complexity in e-learning environment. An advanced e-learning system has to comply with the following requirements (Kis, 2007; Kritikou et al., 2008). In many organizations LMSs are being used to support and improve learning. According to Observatory on Borderless Higher Education (2002), some higher education institutions continue to develop in-house systems or buy into open source alternatives, but an ever-larger majority is purchasing licenses for proprietary platforms. In another study that supports the results of Observatory on Borderless Higher Education (Paulsen, 2003) shows that, many institutions find it quite easy to start with a commercial LMS, but they face many problems such as; linguistic, assessment tools, suitability to target groups and pricing. However, open source LMS may have an impact on the future of the LMS market with its cost effectiveness and advanced features. In this research we focus on Learning Management Systems that are more and more often used to construct online learning. LMS is a software system designed to facilitate administrative tasks as well as student participation in e-learning courses. This term describes a wide range of systems that organize and provides access to online education services for students, teachers, and administrators. These services usually include access control, provision of learning content, communication tools, and administration of user groups (Renaux et al., 2005).

LEARNING CONTENT MANAGEMENT SYSTEM (LCMS)
Definition of Learning Content Management System (LCMS)

Learning Content Management System (LCMS) represents a multi-user environment where learning developers can create, store, reuse, manage and deliver digital learning content from a central object repository (Tachi Jurubesco, 2008).

Effectiveness of learning content management system (LCMS) at virtual university

Institutions that have a large amount of learning content that they want to use in several courses and various formats may need a Learning Content Management System. Hall (2001) explains: A learning content management system is an environment where developers can create, store, reuse, manage and deliver learning content from a central object repository, usually a database. LCMS generally work with content that is based on a learning object model. These systems usually have good search capabilities, allowing developers to find quickly the text or media needed to build training content. Learning Content Management Systems often strive to achieve a separation of content, which is often tagged in XML, from presentation. This allows many LCMS to publish to a wide range of formats, platforms, or devices such as print, Web, and even Wireless Information Devices (WID) such as Palm and Windows CE handhelds, all from the same source material (Hall, 2001).

Learning content management systems (LCMS) allow online content to be stored, managed, and reused through integrated database functionality. The LCMS is a complex piece of software that labels learning objects then organizes and delivers them in infinite combinations (Jones, 2001). The core components of a LCMS are 1) an authoring tool suitable for non-programmers; 2) a dynamic delivery interface that delivers content; 3) an administrative component that manages learner records, launches courses, and tracks progress; 4) a learning object repository that is a central database that houses and manages content (Donello, 2002).

An alternative definition is provided by Leiserso (2003), LCMS (learning content management system): A software application that allows trainers and training directors to manage both the administrative and content related functions of training. An LCMS combines the course management capabilities of an LMS (learning management system) with the content creation and storage capabilities of a CMS (Content Management System) (Leiserson, 2003).

Features of Learning Management System and Learning Content Management System

Learning Content Management System emphasizes content management/ authoring and includes many features of an LMS (Commonwealth of learning,2003). LCMS is a system used to organize and facilitate collaborative content creation. Recently, the term has been associated almost entirely with programs for managing the content of web sites (Renaux, 2005) LCMS and LMS can be complementary and each solves a uniquely different challenge. In Table 1 we can see the features of learning management system and learning content management system. LMS focus on making learning available and tracking learners. LCMS focus on stored online content to be managed and reused through integrated database functionality. While there is some overlap in the functionality between a LMS and a LCMS, the two enterprise applications have a different focus: LMS make the process of scheduling classes, creating catalogs and registering learners more efficient. LCMS on the other hand, focus only on delivery. In the broadest terms, the LMS helps get you to the classroom door and the LCMS manages the experience inside the classroom (Jones, 2001).

Table 1: Features of LMS and LCMS adopted from Irlbeck and Mowat (2005)

Features	Functionality (R: Robust, L: Limited)	
	LMS	LCMS
Manage Learners	R	L
Manage Content		R
Create Content		R
Manages Instructor-led Sessions	R	
Course Catalogue	R	L
Registration System	R	L
Competency Management	R	L
Launch and Track eLearning	R	L
Assessment Creation, Evaluation, and Feedback	R	R
Searchable Library of Reusable Content		R
Collaboration / Synchronous Learning Tools	L	R
Integration with Human Resources Applications	R	
Locate and Deliver Specific Content to a Learner		R

LMS focus on making learning available and tracking learners. LCMS focus on stored online content to be managed and reused through integrated database functionality. While there is some overlap in the functionality between a LMS and a LCMS, the two enterprise applications have a different focus: LMS make the process of scheduling classes, creating catalogs and registering learners more efficient. LCMS on the other hand, focus only on delivery. In the broadest terms, the LMS helps get you to the classroom door and the LCMS manages the experience inside the classroom (Jones, 2001). LMS and LCMS could each be an appropriate solution depending on the needs of virtual universities. By clearly understanding the differences, the core functionalities of each, and the benefits of combining or keeping applications separate, training and education professionals can help guide decision makers toward the best solution for the virtual universities.

CONCLUSION

Virtual universities should consider Learning management system (LMS) and learning content management system (LCMS) as a complement to the formal educational system to increase the quality in online learning. LMS and LCMS support the students, lecturers, managers, content, and service in unique situation at virtual university. Both the teachers and the students need different kinds of support services to cope with virtual education. Learning Management Systems (LMS) and Learning Content Management Systems (LCMS) enterprise applications are often found to be competing for the same organization resources. The reality is that each application has very specific strengths and abilities that may complement each other. Virtual universities need to identify their needs and then carefully consider the functionality of LMS and LCMS before making the investment. With application LMS and LCMS at virtual universities, managers can develop new strategies for what they consider to be a new way of online learning. In general, the virtual universities can meet its eLearning management requirements with an LMS which will also provide robust classroom and learner management functionality. An organization interested in moving to a learning object approach or one also interested in capturing intellectual capital through knowledge management should consider an LCMS which will provide the required content management and, storage capabilities.

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