

CMS, LMS and LCMS For eLearning

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Abstract

Now a day's most of the educational centre (universities, institutes, colleges and schools) are using some eLearning tools as an integral part of their learning systems; to enhance their traditional learning systems or to use an alternative approach for virtual learning environment. These tools may base on content management or learning content management. Recently a composition of Learning Management System (LMS) and Content Management System (CMS) is used in eLearning. This paper helps you to understand the basic functionality of LMS, CMS and LCMS and how these are helpful in eLearning. In this we have proposed the integration of LMS and CMS. This paper gives the architecture of this hybrid model known as known as LCMS (Learning Content Management system).

Keywords: Learning Management System (LMS), Content Management System (CMS), Learning Content Management System (LCMS).LOM standard.

1. Introduction

There are several challenges in supporting students' learning activities in e-learning systems. The advent of internet and its phenomenal growth, has given the sphere of learning several sophisticated automated tools for learning and sharing knowledge. As there are constantly change in collection of course materials composed by author or instructor and course material also commented and edited by student too. So the collection of course materials in eLearning should be flexible and adaptable in content representation. For the purpose of content management of learning resources and management of rights of learner and author, there are various tools available.

E-Learning

The term "e-learning" was defined in alignment with a definition by Rosenberg [4]. According to

Rosenberg, the first and most important feature of e-learning is that it takes place in a networked environment. This means that computer of the learner is in constant communication with a central server. Also e-learning materials are accessible via an Internet browser on a personal computer.

The growth of e-learning has also affected the way people learn and communicate in a learning environment, be it a traditional academic institution or in a corporate training setup.

This as a consequence has created a major change in the way educational materials are designed, developed, and delivered to those who wish to learn in a typical learning environment, there are several groups of people involved: authors and learners, which are the main players, and administrators and trainers [3]. Authors may be teachers or instructional/learning content designers who create e-learning content by using an authoring system.

People often get confused regarding the actual functions of a CMS and an LMS. The source of this confusion lies in the similarities of the two systems. Both perform the functions of enrolling learners, communicating with them, assessing performances, and activating learning materials. In this paper we will discuss in detail the content management, learning management and learning content management system in eLearning system.

The paper is organised as below: The second section describes the extensive literature survey required for the implementation of the systems. The third section explains our proposed model known as LCMS

2. Literature survey

2.1 Content Management Systems

When we first heard about content management, it seems as a simple web application, but in reality it more than that.

CMS or a Content Management System is basically designed to support educative or academic courses. It allows the instructor to create a course website, where documents can be uploaded in popular formats such as word, power point, etc. Without having to convert them to a web format such as HTML. This requires few specialized skills, thus making a CMS the ubiquitous choice of instructors. It also efficiently supports distance learning because of its robust discussion board application. Instructors post the essence of the course that leads students through varied learning activities, after which the instructors supervise course discussions through the discussion board.

“A Content Management System is a collection of procedures used to describe processes in an environment that requires collaboration between different actors”.

These procedures are designed to manage:

- Data access, based on user roles;
- Collecting and sharing information;

- Data storage assistance;
- Content redundancy check;
- Reporting.

In a CMS, data is a term representing among others documents, movies, pictures, phone numbers or scientific information. Several CMS categories are determined depending on the content: Web content such as HTML code, digital libraries, multimedia files. There are several researchers have given the different ideas about the use of CMS as Elearning. In paper [5] the extension of CMS as component based system of Elearning was given. In [6] the composition of course material based on ontology is discussed. Like these there are several scenario in which we can use CMS of Elearning .

Content management has been traditionally related to content producers such as publishers, portals, news agencies, newspapers, and so on. Web-based content management systems (CMS) support all the phases of content management, from creation to delivery (Boiko 2001). In fact, many educational institutions such as universities are nowadays also the

publishers of their own contents, mainly generated by their teachers. These contents are mainly textbooks, but also research papers in academic journals or formal project deliverables such as technical reports (i.e., gray literature). Nevertheless, there are many other contents that are not managed and maintained by the educational institution but by the teachers themselves, such as exercises, resources used in the classroom, or teaching notes.

In consequence, the concept of content in educational institutions has not been a simple one by only definition; it depends on the context and the learning goals that must be achieved. Therefore, using CMS in educational institutions needs to face new requirements caused by two main factors: first, content granularity and typologies are very diverse, and second, content should be created and shared with

reusability in mind. Reusability has been hypothesized to create economies of scale and to be a major factor in the universal accessibility of high-quality educational resources, which are in general expensive to produce (Downes 2001).

2.2. Learning Management Systems

While teachers can continue to be highly effective with the traditional lecture-style instructional method, a new technological resource, that of web-based learning management systems (LMS), is spreading out. Research results demonstrate that, although innovation may build upon the technical prospects, concrete difficulties arise, caused by problems of incongruity at the level of the educational model (Griffiths, 2005; Laurillard, 2002; Jonassen et al., 1998). Typical learning management systems (LMS) integrate most common e-learning functions in a single application. An LMS is an integrated set of software/programs that automate the administration, tracking and reporting of online courses/programmes. It provides a centralised organisational approach to learning for scheduling of courses and registration of learners, and assessment of their learning outcomes.

Functions of LMS are:

- Centralise 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
- Personalise content and enable Knowledge reuse.

LMS were created for tracking registration, attendance class lists, grades, test results, class scheduling, other administrative requirements of schools and instructor-led classes. An LMS helps in running a learning organisation. It does not help create or deploy content. It does not track students through a particular course. It does not enable Tutors to communicate with the students.

Both free LMSs and commercial LMSs exist. The most used ones are the free ones since this not implies that they have an inferior quality. In addition, they are more complete than the commercial ones.

Nevertheless, some institutions prefer commercial ones since they are configured and supervised by the company. Among free LMSs : Claroline, Dokeos, Moodle are mostly used. Among commercial LMSs we can find: WebCT and Blackboard .

When transforming a course that has been delivered for years in a traditional in-class way into an e-learning enhanced one, some decisions have to be taken and some actions must be performed. These decisions and actions should be grounded on a careful analysis of the current situation in educational practice, in order to serve as the starting point towards the development of a successful redesign process, by means of more innovative approaches. For example, a first step would be to study thoroughly the tools provided by the chosen LMS and to see how those tools could be used to support educational methodology and the learning objectives that are used currently. After that, new e-learning activities can be designed, for enhancing learning. Finally, the two tasks would merge, leading to the creation of a new well designed learning scenario, from then on followed consistently.

3. Proposed Model

E-Learning model based on CMS and LMS

In the proposed architecture, we are integrating the functionality of LMS and CMS. We will show the function model of LCMS (LMS+CMS) for the eLearning. "A LCMS is an environment where developers can create, store, reuse, manage and deliver learning content from a central object repository, usually a database. LCMSs generally work

with content that is based on a learning object model" [6]. The in-house development of these systems is not typical approach in building environment for using information and communication technologies for the support of the educational process. But on the other hand, there are some institutions which have selected in-house way and have accomplished its applicability.

In the above figure, the author and instructor can create the learning content with the authoring and indexing tool. This tool is also helpful for searching the learning object. The learning object will follow the LOM standard. Learning object is stored in the central content repository. LMS can access the CMS and retrieve the learning content. Administrator will maintain the registration and rights of user (student, guest and learner) .

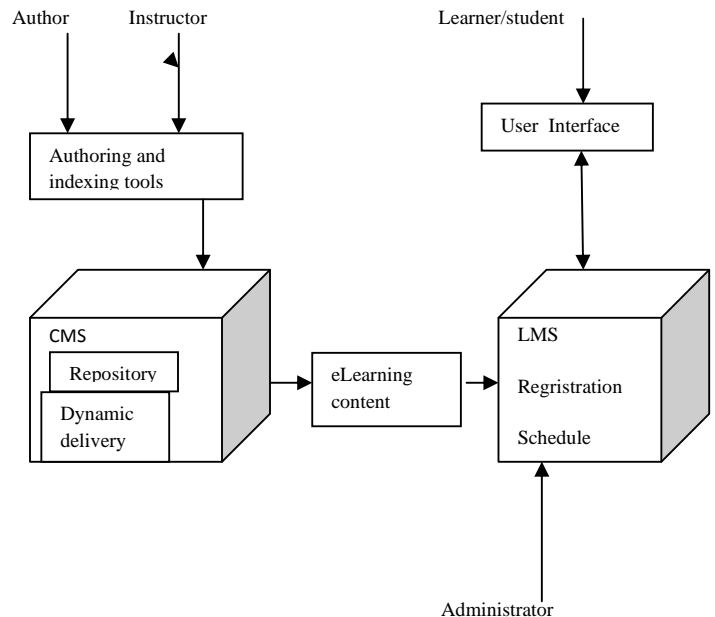


Fig.1 Integration of CMS and LMS

Conclusion

LCMSs are structured environments that are specifically designed to help organizations implement

better processes and practices as they create an unlimited number of e-learning courses. LCMS uses the strength of CMS with the integration of LMS. In this discussion we already see that LCMS itself as complete eLearning system with content creation and management. They make creating content more efficient, help users avoid redundancy, and help organizations manage the people – professional developers, subject matter experts, or novices – who are creating the content. There are various LCMS in the market that are commercially available. If you've decided that an LCMS is what your organization needs, you should be applauded for understanding the power and flexibility that an LCMS can provide, but you should also be sure you can develop a LCMS in your organization according to your need.

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