Learning Management Systems

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INTRODUCTION

Formal university-based distance education has been around for over 100 years. For example, Cornell University established the Correspondence University in 1882, and Chautauqua College of Liberal Arts in New York was awarding degrees via correspondence courses in 1883 (Nasseh, 1997). Soon many other educational institutions, including the University of Chicago, Penn State University, Yale University, and John Hopkins University, were offering these nontraditional learning options for their students. Many institutions then moved to instructional telecommunications as the technology matured. With the entry of the personal computer into homes and workplaces in the 1980s, learning started to become more technology driven. But it was not until the 1990s, with the proliferation of the World Wide Web, that the concept of technology-enhanced education began to change drastically.

E-learning has become the most recent trend in technology-enhanced education. Students can access their learning materials through the Internet using an Internet service provider (ISP). Learning programs and materials are hosted and available online, allowing students to learn, interact, and even earn degrees in the comfort of their own homes. Learning materials are being made available electronically not only by educational institutions, but by employers, businesses, and individuals. But, e-learning is not just for distance education. Just-in-time access (or anytime access) to learning materials for both formal and informal learning is transforming the training and educational fields. Anyone with Web space can now make learning materials available to a global audience.

THE ADVENT OF THE LEARNING-MANAGEMENT SYSTEM

With the ability to host learning materials over the Internet comes the challenge of maintaining and administering the instruction. Consequently, there is a whole new market for software designed to aid organizations in managing their e-learning initiatives. These software programs are commonly referred to as learning-management systems (LMSs). A learning-management system is a Web-based software solution to simplify the administration of learning programs. It tracks learner progress through a learning program, provides a forum for collaboration, centralizes program information and scheduling, provides a forum for synchronous and asynchronous courseware, and enables the assessment of learning effectiveness (Sun Microsystems, Inc., 2001).

WHAT IS DRIVING THE USAGE OF LMSs?

Knowledge is now being recognized as a source of competitive advantage, resulting in a shift from viewing learning as an administrative task to one of strategic significance. Thus, in addition to the obvious need to organize, coordinate, and administer learning effectively, there are other forces driving the increased use of LMSs. Cost savings is the leading reason that corporate America invests in learning-management systems (Dobbs, 2002). Companies are finding that they have to manage their learning not only across geographic distance, but across cultures and practices. Companies also want their skill sets consistent across their operations. Labor shortages, limited resources, and corporate responsibility are all increasing the need to manage learning (Hall, 2003).

In educational settings, the forces are equally compelling. Universities are seeing distance education as a way to decrease costs, decrease the need for classrooms, increase access to education, and increase their student population. Faculty members are being told they must have online content, driving a need to make the process easier and less time intensive. In addition, instructors have found that the

use of course-management systems actually improves their teaching (Ehrman & Gilbert, 2003).

A 2002 survey by *Training Magazine* found that the top drivers for an organization in a corporate environment to use an LMS are to report learning activities and register employees for coursework (Barbian, 2002). BCE NExxia wanted a system able to track employee productivity, report learning activities, migrate current coursework online and to handheld services, advise learning paths for individuals, reduce administrative costs, and function as a single point of entry for all training services. Cingular's goals for implementing an LMS were to establish a consistent curriculum, offer anytime access to learning, and reduce travel (McMaster, 2002).

WHAT IS AN LMS?

In a review of the literature, it is apparent that there is no consistent definition of a learning-management system. This is most likely because no two learning-management systems are the same. Some organizations develop their own learning-management systems and software to address their own unique needs. Others buy off-the-shelf solutions available from a growing number of software vendors. Most organizations use a combination of the two alternatives. The term learning-management system embraces just about any use of Web technology to plan, organize, implement, and control aspects of the learning process (FastTrak Consulting, Inc., 2000). Nichani (2001) claims that the objective of an LMS is to simplify the administration of learning and training programs within an organization. An LMS can also be known as a course-management system, training-management system, a training-administration system, or an integrated learning system (Barron, 2000). Greenberg (2002) seems to give the most comprehensive description of an LMS: a high-level, strategic solution for planning, delivering, and managing all learning events within an organization, including online, virtual classroom, and instructor-led courses. An LMS provides the platform for the organization's online learning environment by enabling the management, delivery, and tracking of blended learning for employees, stakeholders, and customers. Ultimately, the experts agree that an

LMS is the most expensive tool in an e-learning initiative (Dobbs, 2003).

CONFUSING THE ISSUE

Confusing the issue are other types of learning-management-related software that are beginning to appear on the market. These include the content-management system (CMS) and the learning-content-management system (LCMS). A CMS is commonly used in online publishing. Its objective is to simplify the creation and management of online content (Nichani, 2001). This content may include articles, reports, pictures, ad banners, and more. The reach of an LCMS is more extensive. An LCMS is a system (primarily Web-based) that is used to author, approve, publish, and manage learning content or learning objects. It combines the administrative and management dimensions of a traditional LMS with the content creation and personalized assembly dimensions of a CMS (Nichani). Traditionally, an LMS provided management of learning performance, learning requirements, learning programs, and planning, and an LCMS provided management of learning content (Greenberg, 2002). Confusing the issue further are ongoing projects focusing on broader uses of LMS technologies. For example, many learning-management systems support the creation of simulated classrooms by creating virtual learning environments (VLEs). VLEs promote collaboration by providing the "space" and tools that support online communication and teamwork, where collaboration may be limited by specific start and end dates of access once a course ends. On the other hand, virtual learning communities (VLCs) are ongoing and do not suffer the course-based limitations of VLEs (Cooper, 2003). VLCs are online environments that support and maintain ongoing collaboration and professional growth and development.

As more and more products appear on the market, the need to manage learning as well as the learning-management systems is becoming more apparent. It is rare to find an organization that employs only one piece of software to comprise their entire LMS. Many are choosing hybrid models where they buy several software programs that meet their specific needs, then build their own integration pro-

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