

Chapter 56

Learning Management Systems in a Changing Environment

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ABSTRACT

Learning Management Systems (LMS) have evolved from simple delivery and management systems to key pieces of modern organizational learning and performance improvement capabilities. In a changing and globally competitive world, a LMS can allow for improved access and tracking of learning activities as well as support organizational growth and development. The next generation of LMS will need to be open, personal, social, flexible, support learning analytics, and properly support the move to mobile computing. This new generation of LMS must be able to meet the need of the changing environments of business and education to allow these institutions to reach their potential. The chapter provides a description of the past, present, and future of learning management systems in a changing environment.

INTRODUCTION

The increasingly competitive global marketplace for jobs and education has led to increased requirement for education and ongoing training in order for individuals and organizations to remain competitive. Educational institutions are adopting online learning and information systems at a rapid pace, with 65% of higher education institutions identifying online learning as a critical part of their long term strategy (Allen & Seaman, 2011). Beyond online learning, many institutions (including primary and secondary education, higher

education, continuing education, and professional industry training programs) have made use of learning management systems (LMS) to improve the operation of teaching and learning. In the 2012 Campus Computing Survey (Green, 2012), 93% of higher education institutions reported using an LMS, whereas in 2000 only approximately 15% of institutions reported having any course management tool in their online course offerings.

Traditionally, Learning Management Systems (LMS) have been designed to deliver, manage, track, and assess learning activities in a formal learning environment. With new forms of com-

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munication and content sharing as well as social networking services (both open and closed), a new generation of systems is emerging to facilitate teaching and learning. These new systems are called on to support new teaching and learning environments and emerging social trends as well as to impact the traditional administration and business models.

This chapter provides an overview of learning management systems and its development in the changing environment. In order to frame the current state of the LMS, we will provide a brief overview of LMS, followed by a discussion of the trends in education and training environment. A current state of LMS technology as well as a vision for the key features of future LMS implementations will be presented against the context of the changing needs of society.

BACKGROUND

A LMS is a centralized Web based information systems where the learning content is managed and learning activities are organized. LMS represents a more general term for a technology framework that supports all aspects of formal and informal learning processes (Watson & Watson, 2007), including learning management, content management, course management, etc. The contexts in which LMSs are deployed include higher education institutions, primary and secondary education school systems, corporations, as well as military. While the goals and assessment processes of the various industries and organizations vary widely, there is quite a bit of commonality regarding the needs associated with the management of learning activities. A robust LMS integrates with other applications to meet business goals as well as “enabling management to measure the impact, effectiveness, and overall costs of training initiatives” (Ellis, 2009). LMSs have the following

major goals, with top three most valuable features of assessment and testing, content management, and reporting are (Ellis, 2009):

- 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.

The history of LMS began in the 1960s when the PLATO learning system was created at the University of Illinois at Urbana-Champaign, and the TICCIT System (MITRE Corporation) provided early examples of computer based instruction. As computer based instruction moved from individual lessons to collections of lessons, the need for management of the delivery of lessons became necessary. Course management systems (CMS) and integrated learning systems (ILS) were developed to manage access and to provide reporting capabilities for student lessons. Features such as student tracking, measuring student capabilities using pre-test and post-test techniques, and reporting features were advertised as part of learning solutions. By 2011 the major market leaders for Learning Management Systems were Blackboard, Desire2Learn, Moodle, Sakai and Pearson (Hill, 2012). Massive Online Open Course platforms were developed to support the high volumes associated with MOOCs such as those offered through Coursera, Udacity, MITx, CourseSites, OpenClass, einztein.com, OpenLearning, CodeAcademy, Edmodo, EDU2.0.org, etc.

The modern Learning Management Systems were developed during the rapid growth of the Web, and have been key to the ability of education institutions that offer online learning. The collec-

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