# Chapter 3
# Diplek:
## An Open LMS that Supports Fast Composition of Educational Services

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## ABSTRACT

*Modern ICT has evolved through the years and is now in position of delivering educational content to specific target groups in remote locations. Advanced e-learning techniques are now used not only for delivering content to high school and university students, but can be used in lifelong training programs. Due to the target group most of these programs have (i.e. professionals with little time to spend, people of a certain age with reduced ICT skills, etc.), it is vital that organizations choose wisely among the many Learning Management Systems currently available. The purpose of this chapter is to describe and examine the features of such a platform. DIPLEK is a platform developed using service oriented architecture to enable easy access to educational content and activities for novice learners and instructors.*

## INTRODUCTION

A Virtual Learning Environment or Learning Management System (VLE or LMS) is a software system or integrated platform that contains a series of services and tools to support a number of activities and course management procedures (Ho, Higson, Dey & Xu, 2009). Nowadays numerous LMS are available in the market; a few more, like Moodle, Sakai, Atutor, Claroline, etc., are under development by the open source community. Another category of Learning Systems is the so called Learning Design systems (Britain, 2004). This category includes systems like LAMS (Dalziel, 2003) and Coppercore (Vogten et al., 2007). Despite the many tools and services offered by the

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LMS, a number of limitations and disadvantages were reported from users and researchers:

1. The platform complexity and difficulty of use require the continuous IT support and hence require a high investment for instructors and training of supported learners (Mendling, Neumann, Pinterits & Simon, 2005).Due to this complexity these systems cannot be easily used by people involved in lifelong learning and training programs.
2. Low level of reusability and portability of learning content due to the non-standardized way that the educational material is stored (O'Droma, Ganchev & McDonnell, 2003; Avgeriou, Koutoumanos, Retalis, & Papaspyrou, 2000)
3. Limited number of available tools and services for proper monitoring of the learners' activities throughout the course duration. (Mazza & Dimitrova, 2007)
4. The dependence on web technologies most of the platforms have, obstruct the deployment of distance learning services to internet-less communities and institutions.
5. Most currently available platforms emphasize on technology that facilitates interaction among learners and instructors and neglect personalization of the learning environment (Cheung, Hui, Zhang &Yiu, 2003)

The purpose of this chapter is to describe the design and development of Diplek an open-source educational platform that uses to support the needs of instructors with reduced IT competence throughout the main phases of course management lifecycle. There is a plethora of LMS out in the market that can be used. Diplek is not trying to compete with existing LMSs. More likely Diplek is intended to be used in smaller educational domains where computer experts are hard to find and the need for an easy to use LMS is prominent. Most LMS simplify only the services that relate to the content management process; nevertheless, instructors have additional needs, such as, to monitor a learners' progress with means that can be easily handled by a typical non IT specialist instructor and to communicate with learners in real time. Diplek offers a special tool for monitoring purposes, which records a learner's activities through a session in video format; this recording can be interpreted at a later time by the instructor to extract conclusions about the learners' progress and the course's contribution in achieving its purpose. Moreover, the system can be operated without an internet connection or a web browser. This flexibility comes in handy in situations where the equipment is old and the connection between workstations is limited to a LAN.

The remainder of this chapter is organized as follows: In the following sections user requirements for LMS are presented, together with currently available solutions. Then, a detailed presentation of Diplek educational platform and its services, tools and features is provided. Finally, the chapter presents future research directions and conclusions.

## USER REQUIREMENTS AND EXPECTATIONS

Over the past fifteen years LMSs have been embraced by as a technology of significance for creating new revenue streams, reaching new markets, connecting with students in new ways, and/or teaching more efficiently.

At a recent research study done in UK, 90% of schools use LMS or even have more than one LMS in the institution (Baziukaitė, Vaira & Idzelytė, 2008).The reason for this wide acceptance and usage of LMSs is the many advantages that they bring:

- Users can manage and track their own learning
- Personalization of learning
- Access to worldwide learning material