Chapter 11
The Technological Advancement of LMS Systems and E-Content Software

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ABSTRACT
This chapter will present the practical aspects of Learning Management Systems adoption by describing this process from the perspective of evolution, observed for LMS and e-content software at West Pomeranian Business School. The chapter will address issues and found solutions relating to LMS deployment and evolution, noticed during the management of e-learning studies. In its first part, chapter will explain the requirements for different types of studies and how they influenced the shape of LMS systems. In the following sections, the chapter will analyze different technologies and software used in the e-learning process. This analysis will also describe how efficiently use the functionality of e-learning software in relation to the users’ requirements. The last part of chapter will present SPE - SDART Presentation Engine, being an innovative e-learning presentation engine, developed in form of Rich Internet Application, to overcome the limitations observed for the previously used presentation engines.

INTRODUCTION
The use of e-learning in higher education in Poland is regulated by a set of legal acts. The most important one among them is the order concerning conditions which should be fulfilled to make conduction of the classes that use the distance-learning methods and techniques possible. Every school that offers this kind of studies must have at its disposal a well-trained teaching staff prepared to conduct classes by the means of blended-learning. Moreover, school must assure:
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- An access to IT systems and the software which enables the synchronous and asynchronous interaction between students and e-tutors.
- Didactic materials prepared in an electronic version.
- The possibility of personal consultations with e-tutor at school.
- The regular verification of students’ progress, knowledge and skills, including conducting examinations at the end of each course at school.
- The regular verification of tutors’ activity.
- The trainings for students on the e-learning platform.

The above-mentioned list neither impose on schools what kind of software they have to use, nor it limits the form of IT systems usage (for example: the purchase of the license, the lease, etc.). The number of classes conducted with the usage of distance-learning methods and techniques is limited to 60% of the entire amount of classes planned for each specialization and level of education, which is defined by core curriculum, excluding the practical and laboratory classes. As far as the postgraduate studies and trainings are concerned, there are not any special legal regulations – it is possible to use e-learning methods without limits.

The main idea of this chapter is to present the process of evolution for LMS using an example of West Pomeranian Business School. The chapter will explain the requirements for different types of studies and how they influenced the Learning Management Systems. The next part of chapter will include information about different technologies and software that were and are currently used in the e-learning process. The last part of chapter will introduce SPE (SDART Presentation Engine) being an innovative e-learning presentation engine developed as an Rich Internet Application by SDART Ltd and this software was designed to overcome the problems observed for the previously used presentation engines. In each section we will discuss relevant issues and results of observations that shaped the process of LMS evolution. Hence, the chapter delivers information meaningful for the practice of e-learning management.

EXPERIENCE

The West Pomeranian Business School is one of the first universities in Poland, which uses methods and techniques of distance learning. Chronologically, e-learning experience in West Pomeranian Business School (ZPSB as a University official abbreviation) were as follows:

- In 2006 started first blended-learning study, the first LMS was Oracle iLearning™.
- In 2007 LMS was changed from Oracle iLearning to Moodle.
- In 2008 started own production of e-learning content and e-books.
- In 2009 started e-learning postgraduate studies and e-learning business courses.
- In 2010 started e-tutoring in science courses (for example: mathematics, statistics, econometrics).

The future plans include introduction of virtual practice. Currently, ZPSB is offering three main products using the technology of e-learning. These products are presented in Figure 1.

ZPSB e-students may achieve Bachelor degree and Master degree. During their studies they receive help in form of e-Tutoring associated with their courses. After a Bachelor degree or Master degree they can continue study at e-Postgraduate studies. The graduate and postgraduate students may take part in e-courses (business-oriented free courses). Additionally, the traditionally learning students may also take a part in the e-courses as well and they receive an access to e-content, and they may expect help via e-Tutoring. After graduation students may continue learning at