Chapter 10
Mobile Learning Services on Cloud

Dušan Barać
University of Belgrade, Serbia

Miloš Radenković
Union University, Serbia

Branislav Jovanić
University of Belgrade, Serbia

ABSTRACT
This chapter discusses providing mobile learning services on cloud. Mobile cloud computing brings numerous benefits and enables overcoming technical constraints of mobile learning. The main techniques and approaches in mobile cloud computing are analyzed. A model for mobile learning services delivering through cloud computing is proposed. Several examples of mobile learning services implementations on cloud are presented: Android native application that provides Moodle learning management system features and a SMS service and mobile application for managing the infrastructure of e-learning system.

INTRODUCTION
Rapid advancement and ubiquity of mobile technologies has significantly increased interest in mobile learning. Main idea of mobile learning paradigm is to enable anyone to access information and learning materials from anywhere and at anytime, using a mobile device (Ally, 2009; Chen, Chang, & Wang, 2008).

Mobility is seen by researchers and pedagogues as a new opportunity for education since it provides more chances for learners to personalize their learning process, enhance social interactions, learn more effectively and more autonomously, and collaborate with other peers and teachers at anytime and from anywhere, inside and outside the formal collaborative learning context (Elhussein & Cronje, 2010; Laouris & Eteokleous, 2005; Martin, Diaz, Sancristobal, Gil, Castro, & Peire, 2011).

In (Chen, Kao, & Sheu, 2003) the authors describe five main characteristics of mobile learning:
Primary goal of this chapter is to investigate possibilities for delivering mobile learning services through cloud computing. We analyze the need and requirements for implementing m-learning services on cloud. Different approaches and techniques of mobile cloud computing in learning are discussed. Main issue in this chapter is mobile cloud computing in e-learning. Several examples of mobile services provided on cloud are presented in this work: ELAB Android native application that provides Moodle LMS features, SMS service, and mobile application for managing infrastructure of e-learning system.

MOBILE LEARNING SERVICES

Mobile learning systems include set of complex processes, various components, services and user roles. In order to develop effective environment for m-learning, it is necessary to determine the characteristics of the users, and then use the information obtained for the creation and implementation of educational processes. Model of m-learning could be expressed through the following function:

$$MLearn = f\{t, s, LE, c, IT, MM, m\}$$

- $t =$ time
- $s =$ space
- $LE =$ learning environment
- $c =$ content
- $IT =$ technologies
- $MM =$ mental model
- $m =$ method

In the literature, there are a few definitions of what constitutes a mobile application. An application is mobile if it runs on a mobile device, namely a mobile phone, and is either always or occasionally connected to a network. A mobile application may include data storage, data processing or viewing or transmission to another application or server (Vazquez-Briseno, Vincent,
Related Content

Effectiveness of Using Mobile Technologies in Teaching and Learning
www.igi-global.com/chapter/effectiveness-of-using-mobile-technologies-in-teaching-and-learning/139119?camid=4v1a

Negative Exponent Fraction: A Strategy for a New Virtual Image into the Financial Sector
www.igi-global.com/chapter/negative-exponent-fraction/94235?camid=4v1a

Mobile Technology and Learner Autonomy in Language Learning
www.igi-global.com/chapter/mobile-technology-and-learner-autonomy-in-language-learning/139039?camid=4v1a

Students' Kinaesthetic Interactions with a Touch-Enabled Virtual Mapping Tool
www.igi-global.com/chapter/students-kinesthetic-interactions-with-a-touch-enabled-virtual-mapping-tool/139114?camid=4v1a