

# Design and Development of M Learning Standard for Content Portability Overview and Case Study

Chandni Sharma , Parmeet Kaur Grewal

*Dept of Computer Science and Technology,  
Lovely professional university Punjab, India*

**Abstract-- This paper basically shows the development of m learning standard for content portability .learning can be accessed in mobile environment. The paper presents an overview of mobile learning concepts and environment, its advantages and future scope, and also provides the description of the mobile learning.**

**Keywords—m learning, mobile application, flex, xml, lms**

## I. INTRODUCTION

M stands for mobile learning. That is an extension of e learning. E stands for electronic learning's-learning can be considered an offshoot of e-learning. But, in fact, considering that e-learning enabled the distance learning using the Internet, m-learning goes beyond by allowing the user access to perform anywhere, even on the move, and the device becomes in fact a mobile repository information. The concept of education with the use mobile phones covers a wide range of opportunities.

Mobiles basically provides the mobility environment to its users due to its various characteristics such as to learn anywhere, everywhere, and in motion - just simply carry a personal mobile device wherever you go, learn by interacting with different people, whether in the social community or through social networks, forums.

Today mostly people are used with different mobile phones, and communicate with various people whom they like or with whom they work, either through direct conversation or by exchanging messages. In fact, the text messages play a very limited role in communication, either by poor information quality or high costs. While the "idea" of the personal computer largely derived from the look of a typewriter and calculator, usually born in the company, the phone came from the merger of the notebook and telephone, being something very personal. Today, more than ever, businesses are stepping forward to bring people together because people like to relate to each other, regardless of business they do. If mobile network project can be developed in this format, a immediate relationships, then this is the path.

Three areas where mobility can bring immediate conclusion and strategic importance for organizations

- mobile-business
- mobile-commerce
- mobile-learning

It is a field which combines two very promising areas – mobile computing and e-learning. Handheld devices are emerging a one of the most promising technologies for

supporting learning and particularly collaborative learning scenarios. The development in the mobile computing has changed the way we communicate and work. The new generations of this device not only are becoming increasingly more powerful in terms of processing speed, storage capacity and operating time but also have essential functionalities such as

Short message service (SMS)

Multimedia message service (MMS)

M-learning is often defined as e-learning through mobile computational devices. In general by mobile device we mean PDAs and digital cell phone, but more generally we might think of any device that is small, autonomous and unobtrusive enough to accompany us in every moment in our every-day life, and that can be used for some form of learning. These small tools can be seen as instruments for accessing content, either stored locally on the device or reachable through interconnection. They can also be a tool for interacting with people, via voice and through the exchange of written messages, still and moving images .There are many properties that differ when comparing a mobile device from a desktop PC (the usual medium to deliver e-learning) and they have impact on what is reasonable, useful and even pleasant to do on such devices. Some of them are the output (i.e. the screen size and resolution capabilities, etc.); input (i.e. keypad, touch-screen, voice input); processing power and memory; supported applications and media types. When we try to transfer services provided by an e-learning platform into services in an m-learning

Platform we can see that some of them should change to fulfill the limitations of the small devices, some are impossible to be delivered in a certain context, but also new services appear, provoked by the mobility

## II. WHAT IS MOBILE LEARNING

ADL defines mobile learning or M"learning" as the use of handheld computing devices to provide access to learning content and information resources. Although studying the effectiveness of mobile, it is important to recognize that mobile learning is also inclusive of many types of informal learning opportunities and is not only limited to formal training courses

Two systems are used in this type of learning

•**LMS (learning management system)**

The field of learning styles is complex and affected by several aspects, leading to different concepts and views.

Many learning style models exist in literature, such as the learning style model .While there are still many open issues with respect to learning styles, all learning style models agree that learners have different ways in which they prefer to learn.

Furthermore, many educational theorists and Researchers consider learning styles as an important Learning styles can be considered in different ways. A first step is to make learners aware of their learning styles and show them their individual strengths and weaknesses. The knowledge about their learning styles helps students to understand why learning is sometimes difficult for them and is the basis for developing their weaknesses. Furthermore, students can be supported by matching the teaching style with their learning style. Providing students with learning material and activities that fit their preferred ways of learning can make learning easier for them.

**•CMS (content management system)**

Content management and content authoring are two concepts that partially overlap, and between which it is difficult to draw a clear distinction line. Multimedia Content Management Tool content management refers to the process of collecting, managing and publishing the content, while content management tools facilitate the tasks by providing automatic features Content authoring as opposed, is mostly related with the content design, creation and presentation, while authoring tools aim to facilitate these tasks for content authors that lack advanced skills such as programming skills. Content management technology is an integrated application of many advanced technologies, focused on solving variety of unstructured or semi-structured digital resources collection, management, use, transmission and value-added, and can be integrated into the structure of organic-based data, business intelligence environment. this paper puts forward method to construction Course- Education website with the content management technology, this method can separate webpage manufacture, layout technology and the course content, fundamentally solves the bottleneck of technology and the content, role division of the maker and the teacher

**III.DEVICES OF M LEARNING**

*A.Prototypical devices*

Cell (or, properly, mobile; cellular technology is long-gone) phones are the prototypical mobile device. They're portable; they have audio input and output, and a keypad, and some sort of screen. They may have many other things too, bridging the gap between the phone and other sorts of devices. And, of course, they have connectivity through the wireless phone system.

An unusual offshoot is the GPS (Global Positioning System) system. Originally for tracking one's location and providing navigation directions, increasingly they're coupled with other systems and can identify addresses, assist with traffic, and provide information on nearby accommodation, meal, services, and even shopping opportunities. Greater integration allows them to serve as mobile phone 'hands free' units in

cars. Mobile devices in themselves make us more effective, even before we start thinking about our learning opportunities.

Mobile devices include:

- Mobile phones.
- Personal digital assistants (PDAs) ;
- Personal digital media players.
- Portable digital media players.
- Portable digital multimedia players.
- Portable gaming consoles.
- Ultra-mobile Personal Computers (light and small portable computers that run Windows Operating Software as well as standard packages such as Word, Excel, PowerPoint and Access);
- Tablet PCs (like laptop computers except they come with a special pen to select, drag, and open files as well as enter handwritten notes);
- Smart phones.

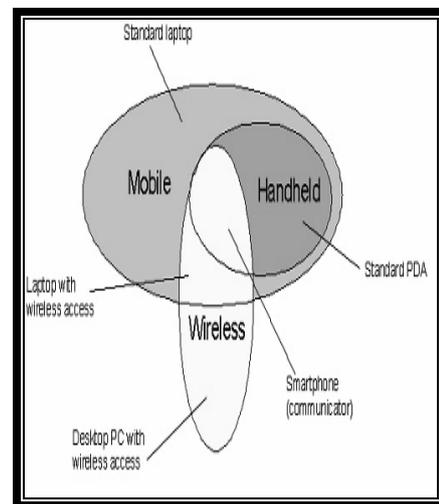


Figure1. M learning environment.

**IV.FEATURES OF MOBILE TECHNOLOGY.**

- Provide anytime, anywhere access to content (depending on the mobile device)
- Provide just-in-time training or review of content
- Enhance learner-centered approaches
- Facilitate collaboration through synchronous and asynchronous communication.

- Wireless Data Standards
- WAP (Wireless Application Protocol),
- WML (Wireless Markup Language, )
- SMS (Simple Messaging Service, aka text-messaging);
- MMS (Multimedia Messaging System, aka picture mail);

WAP is a format that allows the creation of a web browser on a mobile device. It's a lightweight way of bringing in internet data into a readable form. WML was designed to accompany

WAP, and provide stripped-down form of XML suitable for mobile devices. As devices get more powerful browsers, these standards are being largely bypassed.

*A. Advantages of m learning.*

- Interaction: Student interaction with instructors and among each other.
- Portability: PDAs are lighter than books and enable the student to take notes or input data directly into the device regardless of location either typed, handwritten or using voice.
- Collaborative: Enables several students work together on assignments even while at distant locations.
- Engaging learners: The new generation likes mobile devices such as PDAs, phones and games devices.
- Increase motivation: Ownership of the handheld devices seems to increase commitment to using and learning from it.
- Bridging of the digital divide: Since handhelds are more affordable than larger systems they are accessible to a larger percentage of the population.
- Just-in-time learning: Increases work/learning performance and relevance to the learner.
- May assist learners with some disabilities.

*B. shortcomings in m learning.*

- Small screens of mobile phones and PDAs
- Limited storage capacities in PDAs
- Battery life/charge
- Lack of common operating system
- Lack of common hardware platform makes it difficult to develop content for all.
- Less robust
- Still difficult to use moving graphics
- Limited potential for expansion with some devices
- Devices can become out of date quickly
- Wireless bandwidth is limited and may degrade with a larger number of users
- Difficulties with printing, unless connected to a network

**V.OBJECTIVES OF THE GIVEN PAPER**

- To develop a standard for m learning based on portability of the content.
- To provide cheap and fast platform for learning.
- To enhance a learning skills for individuals.
- To provide portability with various mobile devices.
- To analyze if the students are ready and willing for m-learning.
- To recommend how to implement m-learning, so as to be an effective medium of imparting education in a higher education institute.

**VI. TECHNICAL ASPECTS NEED TO DEVELOP M LEARNING APPLICATION.**

- MLE- Moodle Learning Engine Moodle learning engine is Moodle-web plug-in for Moodle. Moodle system basically it adds M-learning functionality which can be accessed by any mobile phone browser. MLE-Moodle is an out-of-the-box mobile Learning ( M learning) system, designed for mobile Phones MLE-Moodle you can enhance your eLearning system to mobile Learning, and can learn either with your mobile phone (M Learning) or with your PC / Notebook (eLearning)
- MLE (Mobile Learning Engine) - learning application for mobile phones are written in Java (J2ME) which enables to its users that they can use their phone at anytime and at anyplace for computer-aided, multimedia-based learning. It is a content independent engine. MLE (Mobile Learning Engine) is a comprehensive learning application. It transfers the computer-aided and multimedia-based learning (known as eLearning) to a mobile environment (to a mobile phone). This special kind of computer-aided and multimedia based learning with a mobile device is commonly known as "M Learning".
- MLEX – Mobile Learning Experiment - software tool designed to create a single web page viewable on standard or small sized displays –updated.
- Software tool kit will be used.
- A handset is used (I phone consist of any company) which will be the main tool.

**CONCLUSIONS**

M-learning will developed more and more in the future. It is true that the wide access to learning through m -Learning is gaining significance and becomes essential for the survival in this modern environment which is continuously diverting as the requirements of the need. We can create or develop a content or application for M learner it will support the mobile learning environment as well as for distance learning for the pervasive learner.

**REFERENCES**

[1] D.A. Kolb, *Experiential Learning: Experience as the Source of Learning and Development*, Prentice- Hall, Englewood Cliffs, New Jersey,1984.

[2] Zhao Hua, Chen Xiao-Hui, "Design and Implementation of Web Automation Building System Based on Content Management," *Computer Science*, vol.32, 2005.

[3] Sodic, M.Matic, Y.Bazant, A..Web content management system based on XML native database.25<sup>th</sup> Int. Conf. information Technology Interface ITI 2003, 2003, 6(16):P457-462

[4] M. Faccioni, "M-Learning: mobiledevices and trends in education", in *ICBL 2008 International Conference on Interactive Computer aided Learning*, Florianopolis, SC, 2008.

[5] L. B. Gouveia and P. Reis, "The Saki collaborative learningenvironment," *Revista da Faculdade de Ciências Humans e Sociais*,no. 5, Porto, 2008.

[6] A. Kukulska-Hulme and J. Traxler, *Mobile learning: a handbook for educators and trainers*OxonUKRoutledge,2005.

[7] K. Hampton et al., "Social Isolation and New Technology - How the internet and mobile phones impact Americans' social networks", *Pew Internet American Life Project* Nov.2009.

- [8] Woukeu, A., Millard, E.D., Tao, F. and Davis, C.H., "Challenges for semantic grid based mobile learning", IEEE SITIS, Vol. 2005, available at: [www.ubourgogne.fr/SITIS/05/download/Proceedings/Files/f135.pdf](http://www.ubourgogne.fr/SITIS/05/download/Proceedings/Files/f135.pdf) (accessed 17 Feb 2011)
- [9] Muyinda P.B., "M Learning: pedagogical, technical and organizational hypes and realities", Campus-Wide Information Systems, Vol. 24, No. 2, 2003, pp. 97-104.
- [10] Norman W. Y. Shao, Stephen J. H. Yang, "A content Management System for Adaptive Learning Environment Proceedings of the IEEE Fifth international Symposium on Multimedia Software Engineering.
- [11] A. S. Andreou et al. (2002). Mobile Commerce Applications and Services: A Design and Development Approach.
- [12] K. Hampton et al., "Social Isolation and New Technology - How the internet and mobile phones impact Americans' social networks", Pew Internet & American Life Project.