

Mobile communications technologies for young adult learning and skills development (m-Learning)

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Abstract

The m-learning project will develop prototype products to provide information and modules of learning via inexpensive portable technologies which are already owned by, or readily accessible for, the majority of EU young adults. The products seek to attract young adults to learning and assist in the development and achievement of lifelong learning objectives. M-Learning's target audiences are young adults who are not in education or training (including the unemployed), and those who are mobile, casual/temporary/self-employed or in low paid/ low skill employment, with literacy or numeracy development needs.

1. Introduction

"Inertia and fatalism...are our chief enemies. We must be bold and imaginative to overcome them" [1]

In many European countries we are failing to deliver the most basic literacy and numeracy skills to many of our young people. Having recognised the problem the UK government is making substantial funds available to addressing it and is seeking to use imaginative and creative methods to reach out to target populations. The European Commission is also concerned and they too wish to support imaginative solutions. Therefore, the EC are supporting our project under the Learning Citizen strand of their Information Society Technologies (IST) programme.

The focus of the m-learning project is on young adults who are most at risk of social exclusion in Europe. They have not succeeded in the education system, cannot read and write adequately, have problems with simple calculations except in familiar contexts. What do many of them have in common? A mobile phone. What do they do with that? They send text messages, they talk to their friends and some of them play simple computer games. What will they soon have in common in the future?

Perhaps a location-aware mobile multimedia communications centre? Or perhaps it will still be just a regular mobile phone with text messaging. The project is investigating how the technologies in the hands of these young people can be used to engage them in learning and thereby in improving their skills and opportunities?

1.1. Some shocking facts

The International Adult Literacy Survey 1997 found substantial literacy problems across all of the countries studied [2]. Many, including the UK, had rates of illiteracy of 20% or more. Innumeracy was worse.

"Some 7 million adults in England - one in five adults - if given the alphabetical index to the Yellow Pages, cannot locate the page reference for plumbers. That is an example of functional illiteracy. It means that one in five adults has less literacy than is expected of an 11-year-old." [3]

"Of the 580,000 or so 16-year-olds who leave school each year, around 150,000 are below Level 1 in both Maths and English. 22% of these young people do not go on to training or work after they leave school. We are determined to bring these young people, who are often the most marginalised or disadvantaged in society, back into learning." [4]

1.2. Some good news

There is no doubt that one of the ways of motivating people such as the typical 20 or 30 year old is by using Information and Communication Technology (ICT). It makes the learning process much quicker, much easier, much more attractive, and much more acceptable. There is also no doubt that the extensive use of computers and appropriate software would have a dramatic effect in reducing the number of people with literacy or numeracy problems (Sir Claus Moser on using New Technology).

2. m-Learning

Our objective in the m-Learning project is to develop and trial prototype products and services to deliver learning via technologies which are inexpensive, portable and accessible to the majority of EU citizens. Our primary target audience is young adults who are not currently engaged in education or training plus mobile casual, temporary or self-employed adults and adults in low paid/low skill employment with literacy or numeracy development needs.

2.1. The technologies

The m-learning project will use Lecando Training Server 5 as the Learning Management System. Lecando 5 is a multilayered distributed application, based on J2EE. It is constructed with modularity and reusability in mind. This has resulted in an architecture that allows for adaptive client applications suited for different users.

The business logic is centralized in a service layer of Enterprise JavaBeans. This is in turn accessed by the different client applications.

In the default configuration of Lecando 5 the learning part is presented as an HTML interface which is accessible by web browsers. Administrators of the Lecando 5 system use a Swing application client distributed via Java Web Start, the latest in application deployment technology. For the m-learning project Lecando is developing a WAP and a VoiceXML interface to the LMS.

The reason Lecando 5 can have several clients is due to the modular architecture with a centralized business logic. The service Enterprise JavaBeans layer accesses the database through a persistence layer of entity EJB's. Lecando 5 uses Container Managed Persistence resulting in database independence.

Beside the LMS, the m-learning project is exploring a wide range of technologies from leading edge (Location-aware, hand-held browsers, WAP, advanced voice technology) to those in widespread use, but normally outside education (SMS on standard mobile phones).

The technologies are developing very fast, new products are emerging all the time and many of them are hybrids of previously separate products e.g. palmtops which are also phones.

We cannot know which technologies will emerge as the most popular by the end of the project in 2004. Therefore we are developing prototype learning materials and games capable of running on a variety of different devices and applying new development standards to maximise their

interoperability across products and with learning environments.

2.2. Project organisation

The m-Learning team is a partnership of organisations from the UK, Sweden and Italy, combining skills in pedagogy and technology. The pan-European consortium has a strong industrial focus with two organizations, CTAD (UK) and Lecando (Sweden), which are involved in developing commercial products. In addition to having special technical expertise they have a track record of developing multimedia courses for the Web and on project completion they will be in a position to exploit the outcomes of the project commercially.

The academic partners, Ultralab (UK) and CRMPA (Italy), have considerable experience of delivering research projects related to learners of all ages, inside and outside formal educational environments. The coordinator, LSDA (UK), has an in-depth all-round knowledge of lifelong learning and educational policy, and specific knowledge of the practical application of ICT in a variety of learning contexts.

The partners all have experience of working on major international projects. Given the industrial focus of two of the partners there is a good prospect of producing commercially viable products based on the outcomes of the project.

User trials of products developed within the project will be carried out working in partnership with educational institutions and organisations that reach out to disadvantaged young people.

The project consortium consists of:

- LSDA (UK), <http://www.lsd.org.uk/>
- CTAD (UK), <http://www.ctad.co.uk/>
- Ultralab (UK), <http://www.ultralab.net/>
- Lecando AB (Sweden), <http://www.lecando.com>
- CRMPA (Italy), <http://www.crmpa.it/>

[1] UK Department for Education and Employment, "Skills for life: the national strategy for improving adult literacy and numeracy skills" 2001.

[2] International Adult Literacy Survey "Highlights from the Second Report of the International Adult Literacy Survey: Literacy Skills for the Knowledge Society" 1997
<http://www.nald.ca/nls/ials/ialsreps/ialsrpt2/ials2/tocials2.htm>

[3] The report of the working group chaired by Sir Claus Moser, "A Fresh Start, Improving Literacy and Numeracy" 1999.

[4] UK Department for Education and Employment, "Skills for life: the national strategy for improving adult literacy and numeracy skills" 2001.