**Issue Three
November 2003**

MOBIlearn is a worldwide European-led research and development project exploring context-sensitive approaches to informal, problem-based and workplace learning by using mobile technologies. The MOBIlearn project

consortium involves 24 partners from Europe, Israel, Switzerland, USA and Australia. Their competencies are integrated and extended by a Special Interest Group which includes more than 250 of the World's leading organisations, active in Information Technology.

Occasionally connected computing - the next "killer application"?

The concept of "occasionally connected computing" or OCC appears to have emerged from Intel when it launched its Intel® Centrino™ mobile technology. Another way of describing the concept is "intermittently connected users". Neither of these terms, as yet, appears to have been seriously associated with mobile learning.

However, over the coming years the impact of OCC is likely to be huge – particularly in the corporate sector. Chris Thomas, Chief E-Strategist for Solutions Market Development at the Intel Corporation, recently provided three reasons for this: -

"thousands upon thousands of publicly accessible hot spots are starting to blanket cities worldwide"

Firstly he considers that there has been a huge move to establish 802.11 or Wi Fi wireless infrastructures. Rapid standardization and commoditization of the technology has moved 802.11 all the way into the home, education, business, and retail environments. And now with the advent of Cometa Networks (a US based "Wi Fi wholesaler") and other larger telecommunications projects, thousands upon thousands of publicly accessible hot spots are starting to blanket cities worldwide with fast, inexpensive wireless connections.

Secondly, there is the increasingly widespread availability of wireless platforms like those being developed with Intel® Centrino™ mobile technology. So the high-performance processors that Intel is known for are coupled with standards-based wireless capabilities. Through this coupling, Thomas considers that the industry is able to deliver laptop and tablet platforms to the market that are capable of

functioning in an unwired world. The reality is that over the next few years, every user will expect their mobile platforms to be wireless.

Thirdly, most applications that run on computers today were not designed to work in a wireless environment. But developers are rapidly adding functionality to make their solutions work in unwired space, facilitating work in a world that's quickly becoming occasionally connected. The solutions will enable users to frequently re-connect using different hot spots, like at airports either side

of a flight, or be connected via a wire at work and then wirelessly at home. Thus the "pipe" back is different or changing in each of those occasions.

This will have an impact on m-learning developments and sometime that the MOBilearn project is starting to address as it aims to indentify the unique learning opporunities created by m-learning.

" a relatively easy migration for using e-learning applications when on the move is to find a way of using the same applications"

As e-learning primarily depends on being connected to the Internet – a relatively easy migration is to make the same "Managed Learning Environment" available whilst on the move. Clearly, the additional cost of developing a cut-down version of such an application for a mobile device is removed. In addition, there are also potential savings in not requiring a mobile version of the software and associated costs in supporting the additional application.

However, some sort of "software interface tool" is required to synchronise data between the enterprise-based applications and those in the mobile environment. Fortunately, a number of such tools are already starting to become available.

Iona's Mobile Orchestrator

One such tool is Iona's Mobile Orchestrator™ that provides asynchronous web services driven architecture, allowing an enterprise to provide client-side computing power to occasionally connected and mobile workers, customers and partners and to automate new and existing business processes. It is entirely built upon Java, Web services, and uses related industry standard technologies.

It claims to provide near real-time field data collection from mobile workers thus reducing an organisation's dependence on email, by providing a new, ubiquitous mechanism for subscribing to content over the "free" Internet. It also claims to increase mobile workers' productive time, by replacing the current wasteful search/browse/pull paradigm with a server-driven push model for your important business content.

PeerDirect

Another company the PeerDirect Corporation has also been addressing the issue of decentralizing enterprise applications. This means deploying applications directly to remote servers, desktops, and mobile devices so that remote workers can have the same quality of service as workers seated at their desks in their corporate headquarters. The company considers that mobile applications should not be viewed as a special stand-alone category, requiring a special development effort, special support, and special platforms, but rather they should be viewed as an extension of existing applications, in which the architecture is adjusted to enable distributed, rather than centralized, deployment.

The company's flagship product "PeerDirect Distributed Enterprise" claims to let companies deploy existing enterprise applications and relational databases directly to remote offices and mobile devices. It is based on patented technology for two-way, read-write distribution and synchronization of databases and applications, and it enables IT organizations and independent software vendors (ISVs) to move applications out to the network edge and onto users' machines and mobile devices. This means the same application and supporting data can be used remotely or centrally, while changes are replicated and synchronized automatically. It claims not to require any special development, or special operating systems resulting in no major increase in IT overhead.

Useful Links: -

Iona Web Site http://www.iona.com
PeerDirect Web site http://www.peerdirect.com
Nobilis Web Site http://www.Nobilis.com
Iona White paper http://www.mobileimperative.com/content/pdf/MI1_extra_iona.pdf
PeerDirect White paper
http://www.mobileimperative.com/documents.asp?grID=305&d_ID=1800
Nobilis White paper
http://www.mobileimperative.com/documents.asp?grID=305&d_ID=1806
The Mobile Imperative Web Site http://www.mobileimperative.com
Article – "Mobile PCs in the Classroom: Adoption Accelerates" http://www.mobileimperative.com/documents.asp?grID=303&d_ID=1794

Nobilis

A third company offering similar software is Nobilis with ProcessWriter™ a desktop driven process automation tool that empowers business and IT users to create and automate workflow from familiar Microsoft Office applications. IT controls the deployment of reusable components and Web Services while business users are empowered with self-service application development in the environment provisioned by IT. Unlike traditional business process management (BPM), Nobilis' patent-pending software combines ease of use at the desktop with scalability and connectivity across the enterprise.

Users may process-enable the Word documents and Excel sheets they already use or automate interactions through simple Web forms or email. Participants thus complete their work through the most appropriate front-end application, whether or not they are connected to the process engine while they are working. For applications that require significant calculations and data management, users can leverage the full processing power of Excel, for example, to complete their work in the field and then submit it back to the process engine without leaving Excel itself.

The Nobilis platform supports occasionally connected computing (OCC) through two types of synchronization. Occasionally connected users can click a disconnect feature from within their worksheet or document, complete their work while offline, and have it submitted upon reconnection. Likewise process administrators automating an activity specifically for remote users can choose to deliver and receive work via email as an "un-tethered" mechanism for synchronization.

Will OCC really take off?

Will OCC really take off in the emerging world of mobile learning? Well, it is significant that the driving force behind these developments is all about improving the business efficiency of mobile workers. There are even claims a whole day's work per person can be gained from its utilisation with a mobile sales team. As learning increasingly becomes a "just-in-time" "bit-size" activity – clearly OCC offers the potential for such activities – particularly when the return on investment for existing e-learning solutions has, as yet, to be fully realised.

"return on investment for existing e-learning solutions has, as yet, to be fully realised"

Location-enabling Wi Fi networks

One of the scenarios being developed within the MOBilearn Project involves students visiting a museum to learn more about the works of Sandro Botticelli. They first check whether the local museum has material relating to this topic using their mobile devices. They download times of opening, and a route map to get there. In addition, the mobile devices have a route finding facility, so when they take a wrong turn on the way, it helps correct their route.

Interactive, multimedia-based assistance and guidance is also provided to enhance the museum tour experience by playing audio and video automatically as the students move from point to point, or exhibit to exhibit. But unlike conventional systems that tend to be inflexible and tend to require the student to go along a specific route – this system allows the student to personalise the information, and define their own routes according to their interest and/or for supporting their specific learning needs. The system can also be used in different languages and groups visiting the museum can stay in contact with each other.

Driving this location-enabling Wi Fi system is Ekahau's Positioning Engine Software – originally developed with the Complex Systems Computing Group at the University of Helsinki, Finland. The software can accurately pinpoint – down to one metre - the location of mobile devices within a standard Wi Fi 802.11 network. The high accuracy and fast refresh rate enables the reliable tracking of people and data in demanding applications that can be PDAs, laptops and other 802.11 enabled wireless devices.

The MOBilearn Project is currently undergoing technical trials that will eventually lead onto user trails in order to test the suitability of such location-enabling systems for meeting specific learning needs.

Further information about Ekahau can be found at http://www.ekahau.com or by contacting Jarmo Ikonen email Jarmo.Ikonen@ekahau.com

"allows the student to personalise the information, and define their own routes according to their interest and/or for supporting their specific learning needs"

E-learning Strategy
- Consultation

The MOBilearn Project has been invited to make an advisory contribution to a national e-learning consultation document. In July 2003, the consultation document "Towards a Unified e-Learning Strategy" was published by the

Department for Education and Skills – which covers all education and training for England and Wales. The consultation document is ultimately aimed towards producing a ten-year strategy that will enable the embedding of effective and sustainable uses of e-learning for all learners throughout their lives.

The Consultation period lasts until 30 January 2004. Further information can be found at: - http://www.dfes.gov.uk/consultations2/16/ The next issue of this newsletter will contain details of the MOBilearn response.

In addition, the MOBilearn Project has also recently been approached by the Science Ministry of Rhineland-Palatine, Germany who wish to be kept informed of developments in using mobile devices in education.

Other News

From elearning to mlearning

"From eLearning to mLearning" a book written by by Desmond Keegan as part of a project supported by the Leonardo da Vinci programme of the European Union is now available at: - http://www.fernuni-hagen.de/ZIFF/ ZIFF_PAP_119.pdf

National Gallery Collection on Picture Messaging Phones

The National Gallery, London has started making available its world-class collection of paintings to mobile phone users at the touch of a button. The Gallery's entire permanent collection, including pictures by artists such as Van Gogh, Monet, Constable, and Leonardo, can be sent to your Picture Messaging phone via the Gallery's website using the 'Send to mobile' button.

MLEARN 2004 Conference

The m-learning and MOBIlearn projects are delighted to announce that they are collaborating to organise the third MLEARN conference, MLEARN 2004, which will be held in Rome Italy (at the Odescalchi Castle in Bracciano). The dates of the conference are Monday 17 and Tuesday 18 May 2004. Click below to view preliminary information about the MLEARN 2004 conference (pdf file).

http://www.lsda.org.uk/files/lsda/ events/mlearn2003/ MOBIlearn_MLEARN2004.pdf

The image arrives on the phone accompanied by information about the painting. Users can then view the image in greater detail via a zoom facility, or send their favourite pictures to their friends and family with a personalised message. Key visitor information is also available when the picture is sent to the mobile.

Further Information at: - http:// www.nationalgallery.org.uk/what/news/ pocketthis.htm

European e-Learning portal

Go to: -
http://www.elearningeuropa.info/