Mobile services made simple

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(PhysOrg.com) -- European researchers believe they have achieved what has remained an almost impossible dream in the wireless world: powerful mobile services that work simply, seamlessly and intuitively.

European researchers have developed a mobile services platform that is generating a lot of excitement among fellow researchers and developers. It already works with Windows Mobile and Symbian, two leading mobile phone operating systems.

Now there are advanced discussions about porting the system to the iPhone. The system is simple to use, set-up and trust. That is why the researchers called their project Simple Mobile Services (S.M.S.).

S.M.S. holds amazing promise. Even though mobile phones have been around for far longer than web technology, mobile services have historically failed to inspire users. Web services are far more advanced, open and are in a state of constant innovation. S.M.S. wants to make that type of innovation possible for the mobile world.

Great challenges

The challenges are great. Mobile applications do not enjoy universal standards. Even the most modern mobile phones have a comparatively small screen, and a dinky keypad.

These are fundamental constraints that go some way to explaining the slow pace of mobile service development. To meet these challenges, the

S.M.S. project has developed a platform and a suite of supporting tools to finally make mobile services a simple reality, saving them from the complicated mess of competing technological paradigms and proprietary silos.

Open, universal and easily deployed

“We wanted to make our Simple Mobile Services platform open source, and universal, so they do not depend exclusively on service providers,” explains Nicola Blefari Melazzi, coordinator of the project.

Businesses that wish to deploy S.M.S. for their workforce need merely to set up a server in their IT department. S.M.S. can be deployed by anyone who wishes to use them, with or without support from network operators.

That is a vital advantage. One of the barriers to mobile services has been control of the technology by network operators. This has limited the universal appeal of mobile services, leading to a plethora of incompatible systems that users have to re-learn each time they change operator.

Openness is a vital advantage for S.M.S., but it is just the beginning of the project’s work. The team has sought to tackle every stage of mobile services production and deployment. In the process, it has developed many highly innovative, and intuitive, tools and functions.

Mad about MEMs

For instance, S.M.S. has developed MEMs (Mobile Electronic Memos). A MEM is an electronic note that users can use to capture information about locations, people, services and websites, and to share the

information with friends and colleagues.

Users can capture, annotate and store MEMs associated with their current environment, for example a business card for the restaurant where they are eating or the person they are talking to. Or they can capture a MEM produced by a service they are using, such as confirmation of a booking from an airline.

The software developed by the S.M.S. project makes it easy for users to send MEMs to other users, to share them with a broader community, or to use them as input for online services. So a user in a specific location can capture a MEM for the location and send it to a friend.

The friend can pass the MEM to a navigation tool, which will guide her to where her friend is waiting. It is possible to embed MEMs in emails, or even in mobile instant messages. These adaptations make the MEM accessible to users who do not have special software. MEMs can be made available on the web and easily downloaded by mobile users.

This offers powerful functionality. For example, imagine an airline deploys a MEM to update customers about their flights. You receive your flight time and gate on your phone via a MEM. You then send this MEM to your friend who will pick you up at your destination.

Suddenly the airline changes your departure details. Instead of receiving a new MEM, the original MEM updates with the new information and emits an alert, and so does the MEM of your friend.

Primary technologies

There are possibly dozens of powerful applications from this feature alone, and the innovation does not stop there. The project developed five primary technologies to enable simple mobile services, and MEMs are

just the first.

Another is MOVE - short for Mobile, Open and Very Easy - which is a browser for mobile services running on mobile devices. MOVE allows users to instantly access services based on their profile and current context, such as time, location, task and others. It can manage MEMs, supports indoor and outdoor navigation (a map to your departure gate, for example), and many other functions and features.

SMILE, you have APIs

The third innovation from the project is SIM-based security. S.M.S. partners Sagem Orga GmbH and Telecom Italia have developed verification and certificate systems that are hardwired to the SIM card in users' phones and offer very solid security support to authenticate MEMs, for example.

A Service Authoring Wizard allows developers to quickly come up with new services, without any technical expertise. Users can simply add components together to make a new service, defining simple parameters like date, location and so on.

All this is made possible by SMILE-JS, an abstraction layer between the application and the underlying S.M.S. platform, which enables Java APIs (Application Programming Interfaces). APIs are the 'sockets' that allow non-technical users to plug together diverse services on the web to create a mash-up, such as real estate listings and Google Maps, or Flickr content.

Powerful applications

Added together, these components and tools make developing, deploying

and, crucially, using mobile services extremely simple. Combined, they pave the way to powerful new mobile applications and services.

For example, street features like signs, traffic lights or shop displays could emit a MEM to nearby mobile phones, based on user profiles. Imagine you get lost in a foreign city and you do not know the language so can't read addresses or input them in a GPS navigator.

With S.M.S. tools, you can capture your location and send it via a MEM to a friend. The friend can pass the MEM to a navigation tool which will guide her to where you are waiting. Or, you could set your profile up for 'tourism', and your phone could find and retrieve MEMs from nearby points of historical or cultural interest. Set the profile to business and it looks for taxi ranks, or banks, or a specific conference or restaurant.

The technology could be used for 'integrated vertical' applications, targeting particular markets, companies or user populations, or a combination of all three. This could enable mobile city services, enhanced e-ticketing, fleet management, parcel handling, community services, and much more.

The system and authoring wizard are so simple that many of these types of task could be set-up and deployed by people with no technical expertise.

Trialling S.M.S. with students

S.M.S. has trialled its platform with students at the University of Roma II. The system helps students to network, and informs them when a class has changed venue or has been cancelled. The technology was very popular with the 100-strong sample of students who used it.

The project finished its work in February 2009. S.M.S. has stimulated

considerable interest in industry. The project partners are working intensively to explore prospects for commercial exploitation.

“We want to build an open-source developer community around the technology, and of course we would be interested in talking to anyone who is interested in our work,” says Nicola Blefari Melazzi.

Viable solution

It is early days of course, but the potential upside is enormous. Mobile services are, as yet, an unsolved problem - incredible, considering the potential for revenue and new services that bridge the gap between cyberspace and the real world.

Yet the S.M.S. project has completed a full system that can be deployed now on existing technology, simply by downloading and installing the client to mobile phones, and setting up an appropriate server.

The project has created a viable solution to the unsolved problem of universal, functional, open and simple-to-use mobile services.

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Provided by ICT Results