Mobile Web Initiative—a position paper from Sun

15-October-2004
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Introduction

Sun has been an active participant in various industry initiatives, developer communities and standards organizations which have focused on the mobile web, network access and identity management, as well as the traditional Internet applications and the Web.

From a technology point of view, Sun is a leader in mobile telecommunications. Just in 2004, some 580 million Java phones are expected to be shipped, according to the research firm Ovum. Many base station and radio server systems ultimately connect to Sun computers for everything from radio resource management to pre-paid services.

As a company, Sun has developed a great deal of mobile telecommunications expertise and industry-specific knowledge. Sun has been at the forefront of bringing the fruits of IT and enterprise computing to the world of telecommunications and mobile communications.

Forms of Mobility

When "mobility" is interpreted as our simple ability to move, regardless of what device we are carrying, many forms of mobile web become distinguishable based on the treatment of connectivity and identity.

Some mobile systems transport one's "logical" connection from place to place. Others are based on transport and binding of one's identity from place to place.

The more seamless the experience of mobility, the more useful it becomes. The most seamless mobile systems can transport both one's logical identity and station connection from place to place.

Let me give some concrete examples.

The wired access to the web already provides a simple kind of mobility to us through our practically limitless ability to reach any web service from any client anywhere by a simple act of binding our identity with the service as we move from one station to another.

IETF's SIP provides mobility on the Internet based on Internet-transparent addresses and just-in-time (and mostly, mobile-ready) binding of those addresses with Internet addresses as the user moves his station from end-point to end-point, or from network to network.

Wireless protocols such as 802.11 provide limited mobility but no inherent roaming although new protocols in the same family will most likely seek to resolve this problem.

Finally, GSM and GSM-based family of protocols clearly define how mobility from one radio cell to the next is to be accomplished while keeping with the same mobile terminal (or mobile station), logical connection, SIM and associated MSISDNs.

The last form of mobility continues to represent the most seamless kind we know so far but that does not mean the other kinds of mobility cannot become more seamless through various complementary technologies and deployment models.

The Importance of Network Access and Identity Management

Returning to our standards activities, it is worth noting that we have been one of a group of companies who have advocated the importance of network access and identity management as an underlying and unifying technology in open, and mobile web service environments. We believe the market will eventually move towards a service-oriented architecture which unifies web services with network access and identity management technologies.

The importance of access and identity management becomes more clear if we look, in more detail, at the economics and the market trends involved.

With large and growing numbers of people subscribing to mobile network and communications services, the operators and carriers have core competencies that give them an opportunity to bring sophisticated and richer services to network end-point users and subscribers, constructing service scaffoldings which are more intelligent and responsive to the contextual needs of users.

However, in the long run, the provision of such sophisticated services requires integration and interconnection of a large number of value-add service providers and partnerships. To arrive at such a super network of services, identity federation and management become crucial necessities to other valuable functions of the system.

The same arguments hold for enterprises in general and mobile enterprises in particular.

From Web-based, joint business ventures (such as travel and consumer finance sites) to collaborative corporate vendor portals, evidence of the virtual enterprise is rapidly becoming so pervasive that it is easy to forget the phenomenon has only been a part of the business and technology landscape for a relatively short time.

In just a few years, the virtual enterprise has defined entirely new opportunities for companies to do business online with growing numbers of consumers, vendors and partners.

The opportunities that the virtual enterprise affords for business growth and operational efficiency are extraordinary.

These opportunities are matched only by the challenges they present to open and yet secure operation across potentially large number of business entities, domains and systems. To successfully build the virtual enterprise, companies need both open and secure mission-critical systems which can deliver high levels of service efficiently.

Comprehensive identity management is the solution, but only if the job gets done without adding new layers of cost and complexity.

Content and Digital Rights

W3C has made unique and important contributions with its focus on the *content* perspective.

The mobile communications world has brought the possibility of accessing content from anywhere, anytime by anyone who carries an appropriate device and has subscribed to an appropriate level of service.

The diversity in both of these dimensions continues to grow at a rapid rate, creating new market opportunities. Patterns of mobile content use have demonstrated that new but very active markets can be created to meet particular content access requirements.

On the one hand, digital content is easy to distribute and copy but it also has great potential to reach users in new ways. On the other hand, many economists and legal scholars believe that those who create high-value content need to be given an incentive for creative content they produce. In fact, many laws protect rights that provide incentives for creative work.

The tension between the ease of digital distribution of content and the rights incentives given to content creators is resolved through appropriate digital rights management.

Digital rights management has continuously gained more importance in mobile device and mobile communications business in the last few years.

W3C and the Mobile Web

A large part of the work of the W3C has focused on content description and distribution and web services technologies.

Activities such as the W3C Mobile Web Initiative can play a positive role in the mobile web services domain by:

1. Articulating how web content can best be described for and used by mobile devices. If there are any gaps in this area, they need to be identified and addressed. New research and study regarding display technologies may be of significance.
2. Paying greater attention to the central role of network access and identity management to the evolution of a service oriented architecture for the use of the web, i.e. by adding a user-centric perspective to W3C's traditional content-centric perspective of the Internet.
3. Incorporating, as an extension of item 2, the technologies that would allow digital rights to be preserved when content is distributed through the web, including the mobile web.

These are only a sample of ideas for how this initiative can help unleash the mobile web to reach the future phases of its evolution.
