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Wireless Web: What's the Impact on Your E-Business?

By Madanmohan Rao

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All phones are created equal, but some are more equal than others. From Canada and California to Japan and Korea, Internet-enabled mobile phones are rapidly ushering in the next generation of online commerce: "m-commerce" or Mobile-commerce.

"The wireless world is a parallel universe almost as large as the Net — and the two are beginning a fascinating convergence, are according to Swapnil Shah, Director of international operations at Inktomi.

Three sets of devices are Emerging as wireless Internet platforms: cell phones, PDAs (personal digital assistants like Palm Pilot) other dedicated devices (such as digital cameras and Walkman radios).

Mobile e-commerce services — "me-services" — have slightly different attributes than the Internet services

we think of today, says Hewlett-Packard CEO Carly Fiorina. They must enable customers to conduct "burst transactions" — that is, short-session, information-driven transactions that can be completed very

quickly, while people are on the go and in motion.

Market Forecasts

According to market forecasts from Jupiter, Forrester and IDC, between 50 to 70 per cent of Internet users worldwide will be accessing the Net via mobile devices in the year 2003; the number of Internet-enabled devices then would range from 150 to 350 million units. Ads in the form of text links, micro banners and audio jingles on WMI (wireless mobile Internet) networks are expected to cross the \$1 billion mark within two years.

Reports from Ericsson suggest that the sale of mobile phones worldwide will in a few years exceed the PC market by four times. 50 per cent of Europeans are expected to have mobiles by year 2003. And by

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2002, third-generation networks known as UMTS (Universal Mobile Telecommunications System) will offer richer online experiences.

Companies have been toying around the idea of a wireless Internet for quite some time, but the wireless revolution, as we know it today started to really pick up steam in 1997. Disparate standards movements and "microbrowser" Companies like Phone.com collectively mobilized implementations, who, along with Nokia, Motorola and Ericsson, formed the WAP (Wireless Access Protocol, sometimes jokingly referred to

as "Why Another Protocol?")

Forum to develop an independent standard for the wireless Internet, based on WML (Wireless Markup Language).

Around the same time, NTT DoCommo in Japan released a similar technology based on compact HTML called i-Mode. The last several years has seen a rapid proliferation of wireless content, mostly throughout

Europe and Asia, but also in the U.S. and Latin America. The numbers for WAP, however, are not as thrilling, mainly due to the fact that application developers need to redesign their content using WML.

In the pre-WAP era, SMS (Simple Messaging Service) clearly was the most popular trend by enabling two-way messaging and mobile e-mail. SMS text messages now represent about 8 percent of total mobile revenues in Europe (Approximately \$10 billion) and that figure is growing exponentially.

But it is 2000 and 2001, which will belong to the mobile Internet, according to infotech services company

Infosys, whose offerings now include wireless content solutions. Europe with its focus on standards has achieved 100% ubiquity with the adoption of GSM, whereas North America has traded innovation and diversity for ubiquity with a slew of cellular technologies like AMPS, TDMA, CDMA, GSM, IDEN, thus making it slower for mobile Internet services to take off.

In most markets, much WMI usage is among trendy teenagers, but it will become more and more "professional" and mainstream, predicted Bertrand Bidaud, telecom research analyst at global research

firm Gartner Group, in an interview for this publication.

"M-Commerce will eventually overtake traditional PC-based B2C commerce," predicts Infosys wireless

consultant Shashi Vempathi. The cellular phone will fast transform from a voice device to be the key enabler of secure mobile commerce in the 21st century, and by its mobile nature it will become the instrument for conducting every day sundry transactions — something that is difficult for PC-based B2C e-commerce to achieve, he says.

Market Potential and User Behaviour

Applications well suited for the WMI domain include B2B services (mobile Intranet access, roaming email services), travel information (for buses and Airlines), finance (time-critical banking and stock trades), e-commerce (betting, auctions), and community (chat, e-postcards, cartoons), according to Johan Montelius, wireless Internet specialist at New York-based research firm Jupiter Communications.

A recent study that Hewlett-Packard conducted on mobile markets found that the first generation of "me-services" falls into six categories:

Transactions (banking and travel reservations) information (sports Scores, real-time news),

Database search (yellow pages and translation services),

Entertainment (customer ringers, games),

Personal services (calendars, address books),

Communications (Group SMS, mail).

M-commerce is great for time-sensitive and location-sensitive sales.

M-commerce can easily spur impulse buying for items like music — consumers can buy an album almost as soon as they hear it on radio or see the video on MTV. News and information services have been among the first to jump in to exploit the possibilities of WMI, and dozens of news feeds are now accessible via mobiles.

Phone.com has already rolled out book and music ordering via WAP for Amazon in the U.S. and U.K.

In the corporate environment, banking and airline sectors are early adopters. But for a long time to come, the

"killer app" of WMI will still be Old-fashioned messaging and related services, says Gartner's Bidaud. "B2B will come later. It appears at a more mature stage, as in the wired world. First will be B2C and then corporate application (Intranet)," he observes.

WMI in Action

In Japan, one of the most profitable WMI sites is Bandai, which "uploads" new cartoons everyday on the phone. Tone rings download is also very popular. A large proportion of stock trading in South Korea has shifted to the Net and mobile phones.

U.S.-based Inktomi is offering "shopping dial tone" solutions via WAP directory and catalog services for cell phone users, so that online commerce is accessible irrespective of the platform used. Inktomi is working with hundreds of merchants to offer sales of millions of products via WAP; merchants use a branded interface, while Inktomi will handle billing, data center, and shopping basket operations.

Yahoo's sites in many countries offer instant access to mail, finance, news, WAP directories, and other information for mobile users in many languages. Yahoo has tied up with four mobile phone firms in Taiwan to carry its Chinese-language WAP portal, which includes news, email and weather forecasts.

In Australia, early results have shown that on Telstra's WAP service, financial news, horoscopes and sports results were some of the most popular services, followed by movie listings, flight information, and Yellow pages reference data.

Hewlett-Packard has launched a Mobile Services Bazaar, targeted at service providers and developers for mobile-related initiatives.

Companies like ConsumerDesk.com, a comparison-shopping site, already have WAP-enabled product spreadsheets for consumers. "Soon, real-time discounting information will be made available for cell phone users. And since cellphones are always on, this can become a real killer-app for m-commerce," says Rene Jepma, CEO and founder of ConsumerDesk.

Pan-European auctioneer QXL.com has announced a deal with mobile Internet portal iobox that will enable users to track auctions and receive bid alerts from their mobile phones. iobox, launched in 1998 in Finland, has half a million users in Finland, Sweden, Germany and the U.K.

A star performer in WMI-space is Japanese Telco NTT's cellular arm DoCoMo, whose one-year-old

Wireless Web: What's the Impact on Your E-Business?

iMode

service for mobile Net access has already surpassed the six million-subscriber marks. More than 800,000 new subscribers are now signing up for this service each month. Over 12,000 i-mode sites are available in Japan for mobile Internet access, offering banking, travel ticketing, news and email services via a "portal tone."

Next year NTT plans to roll out 3G W-CDMA services with 2 Mbps bandwidth and broadband content, as the number of users accessing the Net via mobiles exceeds those accessing it via PCs. The pervasive, "always on" nature of mobile Net access will undoubtedly continue to spin off entirely new innovations in online services.

Very interesting concepts are emerging in Europe, such as Amadeus, which provides a WAP based travel service, Webraska, which provides a WAP, based navigation service, Paybox, which provides a bill payment service, and NECS, which provides an e-mail aggregation service.

Companies provide internet-to-paging gateways like Silicon Valley based Unimobile.com, which also allow consumers to control the receipt and delivery of messages, alarms and Internet content directly on their devices. The service also lets users customize the look-and-feel of the desktop product to match their offline wireless

devices. Another offers online contact information and diary management solutions via mobile Internet Silicon Valley called company eCode.com.

Roadmaps and Guidelines

Before embarking on their own WMI services, it is key that commerce companies recognise m-commerce as a completely unique service. "Cellphone users are more impatient than Internet users. The paradigm here is not surfing; all services for the mass market have to be pitched at users in such a seamless way that they need not even be aware that they are accessing the Net," according to Cindy Dahm, international director for Phone.com.

"Businesses first need to understand their customers to identify where they can provide the greatest value in a mobile environment. This could range from pushing promotional rewards to facilitating impulsive

shopping over mobile phones. Having figured out the mobile commerce strategy, businesses would have to m-enable their e-commerce and CRM systems," according to Infosys' wireless consultant Vempathi.

The cost of m-enabling primarily would be that of re-writing the existing applications to make them MI-compatible. There could be additional costs, which the businesses would have to bear if they want to leverage cellular networks for providing value, added services based on location information, says Vempathi.

For B2B (corporate application, Intranet), the main cost will be education. "It is about a new way to interact with employees, and that requires dedicated effort," says Gartner's Bidaud.

The most versatile language to choose by designers and application developers would be XML (extensible Markup Language). Sites should be designed using XML for organizing the content and adapting it appropriately to HTML, CHMTL or WML based on the channel of delivery – Web or WMI.

"But it is also important in design to bear in mind that a user would access a service over wireless for performing highly prioritized operations which are time and location sensitive -- unlike a user accessing the service over the Internet who usually has time and flexibility on his side," cautions Vempathi.

So the wireless version of the service should be designed to enable high priority "Here and Now" operations while keeping the wired version loaded with all possible options.

"Wireless interaction requires short dialog today since content is not as rich as on the Web. Design should really focus on key applications, and make them easily reachable to mobile users. Simplicity is key. Local content is also more important than in the wired world," says Gartner's Bidaud.

Many companies embarking on m-commerce tend to stumble on some key misconceptions, such as assuming that the mobile Internet is merely WWW on the cellular phone, or that it is just a matter of code conversion, or that all phones have the same and look and feel for WMI content.

Privacy and security are also a matter of concern, given the unprecedented precision that mobile

operators have for gathering user and location data.

The Road Ahead

To sum it up, we can compare the early excitement generated over WMI to the release of the Mosaic Web browser in the early 1990s. "Just as Mosaic slowly matured into Netscape Navigator, WMI will also be capable of handling text and multimedia over both low and high bandwidth networks," says Shishir Gundavaram, CTO of lifeguru.com, a wireless portal.

"A m-service has to eventually become second nature — it must naturally weave itself into the fabric of our daily lives — like buying train tickets or checking flight schedules," according to HP CEO Carly Fiorina.

In conclusion, consensus seems to be emerging that the performance of m-commerce will improve since airtime fees are expected to drop further, more WMI gateways will become available, and content and commerce services from independent players will proliferate.

Torbjorn Nilsson, senior vice-president of business development at Ericsson, predicts that despite a slow start, the potential of m-commerce is huge. "It will be like pouring out of a ketchup bottle. Nothing ...nothing... nothing ... and then all at once," he says.

Dr. Madanmohan Rao is an Internet consultant and writer based in Bangalore, India. He is the co-author of the handbook "The Internet Economy of India, 2001" and the forthcoming "Asia Pacific Internet Handbook" (McGraw Hill). Madan was formerly the communications director at the United Nations Inter Press Service bureau in New York, and vice president at IndiaWorld Communications in Bombay.

3 Tips to Fix Unreliable Wireless Connections

By Sharron Senter

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Generally speaking, wireless computer connections are reliable. However, nothing is perfect, and sometimes you may lose your connection or experience a weak signal. There are many factors that impact the reliability of your wireless connection. For example, if your wireless adapter is too close to a 2.4 GHz wireless telephone, you may notice a decrease in your computer's wireless signal strength.

Wireless Web: What's the Impact on Your E-Business?

Why? Because the phone and the computer reside on the same frequency and can interfere with each other's performance.

Handy Repair Checklist for Wireless Interruptions

1. First check to see if your cable or DSL is actually working. Usually located in your basement, most modems have four lights. You have a live Internet connection if the "data" or "status" light is on. If it's off, or flashing, your cable is out.

2. If your cable/DSL is working, then reboot your computer. Sometimes, if your cable/DSL goes out for even 10 seconds, your computer and the wireless router may no longer be able to talk to each other. By rebooting your computer, a new IP address is assigned, allowing them to once again communicate.

3. If your desktop is wireless and you've moved the wireless adapter [the box that sits next to the computer with antennas], then you may need to move the adapter until you find a stronger signal.

Sharron Senter is co-founder of <http://www.VisitingGeeks.com> – an on site computer repair, security and networking company serving north of Boston, Southern NH and Maine. Visiting Geeks' technicians are crackerjacks at squashing viruses, popups and securing and making computers perform faster. Learn more about Sharron at <http://www.SharronSenter.com>



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