

DONE WRESTLING WITH THE FAX MACHINE?



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## E U R O B Y T E S

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### Mobile Data Is Set to Take Off, but Glitches Remain

**G**ENEVA -- The [Telecom99](#) exhibition and conference here last week was supposed to be all about the future of telecommunications and the "mobile Internet." Instead, it sometimes felt like a trip back to 1993, around the time the first Web browser, [Mosaic](#), came out of the University of Illinois and kicked off the Internet's commercial stage.

Billboards all around the Palexpo exhibition center claimed that "Instant Internet Is Here Today," and hostesses showed off cellular phones that could display e-mail or capture and send video clips. Speakers elaborated on how new wireless technologies would dramatically change the way we live, work and relate to each other. Hundreds of news articles about the event depicted a future world of unlimited communication possibilities.

It was easy to get carried away. But product demonstrations and discussions with exhibitors revealed a different reality: one of slow connections, complex setup procedures, buggy and unstable software and hardware, incompatible systems and few services -- much as in the early days of the commercial Web. The only difference from 1993: wires are giving way to wireless systems.

The talk of the exhibition was the [Wireless Application Protocol](#) (WAP), a new standard enabling access to Internet-like information through mobile phones and other wireless-capable devices like the Palm. In short, the WAP specifications define both a set of protocols and a markup language that allow information to be transmitted over mobile phone networks and displayed on devices running so-called microbrowser software.

The system works in much the same way as the Web, with the Wireless Markup Language (WML) serving roughly the same functions as HTML. But WAP is not a way to access standard Internet and intranet services. Web information needs to be converted into a special format before it can be made available to mobile users.

When a user wants to look up, say, a stock quote, he launches a connection between his cellular phone and the WAP server, gets a menu, chooses one entry, gets a dialogue screen, punches in the ticker symbol, clicks to send it, and gets the quote. (To see an example of how this works on a mobile phone screen, take a look at Olsen and Associates' [WAP currency converter](#).)

The process is not complicated, and telecommunications companies like [Telia](#) of Sweden, [Swisscom](#) of Switzerland and Finland's [Sonera](#) are testing services like news updates, weather forecasts, ticketing, city guides, banking and stock trading.

<http://www.nytimes.com/library/tech/99/10/cyber/eurobytes/19eurobytes.html>

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Sonera, the largest provider of cell-phone service in Finland, has developed a "mobile portal" called Zed, which allows users to set up and manage their accounts and personal home pages through the Web, then access them over the phone. Telia has created a similar service with Oracle dubbed myDOF, where DOF stands for "Department of Future."

However, while most manufacturers were featuring prototype WAP phones at their Telecom99 booths, almost none are commercially available to date -- prompting some to joke that WAP means "Where Are the Phones?"

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### **Even when it works, wireless information can be extremely expensive.**

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Configuring the phone requires a tedious and long process of inputting setup information. Once this is done, it takes as long as 35 seconds to establish a connection to a WAP information server.

Moreover, these so-called WAP gateways are not always compatible. Technology developed by [Apion](#) of Ireland, for example, will work with phones from [Nokia](#) and [Ericsson](#), but won't work with [Motorola's](#), which feature different microbrowser software developed by [Phone.com](#). Connections often fail, and data are occasionally delivered scrambled.

Even when it works, wireless information can be extremely expensive: Sonera's tentative pricing model charges users the equivalent of 20 cents to transfer money and about \$1 for each real-time stock quote, while fees for news and other services are somewhere in between. And it is impossible to make a phone call while using these services.

For all the problems, however, WAP should not be underestimated. If the recent history of the Internet has taught something, it is that new technology offering a higher level of interactivity and mobility will spread quickly despite initial technical complexity and limitations.

Most of the technical issues will be only temporary. Phone.com has just announced that it is acquiring Apion, so the interoperability question should be solved soon. Almost every new cell phone sold next year will be WAP-enabled. Small peripherals and accessories that snap on to the bottom of the phones already allow users to listen to the radio or to play MP3 music files.

Despite the difficulty of typing on small cell phone keyboards, simple applications like text messaging have proven hugely successful over the last year, most notably among teen-agers. Companies like [Ericsson](#) (with iPulse) and [America Online](#) (with Instant Messenger) are already trying to move more complex features like buddy lists and instant chat into a wireless format.

Later on, third-generation network technologies, set to be rolled out by 2003, will speed up connections up to 2 megabits per second, 200 times the current transmission rate over digital cellular networks and 40 times the speed of a typical home computer modem.

At that stage, it is easy to predict that anything that can go mobile will go mobile, and the humble cell phone will turn into a multifaceted personal assistant, giving access to voice, messaging, news, digital imaging, video, databases and corporate information, electronic wallets, real-time automatic translation, data-heavy encryption, personal ID information and electronic commerce.

And Europe will be leading the mobile movement, overtaking the United States in mobile commerce. About one European in three has a cell phone, and it is expected that 60 percent will have one by 2003. The European wireless advantage stems essentially from its adoption of the Global System for Mobile Communication (GSM) standard, which is now deployed in over 100 countries, while the American cell phone market remains fragmented among different standards.

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Still, the industry has many challenges ahead, most notably developing trust and ensuring reliability. "Nothing of this will happen until the user can feel good with his phone," said Jorma Ollila, chief executive of Finland's Nokia. "We will become quite dependent on mobile phones in our daily lives, and we don't want to run into a situation to say, 'Sorry, my wallet ran out of batteries,' or 'My passport has no network coverage.'"

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