PACKET

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TECH

The Whole Web in Your Hands

PDAs and cellular phones face off in the nascent handheld Web-device market

There's a growing number of mobile professionals and techno-slackers who are looking for ways to get Web browsers off the desktop and into handheld computers. Sure, the Internet was built for desktop computers - in fact, it was built for black magnesium desktop computers with 17-inch black-and-white screens - but the Web has already grown way beyond its roots. There's a lot to be gained by shedding the monitor entirely and going mobile.

Why bring the Web to an Apple Newton or a US Robotics Pilot? Because once you've opened the spigot, there's a flood of information yearning to set traveling webheads free. With a handheld computer and a radio modem, you could access real-time traffic reports, look up the street address and phone number of the person you're trying to find, or pull up a map of the neighborhood. You could check your email. If you're traveling on business, you could even look up information from your company's intranet.

The two-way wireless data technology is actually good enough today to make wireless Web a reality. But a lot of other problems still need to be solved.

One of the biggest proponents of handheld wireless Web is Unwired Planet, a growing Silicon Valley start-up that's been building Web browsers for cellular telephones. Not surprisingly, the company is heavily backed by telecom giants like AT&T Wireless, Ameritech, and Bell Atlantic NYNEX Mobile, and by equipment manufacturers like Motorola, PCSI, and Qualcomm.

Unwired Planet's microbrowser is at the heart of PocketNet, a new service that AT&T Wireless is offering. The system requires a special cellular telephone that knows how to transmit and receive data on AT&T's Cellular Digital Packet Data (CDPD) network. The cell phone also has a few extra buttons: a Home button, a Back button, four arrow keys, and three multifunction buttons that can be labeled using the phone's LCD display. With a little patience and a lot of button pressing, you can use this phone to surf the Web and to send and receive electronic mail. At least, that's the theory.

The problem with this system is the phone's four-line screen. Forget about downloading HotWired's homepage. Hell, the first sentence of this column won't even fit on the phone's screen. So rather than try to translate overstyled HTML - with its matrices, GIFs, and stylesheets - into something that's intelligible on a cell-phone display, Unwired Planet has developed a new markup language called HDML, the Handheld Device Markup Language. Click Geek This to discover how Unwired Planet implements HDML.

HDML is just plain different from HTML. If you want to access a Web site using the PocketNet phone, the site first has to rewrite all its HTML files and CGI scripts to produce HDML instead of HTML.

Remove the Geek

Unwired Planet has optimized its HDML for display on handheld devices. The language allows the Web developer to create "cards" that display on the cell-phone's screen. Each card can change the labels associated with each of the cell phone's programmable buttons. The buttons can also be programmed to display new cards or fetch new HDML files.

This example from Unwired Planet's Web site shows a simple HDML snippet that displays a single-choice card on a cell-phone's screen:

```
<HDML VERSION=0.1>
   <CHOICE NAME=card1 KEY=cust>
     <ACTION TYPE="ACCEPT"
         LABEL="View" GOARGS=?mode=view>
     <ACTION TYPE="SOFT1"
         LABEL="Fax" GOARGS=?mode=fax>
     <LINE>Cust Status
     <CE VALUE=ord>Orders
     <CE VALUE=bal>Balance
   </CHOICE>
</HDML>
```

The image that's displayed looks like this:
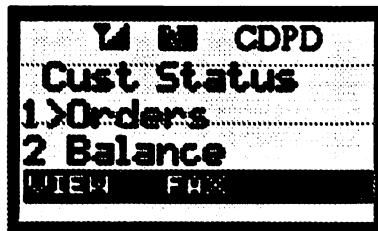
"The devices you are dealing with here have a user interface that is very, very problematic," admits Ben Linder, Unwired Planet's vice

president of marketing. "You are dealing with something that is text-only and is about 1/64 the size [of a standard VGA screen]. When you have that, HTML ceases to make sense: the UI model of HTML is unworkable."

Rather than letting you type just any URL, PocketNet comes with a preselected menu of services. My phone has DBC SportsSpot, an online movie-listing service, David Letterman's Top Ten list, an airline reservation service, a horoscope service, and, of course, FedEx and UPS package tracking. Despite being rewritten in HDML, none of these services is particularly user-friendly. In fact, their main purpose seems to be demonstrative, rather than informative.

PocketNet isn't really targeted to the consumer market ... yet. It's aimed at delivery services and repair fleets, which will be able to use HDML and mass-produced CDPD phones as an alternative to proprietary radios and portable computers. Police departments may use these systems to help a cop on the beat run down a license-plate number.

Instead of building Web browsers into cell phones, a better approach for the consumer market might be building the browser into palmtop computers, then slapping on a two-way radio modem like a Metricom Ricochet or a Megahertz AllPoints. Both Microsoft and Apple are taking that approach with their palmtop computer lines. Both systems come with PPP support so you can connect them to the Web using a regular phone line, a Ricochet wireless modem, or even a conventional cellular phone with a cellular modem. Once you've dialed up an ISP, the palmtop runs a traditional Web browser.

For example, Microsoft's Windows CE operating system comes with a copy of Internet Explorer built in. Despite the system's small screen, it does

a great job of displaying Web pages, from Packet to <u>CNN</u>. The browser even supports SSL, so I can buy a CD or a book over the Internet without exposing my credit-card number.

But I'm not a CE user, I'm a Newton user. Newton's new MP2000 comes with a built-in Web browser called <u>Net Hopper</u>, written by AllPen Software, but it isn't very good. It doesn't have SSL. It doesn't even support tables! Packet looks terrible!

Apple says Net Hopper is a "lightweight" Web browser that doesn't support tables because that's all you need when you're on the road. Unfortunately, since most Web sites are using tables for layout, this omission makes most of the Web pretty difficult to read - even if you only intend to read just a little bit.

I've also got a <u>US Robotics Palm Pilot</u> on my desk. It doesn't even *have* a Web browser.

Frankly, I'm worried. I think that Web browsers are becoming more important than ever for palmtop computers, because the Web gives information providers easy-to-implement standards for sending data to the masses. That gives Windows CE a huge advantage, and it takes these whiz-bang cellular phones completely out of the information market. It would be a shame to have a superior PDA or telephone lose out to an inferior palmtop just because it has a better browser.

Simson

Talk back to Simson Garfinkel in his column's <u>Threads</u>.

Illustration by <u>Dave Plunkert</u>