

The WAP Rap

I don't like theme parks. Never have, never will. But I have children. Very often, the price of children is a wife. Not always, but I'm a little old-fashioned that way. It was my wife who decided that on the Sunday of the Masters Golf Tournament, I was to "create a memory" with my children by going to a theme park.

I like golf. Always have, always will. But I have children. Golf and children don't mix, especially when a wife is involved. "No," I said, and I meant it. "There is no way I'm going to that stupid park."

It was a lovely drive to the theme park, on a nice sunny day, and a good time was anticipated by all. Even by me, because I had a secret weapon. I had brought along a WAP (Wireless Application Protocol) cell phone, with which I would be able to access the Internet. And I had bookmarked the WAP site for the Masters Golf Tournament.

My plan worked like a champ: free-minute weekends and up-to-date scores retrieved on my phone—all while I was shielded from the family by a six-foot teenager wearing a squirrel suit. The second I saw the first set of scores was an epiphany.

The WAP Technology

WAP has quite often been the victim of a rather poor assessment methodology: judging a technology by attributes it never claims to have. For this reason I come, cell phone and a sense of fairness (and golf tournament scores) in hand, to present another look at WAP, a.k.a. "Internet on the phone."

Please indulge me the luxury of clouding the WAP issue with a few facts:

1. WAP is a specifications set (referred

to as a *protocol*) that defines and describes the underlying workings of how Internet content is made available to handheld devices such as cell phones, personal organizers, and pagers. Some critics have suggested replacing WAP with a different protocol for wireless access, yet this will not significantly improve surfing the Web on a handheld device. We need to focus more on WAP devices and the WAP language (WML, or Wireless Markup Language).

2. Though critics have called WAP slow, this is misdirected blame. Speed is much more a bandwidth/bearer issue than a protocol issue.
3. Content consumers have little or no interest in the underlying protocol or in its status as a standard.

1. Devices and Language

Countless surveys have determined that user dissatisfaction with WAP is mainly ergonomic.¹ Yet no matter how content arrives, how fast it arrives, or what type of content arrives, a cell phone, personal organizer, or pager is still a small device. A small screen and an inadequate input method are problems of the device, not the protocol. Blaming WAP for the ergonomic problems is like blaming TCP/IP for the repetitive-motion injuries suffered by Web surfers.

Putting a WAP browser on a personal digital assistant (PDA) is best for addressing the ergonomics problem, especially regarding highly interactive applications like WAP-based e-mail. Yet even with more suitable devices, designers of WAP sites and applications should still consider their sites and applications as complementary to existing communications media. At the University of Georgia, for

example, we have created our WAP site with device limitation and other media in mind (though this is not to imply that our site is a paragon of design).² Our e-mail application includes a set of canned messages that can be e-mailed with a single keypress. News and sports are brief headlines and include an invitation to visit the corresponding Web site.

Providers of WAP browsers and services are aware of these usability issues. Openwave (the provider of Mobile Browser, formerly UP.Browser) offers WML usability and style guides, even reconciling differences between its Mobile Browser and Nokia's WAP browser.³ In addition, the M-Services Guidelines of the GSM (Global System for Mobile Communications) Association define new WML attributes to accommodate graphical and similar elements.⁴

Will these WML extensions make WAP look like a significant portion of the Web—that is, overly produced pages with unnecessary graphics, banner ads, and such cluttering up the services, content, and applications that users want? As you walk by a particular shop, your WAP phone, with audible text and vibrations, might beckon you with "10% off" ads. Remember, they'll know where you are. Scary thought, isn't it?

WAP users are also victims of the misguided intentions of wireless service providers. In some cases, we were simply misled by glittery advertising and unrealistic expectations. In other cases, the perpetrators were more insidious, providing on-the-fly HTML-to-WML translation. This may sound like a nice service, but it isn't.

Web sites are not WAP sites. Even though the two types of sites may share content, they have little in common regarding structure and presentation

(HTML pages versus WML cards). Using a WAP device to view a site designed for the Web is, in many cases, useless to the point of absurdity.

Delivering content to multiple devices should never be left to arbitrary translation. Content providers (myself included) have to devise ways and choose applications that deliver WML or HTML based on device characteristics. And these characteristics can easily be determined by the content server.



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2. Bandwidth and Bearers

WAP is bearer independent, meaning that it is designed to work with most wireless networks (CDPD, CDMA, GSM, and more). WAP is designed for the efficient use of bandwidth, utilizing binary transmission for greater compression of data and optimized for long latency and low to medium bandwidth.⁵

These attributes—bearer independence, latency accommodation, and data compression—make WAP ideal for 3G wireless networks. And 3G networks are certainly on the way. The upcoming Federal Communications Commission (FCC) auction of the 700 MHz frequency band, which is considered ideal for 3G networks, may well be only the beginning.⁶ The FCC has even more bandwidth up its sleeve, in the 2500–2690 MHz band.⁷

3. Which Standard, Whose Standard, and Who Cares?

Yes, I've read "The WAP Trap"⁸ And, yes, I do understand and appreciate the need for standards.

For those who haven't read the article, "The WAP Trap" says, among other things, that WAP is not an open standard, contrary to the claims of the WAP Forum (an industry group that defines WAP standards). In the Internet world there is a process that culminates in an RFC ("Request for Comments") publication. A published RFC becomes a standard, presumably because everyone on the planet has commented on the proposed standard. Since WAP is not a published RFC, the author of "The WAP Trap" claims that it does not qualify as a standard.

Oh, and publication as an RFC is a binding standard.

Right. If it is, then somebody needs to have a talk with that little

software company in Redmond, Washington.

Standards become standards not because they are declared as such. Standards become standards because they are universally accepted and applied: XML (WML is an XML application), HTTP (which delivers WAP content over the Internet to the WAP gateway/proxy), URL addressing, and MIME type definition.⁹ The WAP Forum has certainly created a new protocol, but it is one based on existing standards and optimized for the mobile environment.

What we as content consumers should be most concerned about is the topmost layer of the protocol, the Wireless Application Environment. This is where WML fits in, and this is where standards can be most compromised.

The lines are already being drawn. Openwave's Mobile Browser supports a set of its own extensions, and Nokia's browser has its own support issues. As mentioned earlier, even more extensions are on the way.

This all sounds strangely familiar, doesn't it? This sounds a lot like the Web browser wars between Netscape and Internet Explorer. But the WAP war is being fought on the battlefield (and the virtual golf greens) of the dreams of a handheld device.

Notes

1. "Corporate WAP Users Abandon Data," ITworld.com, May 24, 2001, <<http://www.itworld.com/AppDev/2815/Corporate-WAPuse415>> (accessed October 9, 2001). The summarized results from these surveys are typical.
2. Please visit <<http://www.uga.edu/wap/>> with a WAP-enabled device.
3. See <<http://developer.openwave.com>>. The "Top 10 Usability Guidelines for WAP Applications" is a nice touch.
4. Gustavo Martin, "The GSMA M-Services Guidelines," *WMLPulse Europe*, September 2001, <http://wmlpulse-europe.openwave.com/document.asp?document_id=76> (accessed October 9, 2001).
5. See the WAP Forum Web site: <<http://www.wapforum.org>>. This lists FAQs and several white papers. For those really interested in the binary compression and transmission of WML, see Bruce Martin and Bashar Jano, eds., "WAP Binary XML Content Format," *W3C Note*, June 24, 1999, <<http://www.w3.org/TR/wbxml>> (accessed October 9, 2001).
6. See the Auctions page on the Federal Communications Commission (FCC) Web site: <<http://www.fcc.gov/wtb/auctions/31/index.html>>. The auction is scheduled to begin on June 19, 2002.
7. "Third Generation ('3G') Wireless," <<http://www.fcc.gov/3G/>> (accessed October 9, 2001), has the tone of a sales pitch, but the reports are worth at least a quick look.
8. Mohsen Banan, "The WAP Trap: An Exposé of the Wireless Application Protocol," May 26, 2000, <<http://www.freeprotocols.org/wapTrap>> (accessed October 9, 2001). Keep in mind that this article was written for the Free Protocols Foundation, the initial developer of LEAP, a proposed alternative to WAP.
9. Fredrica C. Troni, "Wireless Application Protocol (WAP): A Perspective," *Datapro*, November 20, 2000 (online publication provided by The Gartner Group: <<http://www.gartnerweb.com/public/static/datapro/main.html>>, access may be restricted).

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