Free Protocols Foundation

and

LEAP (Lightweight & Efficient Application Protocols)

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Industry awareness and dissatisfaction with the shortcomings of WAP continues to grow. The latest contributor to the anti-WAP literature is Ms. Keri Shriener, whose article *WAP 2.0: Mature Enough for Flight?* recently appeared in IEEE Internet Computing.

In this article Ms. Schreiner describes the near-complete irrelevance into which WAP has been thrown by the recent announcement by W3C of XHTML. She also cites LEAP as a possible successor to WAP, and quotes extensively from Mohsen Banan, founder of the Free Protocols Foundation.

Ms. Schreiner's article is reprinted in its entirety below. The article is also available on-line at http://computer.org/internet/.

WAP 2.0: Mature Enough for Flight?

by Keri Schreiner

An estimated 1.3 billion people are preparing to go wireless in the next four years, and the minds behind the Wireless Application Protocol would like nothing more than to be the technological link between the wired and wireless Internet worlds. To that end, the WAP Forum has shown signs of bringing what it calls its de facto standard more in line with existing Internet technology. Whether such moves will result in WAP becoming a ubiquitous standard or a passing and expensive fancy remains to be seen. WAP opponents, who see the technology as a business construct dressed up in protocol clothing, are clearly envisioning the latter.

History Perspective(s)

The WAP Forum announced in September that the next-generation release of WAP, expected around June of 2001, will migrate to XHTML. Some view the move as an indication of WAP's pending irrelevance, while others see it as a natural next step in the protocol's evolution as a global standard. Chief among the latter is WAP Forum CEO Scott Goldman, who likens WAP "naysayers" to people who doubted the potential of air travel because the Wright brothers failed to fashion a Concorde.

"The people who think that WAP is transitional probably would have thought the first airplane was transitional because it wasn't a supersonic jet," says Goldman. "The fundamental technology of WAP – accessing Internet content via wireless device – is like the fundamental technology of the first plane – flying. Both started off as a fundamental concept and then evolved from there."

Goldman also uses the Netscape analogy to describe WAP's maturation, but some members of the Internet engineering community see a more likely analogy in technologies such as IBM's System Network Architecture. Mohsen Banan, founder of the Free Protocols Foundation, is optimistic that WAP will be displaced, perhaps by his own alternative Lightweight and Efficient Application Protocols (LEAP), but in any case by protocols developed through the open process favored by the technical community.

"In the late 80s, closed protocols were dominating the planet," says Banan. "But the Internet technical community kept on doing its work around the belief of free protocols and open source, and we won. IP now dominates the planet. I think in some ways history is repeating itself in the wireless world."

Defining Terms

WAP is the product of the WAP Forum, founded in 1997 by what was then Unwired Planet (now Phone.com) and cellular phone makers Ericsson, Motorola, and Nokia. It currently has more than 500 member companies, including

AOL, IBM, Intel, and Microsoft. The forum's founding goal was to find a way to send content over low-bandwidth networks to handheld device screens in a readable form. It met that goal with WAP and published specifications for the protocol in April 1998. However, WAP Forum's high membership fees and use of proprietary software in the protocols have raised the ire of people like Banan.

"The practical effect of patents is that if you were to build products or develop services around WAP, you have no way of knowing at a future time who might claim intellectual property with respect to the protocol and demand royalties from you," says Banan. "WAP claims to be an extension of the Internet, to be highly Internet-centric. In fact, it is not that at all. If it was supposed to be an extension of the Internet, then the protocols would have been part of the rest of the Internet protocols. But WAP Forum chose to work completely independent of existing Internet protocols. They reinvented everything essentially from scratch."

Among WAP Forum's reinventions is the Wireless Markup Language (WML), derived from XML but incompatible with existing HTTP content. Currently, content for WAP-enabled devices must be written in WML, creating what critics have called a "parallel" Web with all its inherent limitations. Goldman maintains that WML was not an attempt to complicate the Internet content paradigm, but merely to use the best technology then available to accomplish the WAP goals.

"If XHTML had been available when WAP was first developed, we would have pointed to that in the specification as the markup language of WAP," says Goldman, adding that because it wasn't, they had to "invent a language that did all of the things that are required of a wireless environment and device, and to take advantage of the strengths of wireless devices."

Although the problems of creating or translating content to WML will likely fade with the release of the XHTML-based version of WAP, other access issues are inherent in its architecture and, critics contend, the business motivations behind its conception.

The Other GATEs

A major complaint about WAP is its use of a gateway to translate requests back and forth between the WAP stack and the Internet stack. This gateway raises security concerns and also opens the door to control over user access to content. For device developers and network operators, the ability to control the small screen – to let users roam in a "walled garden" – presents obvious revenue opportunities. Although Goldman points out that the WAP specification advocates neither an open nor walled garden approach, he says that the latter is a legitimate choice in some circumstances.

"Walled gardens, although much maligned, can serve a purpose in helping a carrier pay developers for content, and for users who want to have a prepackaged set of options available for them on their WAP menus," says Goldman. "The open approach will appeal to a different set of users who are likely to be more knowledgeable about their options and savvy about the content they wish to access."

However, like the mediated design that makes access control possible, walled gardens violate the Web's end-to-end paradigm as well as user expectations of unrestricted Internet access. Jane Zweig, vice president of Herschel Shosteck Associates, a wireless analysis firm, says that WAP's model is unlikely to win the day because controlled content is "not what users want."

"In the wireless world, the WAP content just isn't proving interesting to people," says Zweig, adding that much of the WAP Forum's current activity is geared toward salvaging its member investments as it migrates closer to accepted standards. "When you get into an XML world, the WAP-based proposition holds much less value. So a lot of this is positioning to make sure that WAP continues in some fashion .... A lot of it is just to save face and make sure that there's some value left for people who've invested money in it."

Additional Information

1. For information about WAP's patent problems, visit **http://www.FreeProtocols.org**.
2. For information about the Lightweight & Efficient Application Protocols (LEAP), visit **http://www.LEAPForum.org**.
3. *The WAP Trap* document is available at **http://www.FreeProtocols.org/wapTrap**.
4. For *The LEAP Manifesto*, a 150-page document that describes our vision for the Mobile Messaging Industry, visit **http://www.LEAPForum.org/leap**.