WAP – The Patent Problem

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1 Background

The **Wireless Application Protocol**, or **WAP**, is a specification for wireless data communications using hand-held devices such as mobile phones and palmtop computers. Use of the WAP specification allows mobile devices to communicate with the Internet or an intranet, providing the users of these devices with mobile data communications capabilities such as web-browsing and e-mail.

The WAP specification was developed by the **WAP Forum**, an industry association of wireless device manufacturers, service providers, and software companies. For more information see the WAP Forum website at http://www.wapforum.org/.

2 WAP is not Patent-Free

WAP is being aggressively marketed by the WAP Forum as an open, license-free standard for wireless Internet access. However, WAP's viability as a standard is seriously compromised by a number of software patent restrictions. These include patents held by certain members of the WAP Forum itself, most notably Phone.com and Geoworks. Patent infringement claims have already been made by the holders of the following patents:

- U.S. Patent # 5,327,529 (Geoworks)
- U.S. Patent # 5,809,415 (Phone.com)

An essential attribute of an industry protocol is that there must be no restrictions on its usage. In particular, there must be no patent restrictions on the use of the protocol. The inclusion of patents in a protocol entirely corrupts its viability as a standard. A patent provides the patent-holder with a sustained and unfair market advantage. The losers are the industry as a whole, small companies, and the consumer.

The WAP Forum members know all of this as well as anyone. They are also surely well aware of the processes that can be used to ensure a patent-free result, and of the diligence commonly exercised elsewhere in the Internet community to work towards patent-free software and protocols.

Yet in spite of this the WAP Forum has created a patented protocol. This can only be because of deliberate intentionality on the part of the WAP Forum. They have used a fraudulent process to create a protocol which includes their own patents, and which they are now attempting to foist upon the industry at large.

3 Other Problems

In addition to being hobbled with patent restrictions, WAP also suffers from a number of other problems.

3.1 Technical Design Errors

The WAP specification includes numerous serious technical deficiencies. Many of these stem from a fundamental strategic design decision made early in the development process. Rather than treating cell phones as generic Internet host devices, the WAP Forum has opted to treat them as a unique special case. This has led them to develop an entirely new set of protocols, analogous to, but largely incompatible with, the existing Internet architecture.

For a detailed description of the design errors resulting from this, see the following articles:

- *W* Effect Considered Harmful*. Available at http://www.4K-Associates.com/4K-Associates/IEEE-L7-WAP-BIG.html.
- *Attacks against the WAP WTLS Protocol*. Available at http://www.jyu.fi/ mjos/wtls.pdf
- *The WAP Trap*. Available at http://www.freeProtocols.org/wapTrap.

3.2 Not Open in Terms of Development and Maintenance

The WAP specification has been developed by and remains under the exclusive control of the WAP Forum. Only WAP Forum members may participate in its development and maintenance. Given the WAP Forum's large membership fees, membership is unaffordable by most small businesses, and virtually all academic institutions.

There is therefore no assurance that WAP is subjected to adequate technical review, or that it represents the interests of the entire data communications community.

3.3 Not RFC Published

RFC publication of a protocol ensures its free, unrestricted and permanent availability. However, rather than being published as an RFC, the WAP specifications are self-published by the WAP Forum. The WAP specifications therefore do not carry these same assurances of free and permanent availability.

Also, the WAP Forum does not guarantee the stability of its specifications, reserving the right to change them without notice.

3.4 Not Generic Internet Access

There is a general perception that WAP will make the entire Internet content accessible via cell phone, just as it currently is via a conventional ISP. In order for a WAP device to retrieve information from a website, however, the site must have a WAP-enabled server, programmed to deliver the website content to the cell phone. So if a particular website is not WAP-enabled, it will probably not be available via cell phone.

3.5 Limited Web Browsing Capabilities

Use of the WAP specification to access web content requires the use of *WAP gateways*, operate by the Service Provider. This places a layer of control and authority between the creator and consumer of website content, greatly diminishing the potential for unrestricted and organic growth of the Internet.

4 Conclusion

The WAP specification is entirely unfit for the purpose being claimed for it. It is the result of a closed design process, remains tightly controlled by the WAP Forum, is crippled by patents, and is riddled with technical design errors.

Our conclusion is that the WAP specification is a bogus marketing construct, rather than a genuine engineering one. It is designed to provide short-term financial benefit to a minority of the WAP Forum members, rather than providing long-term benefit to the industry at large and the consumer.