Chapter 18
Mobile Internet:
Past, Present, and the Future

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ABSTRACT

The Mobile Internet is no longer a new phenomenon; the first mobile devices supporting Web access were introduced over 10 years ago. During the past 10 years many user studies have been conducted that have generated insights into mobile Internet use. The number of mobile Internet users has increased and the focus of the studies has switched from the user interface to user experiences. Mobile phones are regarded as personal devices: the current possibility of gathering more contextual information and linking that to the Internet creates totally new challenges for user experience and design.

INTRODUCTION

When the mobile Internet was launched in the late 90s it was claimed to be the Internet in your pocket. With hindsight, it is easy to say that this metaphor was not justified, as it did not take the user perception of the Internet into consideration. The huge Wireless Application Protocol (WAP) hype and hangover following the hype have been widely reported (for example, Pannanen (2000), Sokela (2002), and in a 2000 Znet article). This disappointment after such high expectations made it impossible to take WAP seriously in later years. WAP had become merely a joke, albeit many network operators kept on developing services on the WAP protocol (Kaikkonen 2005), and made revenue on these services as increasing numbers of users used these services. For user experience experts it became clear that the technology and protocol behind a service do not really matter to users; what is more important is what you can do with the services. The success of iMode in Japan is well known, but it is rarely mentioned that other Japanese operators, like KDDI, built
their successful mobile Internet offering on the WAP protocol.

Was WAP a waste of time and effort? The question in itself is not very interesting—it is more interesting to ask what we learned from the first years of WAP. Are these lessons sufficiently valuable that we can consider WAP as a useful—and necessary—step along the path to effectively offering Web access on mobiles?

It does not make sense to ask if we should still have WAP or other mobile-tailored Web support on mobile devices; instead, we should be asking *when do we need mobile-tailored content on mobile devices and when is full Internet content needed?*

**DID WE LEARN ANYTHING FROM WAP THAT WE CAN USE IN THE FUTURE?**

During the first years of WAP, many researchers published papers related to user interface (UI) design and usability—for example, Buchanan *et al.* (2001), Chittaro and Dal Cin (2002), Kim *et al.* (2002), Kaikkonen and Roto (2003), and Hyvärinen *et al.* (2005), amongst many others. In addition to technology and protocol information, such papers also contain generic information related to the usability of, and design for, small screens and spotty networks; this generic information can certainly inform the future design and evaluation of any services targeted at small screens.

Another obvious lesson is not related to user interface design or usability, but rather to how important it is to take user expectations and mental models into consideration. The disappointment portrayed by the media in early 2000 reflected the mismatch between the message and user perception. In the midst of the hype, analysis of the reasons for the hype took second place to market messages. The companies developing mobile technologies are not, however, entirely to blame; critical public reviews were, in general, pretty rare. The public message on the mobile Internet in Europe and North America failed to take into consideration the perception and mental models of users. The situation in Japan and South Korea shows that the problem was not entirely related to network and device limitations, but was, instead, more complex. When the mobile Internet became available in Japan, the Internet penetration was fairly low (13.4% in 1998) and mobile phone penetration high (57.7% in 1998); as a result, most users did not have a clear perception as to the Internet per se, and so the local operators were able to advertise the mobile Internet by highlighting its benefits. At the same time, Western operators and technology developers continued advertising WAP with gimmicky technical terms. These lessons are not unique to WAP, but they clearly show that you should know your audience, its perceptions and values, and match your message to these!

**WHAT IS THE MOBILE INTERNET?**

The Mobile Internet can be described in many different ways. To illustrate its diversity, I have chosen 4 studies on mobile Internet use, all of which were published during 2008. The description of the mobile Internet in these papers gives a good impression of how differently the topic can be approached. Cui and Roto (2008) studied mobile Web usage and seem to define use of the Web on mobiles as viewing Web pages with mobile browsers; this covers both mobile-tailored and full Web content. Hinman *et al.* (2008) compare mobile and PC Web use in the context of a PC deprivation study. In this study, the use of the mobile Web is mainly related to full Web site use on mobiles. Taylor *et al.* (2008) seem to perceive the mobile Web as mostly providing more relevant, mobile-tailored services.

The fourth definition of the mobile Web combines all three of the previous approaches: Kaikkonen (2008) defines the mobile Web as any access to the Internet via a mobile device—this approach is rather presenting Internet access