An investigation into initiatives and standards, aiming to improve the user experience of mobile web applications

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Abstract

The way in which online material is accessed has changed considerably over recent years, due largely to the widespread uptake of mobile devices, capable of online connectivity, such as mobile telephones and PDA's. This paper aims to briefly investigate the standards and initiatives aiming to push the user experience of online content (mobile web applications), accessed via mobile devices, to the same level as currently exists with standard web applications accessed via desktop computers.

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With the introduction of hand-held devices, many enterprises have felt it necessary to develop versions of their existing web-based applications which can be accessed via this increasingly popular means, as the importance, and frequency of use of mobile devices, for accessing online content, is set to increase considerably over the coming years, "*studies show that most of the traffic in the future wireless networks will be produced by mobile multimedia services which are expected to proliferate by the year 2010*" (Kyriazakos, Soldatos and Karetsos, 2008). In comparison to established means of web access, such as the standard home PC, web applications intended for access via a mobile device must be developed differently from standard web applications in order to address certain limitations inherent in the devices. These limitations are primarily found in the relatively small screen sizes of mobile devices, their limitations for navigation and data input, and the costs and speed associated with data transfer on mobile platforms. These limitations give rise to the need to approach page design in a manner that differs from that used for pages intended to be viewed on a desk top computer (MWBP 1.0, 2008). Mikhalenko (2006) provides a discussion of the limitations of mobile devices in comparison with desk top computers, although some of his reasons for these limitations are no longer valid due to technological advances.

Standards and Initiatives

In 2005, as part of its Mobile Web Initiative (MWI), the World Wide Web Consortium (W3C) chartered the Best Practices Working Group (BPWG), with the aim of developing a set of technical standards and best practices to support the development of mobile web pages (Mobile Web Best Practices Working Group, 2005). The goal of the broader scoped MWI is simply to simplify web access form mobile devices (MWI, 2005).

The BPWG devised a set of recommendations which provide content authors and web developers with a set a guidelines that facilitate the generation of content accessible from a range of devices (MWBP 1.0, 2008). The BPWG's current focus is on the best practices

pertinent to "traditional" browsing, although, in the future the group will widen its viewpoint to take account of emerging multimodal technologies. (MWBP Scope, 2005).

Implications of Initiatives and Standards

In the respect of IT, all standards and initiatives are introduced to provide a framework from which developer's can create consistent products, so that users feel a degree of familiarity with the product. In addition, standards greatly improve the interoperability of technology, for example, if a developer knows what the minimum hardware requirements to which a mobile telephone is made, the developed mobile web application has a "base" level which it must meet. To address this issue the MWBP includes a "Default Delivery Context" (DDC) the aim of which is to share a consistent view of the default mobile experience amongst providers and mandate the minimum specification necessary for a reasonable experience of the web (MWBP 1.0, 2008). In essence this means that the DDC outlines the mobile hardware capabilities required to provide a decent user experience of mobile web applications, although it is recognised that devices which do not meet this specification can still provide a reasonable experience of other non-Web services (MWBP 1.0, 2008). The DDC provides mobile hardware manufacturers with a baseline specification that their product should meet, should an intended use of the device be using mobile web applications.

Future of Standards and Initiatives

With the recent introduction of "4G" (4^{th} Generation) mobile networks, the focus of network and infrastructure development has shifted to the development of improved data mobilisation technologies Golding (2008). Developments within mobile devices have been associated with the utilisation of these enhanced mobile infrastructure networks. Indeed these newly emergent technologies are enabling the creation of mobile web applications which provide a much improved user experience. Conversely these new technologies make the task of standardising online content such that it is suitable for mobile devices more difficult. We feel that, as time goes on, developers will most likely create applications for the mobile platform(s) which their target user is most likely to own/use. We feel that it would be a good

idea if the MWBP catered for various geographical regions, as a user in an undeveloped country will be less likely to own a high spec mobile device, whereas in developed western countries the opposite applies. This would then provide mobile web application developer's with the choice of a target region to develop for, therefore improving the user experience based upon the expected device capabilities from the various regions.

References

Mikhalenko, Peter (2006). [online]. *Best practices for mobile Web application development.* Last accessed 26 April 2009 at http://articles.techrepublic.com.com/5100-10878_11-6095452.html

MWBP 1.0 (2008). [online]. *Mobile Web Best Practices 1.0.* Last accessed 26 April 2009 at http://www.w3.org/TR/mobile-bp/

Mobile Web Best Practices Working Group (2005). [online]. *Mobile Web Best Practices Working Group.* Last accessed 27 April 2009 at http://www.w3.org/2005/MWI/BPWG/

MWI (2005). [online]. *W3C Mobile Web Initiative – The Web on the move.* Last accessed 27 April 2009 at http://www.w3.org/Mobile/

MWPB Scope (2005). [online]. *Scope of Mobile Web Best Practices.* Last accessed 27 April 2009 at http://www.w3.org/TR/mobile-bp-scope/

Golding, P. (2008). *Next generation wireless applications.* 2nd ed. Chichester, Wiley. ISBN: 978-0-470-72506-1

Kyriazakos, S. and Soldatos, I. and Karetsos, G. (2008). *4G Mobile & Wireless Communications Technologies.* Aalborg, River Publishers. ISBN: 978-87-92329-02-8