Chapter X

Usability Issues and Limitations of Mobile Devices

Suliman Al-Hawamdeh, University of Oklahoma, USA

ABSTRACT

Due to the fast development of mobile technologies and wireless communications, more people are using mobile devices. Mobile devices like cellular phones are initially used for data communications, as in speech. Now, mobile devices are not only portable but also can be used to communicate and exchange information as well as gain access to remote services anywhere, anytime. But while mobile devices offer many opportunities for e-commerce applications, conducting e-commerce transactions over mobile devices has its limitations. Limitations include limited memory, limited processing power, different technologies and standards, small keyboards, and small screens. A usability study was carried out to determine the extent to which mobile devices can be used
Most of the studies showed that while mobile devices are becoming increasingly popular with the younger generation, users still prefer to use desktops for e-commerce transactions. This is mainly due to the limitations of mobile devices and the stability and security of the wireless networks.

INTRODUCTION

Mobile devices are getting better every day. Over the past few years, the world has seen an explosion of new devices like cellular phones, Palm Pilot, Pocket PC, and Auto PC. Mobile applications can now be developed to deliver different types of information to users around the world. Different mobile devices support different programming languages, such as WAP, WML, HTML, and Java. WAP is a global specification that allows mobile users to access information and services instantly through wireless devices (http://www.wapforum.org). The NTT equivalent to the WAP protocol is i-mode®. NTT DoCoMo first introduced i-mode in Japan in February 1999, and as of today, it has more than 15 million users (http://www.nttdocomo.com). Unlike i-mode, which is available only from NTT DoCoMO in Japan, WAP is offered by many competing organizations throughout the world.

A major difference between the WAP and i-mode is that WAP runs WAP protocol, while i-mode runs on HTTP protocol. Development in WAP encompasses languages such as WML and WMLScript. In i-mode, the markup language used is cHTML (compact HTML). cHTML requires a cHTML gateway before a site can be accessed by users from their i-mode-compatible mobile phones. Similar to WAP, the underlying network technology does not matter. As such, the underlying network technology can be shared with Internet Web sites. Another application development language differentiate between WAP and i-mode is that while WAP uses cards to display WAP pages, i-mode does not facilitate the use of cards. This difference in concept is due to the different standards that have been adopted by WAP and i-mode. While the use of WMLScript can be difficult in the sense that missing or incorrect tags could crash the whole application, the use of cHTML is friendlier. The i-mode is able to display rich GIF and JPEG images, tables, multiple font types and font sizes, background colors, and style sheets on its browser. This is unlike WAP, which only displays WBMP images to WAP browsers.

WAP is a joint standardization effort for converging Internet and value-added services (VAS) to wireless devices like mobile telephones, pagers, and...
Related Content

Need of Algorithm Selection in Next Generation Optical Networks

Basics of Telecommunication Management
[www.irma-international.org/chapter/basics-telecommunication-management/21684/](www.irma-international.org/chapter/basics-telecommunication-management/21684/)

Study of Some New Topologies and Associated Techniques Used for the Achievement of Planar Filters
[www.irma-international.org/chapter/study-of-some-new-topologies-and-associated-techniques-used-for-the-achievement-of-planar-filters/164165/](www.irma-international.org/chapter/study-of-some-new-topologies-and-associated-techniques-used-for-the-achievement-of-planar-filters/164165/)

An Approach to Solving the Survivable Capacitated Network Design Problem
[www.irma-international.org/article/approach-solving-survivable-capacitated-network/1402/](www.irma-international.org/article/approach-solving-survivable-capacitated-network/1402/)

Global Regulations in Content Industries: The Google Privacy Policy as a News Gatekeeping Factor
[www.irma-international.org/article/global-regulations-in-content-industries/204575/](www.irma-international.org/article/global-regulations-in-content-industries/204575/)