Mobile phone Vs PC Internet Browsing in Jordan

Firas Omar, Steve Love
Department of Information Systems and Computing
Brunel University, Uxbridge, Middlesex, UB8 3PH
firas.omar@brunel.ac.uk

Abstract: Mobile internet technology is spreading day by day around the world. The importance of such technology relates to its ability to allow access to the internet any time or any place. Despite the progress made in the mobile internet field, there are still some difficulties in using it. Some of these difficulties are connected directly to the mobile usability issues such as the screen size, input method and font size. Other difficulties are related to the experience in using such technology. This research aims to find out the main boundaries and obstacles which limit the use of mobile handsets as an internet platform. The research aim extends to studying the effect of cultural issues on people's use of the internet on a mobile phone. The research reported here is based on participants from the Hashemite Kingdom of Jordan.

Usability, Stationary Tools, Mobile internet, HCI

1. INTRODUCTION

Many researchers have predicted that in the future most people will access the internet using mobile devices. This will be due to the flexibility they offer people to connect to the internet at anytime or anywhere (Buchanan, et al. 2001; Cui 2008). As a trial to validate this, an initial study was conducted in the Hashemite Kingdom of Jordan (HKJ). HKJ has been selected because it has been observed that there is currently a very low uptake of people using their mobile phones to access the internet. The study evaluated people's attitude towards accessing the Internet using mobile phones (Kaikkonen, 2008).

It also aimed to investigate the factors that prevented them from using mobile phones to access the Internet compared to using normal stationary tools, such as desktops (PCs) and laptops. (Yesilada, et al. 2010) The study used a questionnaire that was posted to 40 participants. One of the questions in the questionnaire asked participants to list 3 reasons why they would not access the Internet using their mobile handsets. Results clearly showed that participants had problems accessing the Internet using their handsets compared to normal stationary tools (PC and Laptops. Problems are mainly categorised in terms of ease of use and usability issues such as size of the mobile phone screen size (Weiss, 2002; Heo et al. 2009). This highlights an issue which users in the HKJ are currently experiencing. They

are at an "in-between stage" between using their mobiles as an Internet accessing platform, which offers them the flexibility of anytime and anywhere access, and ordinary Internet access methods, including the PCs with all of its restrictions. (Buchanan, et al. 2001)

This paper proposes a study based on the results obtained from the initial research study. This second study aims to investigate in more detail the reasons why users favour PC-based Internet access rather than mobile phone-based internet access. Some of these reasons are related to culture issues rather than related to the technology itself.

2. THESIS STATMENT

The aim of this research is to explore and discover the main issues and reasons that lead users to favour using standard methods and techniques over mobiles for Internet activities in the HKJ. More precisely, the research will focus on usability aspects and their role in the limited uptake of mobile phone usage for the Internet activities. The findings of this study might highlight key usability concerns for mobile Internet technology use around the Middle East and northern Africa which share lots of cultural characteristics with users in Jordan. In addition, the research aims to propose a set of design recommendations and protocols for the development of Mobile Internet applications and

services that take into consider the salient cultural characteristics of countries such as the HKJ.

3. APPROACH

To achieve the broad aim of this research, it was important to conduct an initial study to clarify the problem. Therefore, the first step of this research was to develop and validate a questionnaire to gain information on the problem area. The next stage is to try to address the issues generated from the results obtained from the questionnaire. This will highlight the main obstacles and barriers to mobile Internet use in Jordan. This will be the focus of the next study as part of this PhD research. Participants will be selected on the basis of their internet usage (e.g. people who categorise themselves as heavy Internet users for business purposes).

Selecting participants as random as possible from different age categories and gender will be taken into consideration at participant selection stage. The minimum number of participants should not be less than 30; no upper limit is required, however. The lower limit is more important because it allows the use of the central limit theorem and the normality of data assumption at the statistical analysis stage.

The experiment will be divided into three parts. In the first part, participants will be asked to perform specific internet browsing tasks on a PC desktop. This represents the traditional Internet access method. The second part of the experiment will require participants to perform specific 5 internet related tasks using a mobile handset. Participant's use of the desktop and mobile handset will be randomised to control for any possible order effects.

Performance will be measured by the time taken to complete each task. Finally, participants will be asked to complete a usability questionnaire which according to (Lee et al, 2004) considered to be feasible in order to help discovering differences between PC desktop and mobile phone internet access at the end of the experiment. Participants will be observed while completing each task of the experiment.

4. LITERATURE

Usability can be defined as the efficiency, effective and satisfaction in which users of a certain technology or application are capable of achieving exact aims. (Nielsen, 1993) Attributes of usability can be categorised into learnability which is measured by how far it is easy to learn how to use the system; efficiency, which is considered by how fast and quick to complete the task by the users; memorability which is measured by how easy the system to be remembered; control of errors

including recovery and prevention and satisfaction which is considered by how far would the user favour the system. (Evelyn and Hake, 2003). However, as technology applications and services are increasingly used and shared across continents, the impact of culture is an important aspect of usability that must be considered too. Culture can be defined as a group programming of mind which differentiates the members of one group of people from another (Hofstede, 2001). Additionally, culture cannot be clearly understood by studying a single person or individual. Alternatively, it can only be dealt with as a set of shared characteristics within a group of people that affect the behaviours of individual members by providing rules for that group (Choi et al, 2005). Uncertainty-avoidance could be defined as the degree to which the members of a culture feel threatened by uncertainty along with their keenness to avoid such situations (Hofstede, 2001; Jones and Marsden. 2006). People in high uncertainty-avoidance cultures view uncertainty as dangerous and show a low acceptance for risk. They avoid uncertain situations by believing in absolute truths and knowledge which could be gained by seeking stability and rejecting unusual ideas and behaviours. At the opposite side, people in low uncertainty-avoidance cultures deal well with ambiguity and can be classified as risk takers. Uncertainty-avoidance possibly has a significant behaviour on the use of mobile data services. Users from a culture that tends toward uncertainty-avoidance are more likely to avoid using mobile services when the quality of service is uncertain or uneven compared to that of traditional internet services (Hofstede, 2001).

5. LIMITATIONS OF MOBILE INTERNET IN JORDAN

It is well known that the process of adopting new technologies has obstacles and problems to overcome before it reaches a stable point in terms present, a lot of people prefer to use ordinary desktop PC and laptop internet browsing rather than mobile handset internet browsing for reasons such as:

- Usability issues (Screen size, font size, technical issues with local websites browsed on mobile handset).
- Avoidance of trying something new (uncertainty avoidance).
- Price of the service (normally it is expensive to have internet on mobile handset in HKJ).

6. QUESTIONNAIRE

To gather subjective data, an 18 likert scale type questionnaire was designed to be used in this

study. Likert scales are usually used for measuring opinions plus it is used widely for measuring attitudes and beliefs. A number of advantages were proposed by (Coolican, 2004) for using a Likert scale: it has been shown to have a high degree of validity and reliability; it has been shown to be effective at measuring changes in attitude over time and it is more natural to complete and maintains the respondent's direct involvement. Scales usually range in likert scale from 1 to 3 points and it could reach a maximum number of 1 to 9 points. On the other hand, it is generally agreed that having a neutral midpoint by using scales of 1 to 5 or 1 up to 7 with a neutral mid point of 3 is know to be the most effective method according to (Love, 2005 ; Dix et al., 2004).

Therefore for this study, it was decided to proceed with the 1 to 5 scale because of its effectiveness. In order to assess the validity of the questionnaire used in this experiment, Cronbach Alpha test was used and the questionnaire was adapted accordingly based on the results of this analysis.

7. AIM AND HYPOTHESIS

The aim of this research is to investigate the reasons behind the limited use of mobile Internet in HKJ. The hypothesis for this study is that there will be differences in browsing internet on both mobile handset device and desktop PC computers.

The null hypothesis of this experiment is that there is no difference between Internet browsing on both PC and mobile handset device regarding the time required to achieve a browsing task and user attitude.

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