Chapter 38
An Empirical Study of the Effect of Internet Services on the Preferential Adoption of Mobile Internet

Mohamed Abdalla Nour
University of Sharjah, UAE

ABSTRACT

The revolution in wireless and cellular communications has led to a remarkable growth in smart mobile cellular devices capable of Internet access and mobile web browsing. This study empirically examined the emerging role of the mobile Internet as an alternative access channel for a growing list of applications and services. Based on a survey of 220 undergraduate students in a major university in the Middle East, we developed and tested a model where the mobile advantage of e-communication, e-transactions, e-entertainment, and e-learning were posited to influence the choice of Internet access channel, mobile or stationary. The results indicated that e-communication, e-transactions, and e-entertainment significantly influenced the choice of Internet channel, whereas access to online learning resources and services did not have such an effect. Moreover, the study did not find any significant effect of gender in this preference, pointing to the declining relevance of the gender digital divide. Some theoretical and practical implications of the results are discussed.

INTRODUCTION

The advent of the third generation (3G) cellular networks, with tremendous increases in transmission capacities, has accelerated the convergence of the Internet and wireless telecommunications and networks. The Internet is thus becoming increasingly mobile and user-centric, with mobility, ubiquity, and anywhere/anytime flexibility characterizing the new mobile Internet. With the 4G communications technology in the making, the future potential of mobile communications in general, and mobile Internet in particular, seems to be enormous. Whereas existing 3G cellular networks support up to 2Mbpds data transfer

DOI: 10.4018/978-1-5225-2599-8.ch038

speed (Chong, Darmawan, Ooi, & Lee, 2010), the next-generation 4G cellular networks are envisioned to be truly broadband systems, allowing for significantly higher transmission, ranging from 10Mbps to 100Mbpds (Dekleva, Shim, Varshney, & Knoerzer, 2007), and providing global roaming across multiple wireless and mobile networks (Varshney & Jain, 2001). Research and trade reports suggest continuing dramatic and revolutionary technical trends with seemingly inevitable destiny: mobile Internet overtaking wired (fixed) Internet, with the smart phone being the primary driver of this dramatic shift (Cerf & Euchner, 2011; Cortimiglia, Ghezzi, & Renga, 2011; Hurlburt, Voas, & Miller, 2010; Koenig-Lewis, Palmer, & Moll, 2010).

Taking advantage of the concomitant advancements and improvements in cellular and wireless telecommunications, mobile devices continue their unabated evolution, proliferation, and diffusion. Mobile phones in particular are increasingly becoming miniature computing devices, with processing power and storage capacities that ravel desktop computers of a few years ago. Smart phones are a special type of these devices with integrated features that include voice communication, music and video players, mobile TV, cameras, voice recognition, browser capability for Internet access, among a growing list of advanced and innovative mechanisms and capabilities (Hurlburt et al., 2010).

As mobile devices (including tablets and smartphones) continue to increase in annual shipments, the PC is now in decline (Arthur, 2013). Smart phones represent the fastest growing type of mobile devices, with the actual total annual global shipments of smart phones in 2011 exceeding those of client PCs (including pads) for the first time in history (Canalys, 2012). Moreover, the penetration rates for mobile phones and mobile broadband continue to rise worldwide and in several economies in the developing and the developed worlds (International Telecommunications Union, 2013). High penetration rates are occurring even in developing nations, such as China, Malaysia, Indonesia, India, and many of the gulf countries, supported by significant investments in 3G infrastructures, as is the case in the United Arab Emirates (see Table 1 below for comparative penetration rates for mobile cellular and mobile broadband services).This proliferation of mobile phones has propelled an enormous growth in mobile phone applications, which are growing faster than desktop (fixed) Internet applications (Koenig-Lewis et al., 2010). Undoubtedly, the growing range of ramifications of this rapid transition to wireless connectivity is potentially extensive and not fully understood, partly because the underlying socioeconomic and behavioural changes induced by the new wireless and mobile networking environment are constantly developing. Of particular interest to the current research is the concurrent transition to the mobile Internet platform and the factors that drive this transition.

The diffusion and widespread use of high-end mobile devices have fundamentally affected the way people learn, interact, and socialize (Srivastava, 2004). An increasing proportion of these devices are now Internet capable, and mobile broadband access to the Internet through these mobile devices is a significant trend (Cerf & Euchner, 2011). Although some research studies suggest that consumers see mobile Internet as only a supplement rather than a substitute to the fixed (wired or stationary) Internet (Anckar & D'Incau, 2002; Jung, 2009), and other studies suggest similar consumer surfing behaviour and activity across the two Internet channels (eMarketer, 2013), there are many predictions that, within a few years, more users will connect to the Internet from mobile devices than from desktop PCs (Cerf & Euchner, 2011; Hurlburt et al., 2010; Koenig-Lewis et al., 2010; Schilit, 2011; Srinuan, Srinuan, & Bohlin, 2012). With the year 2002 marking the turning point in the evolution of mobile communications when the total number of mobile subscribers overtook the number of fixed lines in a global scale (Srivastava, 2004), it has become increasingly clear that the mobile nature of communications and computing