Impact of Prior Usage Experience on the Intention to Adopt 3G Mobile Service for the Youth in Hong Kong

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ABSTRACT

Third generation (3G) mobile service has been launched for several years and yet the information systems (IS) community has not yet gained a full understanding of how various technological and social factors affect the intention to adopt this technology. This study probes into this issue using the Innovation Diffusion Theory (IDT) (Rogers, 1995) along with two other constructs, i.e., subjective norms and perceived security on 3G mobile service. Using survey data collected from the youth of Hong Kong, the author notices that observability and complexity are IDT factors that affect the intention to adopt 3G mobile service by experienced users, i.e., who are current users of 2G or 2.5G mobile service. Plus subjective norms and perceived security are factors considered by both experienced and inexperienced users. Recommendations are provided to mobile service operators and developers in developing their rollout strategy in the mobile service market.

Keywords: Innovation Diffusion Theory (IDT), Intention to Adopt, Mobile Business (M-Business), Perceived Security, Subjective Norms

INTRODUCTION

Mobile service is one of the most commonly used communication technologies for individuals and the business world nowadays (Raisningarhani, 2002; Robins, 2003). In recent years, we have seen various business sectors using mobile service as a channel to promote and delivery their products and services to their clients. For example, from a marketing perspective, we see shopping malls delivering e-coupons to their shoppers via text messages once they arrive at the malls, which are a very effective way to enhance shoppers’ intention to purchase (Tsang et al., 2004). From an e-business perspective, we see Business-to-Consumer (B2C) e-commerce vendors using mobile auctions to auction their goods and services (Tang & Forster, 2007) to their customers. Mobile service also has an impact on education as educational institutions now use mobile devices to support their distance learning programs (Varshney & Vetter, 2002) and to supplement their traditional teaching programs (Ho & Ho, 2011).
Mobile devices, such as third generation (3G) cell phones, smart phones, and personal data assistants (PDAs), are useful handheld devices for our daily lives. These devices enable us to perform various daily tasks while mobile, ranging from mobile banking (m-banking), multimedia web-surfing, to mobile commerce (m-commerce), via 3G high-speed data transfer capacity (Balasubramanian et al., 2000; Tang & Forster, 2007). The two commonly used 3G mobile service standards, UMTS and CDMA2000, support a higher data transmission rate and offer an increased bandwidth capacity compared with the earlier versions of mobile service standards, i.e., 2G or 2.5G, which used either the TDMA-based standard or the CDMA standard. Software developers make use of the increase in bandwidth of 3G mobile service standards to develop new applications for these 3G handheld devices, such as multimedia services and Internet applications. These 3G handheld devices can provide both supreme services to their users and can provide numerous commercial opportunities for different facets of business organizations, which range from software development, marketing, to manufacturing industries (Varshney & Vetter, 2002).

Since the launch of 3G mobile service, information systems (IS) researchers have been attracted by its high-speed data transfer capacity which would enable m-business and m-commerce. For example, Nohria and Leestma (2001) opined that m-commerce would provide huge opportunities for companies if they could develop suitable applications for their customers. Plus, m-commerce presented huge challenges to the software developers and marketers. Frolick and Chen (2004) examined business opportunities created by the mobile networks. They listed out some important characteristics, which mobile service providers should consider when they implement m-commerce programs. In particular, they suggested that the service providers think carefully whether they would like to be the “first-mover” in providing m-commerce programs in the market, to identify suitable mobile applications before their selection of the mobile devices, and to choose the technology that fitted their mobile operation. Last but not least, they reminded m-commerce operators to design their rollout strategy based on analyses grounded on the technology acceptance model, TAM (Venkatesh et al., 2003) and innovation diffusion theory, IDT (Rogers, 1995).

While there are quite a number of studies conducted in analyzing the rollout strategy of m-business using the TAM (for example, Fang et al., 2006; Hong & Tam, 2006), there are not too many studies using the IDT to analyze the same issue. Thus, the aim of our study is to investigate how the IDT constructs interact with the users’ intention to adopt 3G mobile service. With the recently development of the fourth generation (4G) mobile service, it is now the appropriate time to reinforce our understanding of how different constructs affect the intention to adopt 3G mobile service. This can help the 3G and 4G mobile service operators to develop a better rollout strategy on their m-business in the coming years. Apart from using the standard IDT constructs, i.e., trialability, relative advantages, complexity, compatibility, and observability, in our analysis, we also include two constructs, i.e., subjective norm (Tan & Teo, 2000) and perceived security (Fang et al., 2007) into our model. It is because these two factors have been shown to have significant impacts on the intention to adopt technology. Plus, we also investigated those factors affecting users’ decision to switch from their current version of mobile service to the latest version, which would affect the success of a new service (Lee et al., 2003). To sum up, we are interested in two research questions:

1. What are the factors affecting users’ intention to adopt 3G mobile service under the premises of Innovation Diffusion Theory (IDT)?
2. What are the factors affecting 2G and 2.5G mobile service users’ intention to migrate and to adopt 3G mobile service under the premises of Innovation Diffusion Theory (IDT)?
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