Chapter 62
Exploration of Location–Based Services Adoption

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ABSTRACT

The purpose of this chapter is to explore aspects of user perceptions of their use of location-based services. As mobile technologies become more ubiquitous in the general population, it is reasonable to assume that individuals will consume services and software to enhance their aspirations and entertainment desires. This study begins by constructing a location-based service prototype simulation. It then conducts an experiment and analysis based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model. A survey was developed to extract usage information from participants, followed by an analysis of the results using PLS. The analysis shows significant indicators that suggest behaviour patterns of early adopters of location-based services are being observed. This chapter applies the UTAUT model using a location-based service experiment to understand the underlying perceptions of individuals who may adopt location-based services. The authors study the effects of multiple parameters on the use of a location-based service simulation. Through this simulation and a following survey, current perceptions of LBS are investigated and insights gained.

INTRODUCTION

With the increasing demand for mobile computing devices, individuals are becoming important factors in the consumption patterns for mobile service providers. As such consumption emerges it challenges the understood tenants of main stream organizational based information systems development (Tuunanen, Myers, & Cassab, 2010). The individual consumer will configure their mobile device to suit their own

personality and aspirations for entertainment and information needs (Ritu Agarwal & Elena Karahanna, 2000; Hill et al., 2002; Pihlström, 2007; Westbrook & Oliver, 1991). Such consumption is highly volatile, it is dynamic and focuses on the instant needs of the individual. Furthermore, it is highly influenced by social pressures.

The increased ease of constructing push service technologies for mobile devices will increase mobile services offered to consumers (O'Connor & Godar, 2003). One such area is location-based services (LBS). These were initially identified as having the potential to offer great growth for mobile industry (Mountain & Raper, 2001). Despite their early failure (May, Bayer, & Ross, 2007), LBS are making a comeback due to the emergence of new mobile phones with increased processing power, high-resolution colour screens, faster data connections, high performance positioning technologies, and a greater emphasis by the telecom operators on data services (May, et al., 2007). The use of LBS is increasing. In the United States, 74% of smartphone owners used LBS, and 18% use LBS to "check-in" or share their location with their friends with LBS applications such as Foursquare or location sharing services through Facebook (Zickuhr, 2012). We also note that mobile service development has become more widely accepted and is therefore included in several mobile software development platforms, for example, Apple, released a Software Development Kit (SDK) in 2009 with built in support for push service provision. Small as this may seem it indicates the recognition of mobile service software as an emerging market for the future.

Mobile service providers need to understand the factors affecting user adoption in order to understand consumers usage behaviour (Zhou, 2013). We attempt this by applying the unified theory of acceptance and use of technology (UTAUT) model (Venkatesh, Morris, Davis, & Davis, 2003) using a LBS prototype to understand the underlying perceptions of individuals who may adopt LBS. This leads to our research question of *what influences users to adopt LBS based mobile services?* In doing this, we study the effects of multiple parameters on the use of a LBS simulation. Through this simulation and a following survey, current perceptions of LBS are investigated and insights gained.

The structure of the rest of the paper is as follows. The next section briefly reviews literature in the areas of LBS and of technology acceptance; this is followed by the research methodology and results of a participant survey. Finally, we discuss the results and conclude and propose topics for future research.

LITERATURE REVIEW

In this section we review literature to provide a theoretical basis for our empirical study. Firstly, we indicate salient evidence to support market groups, attitudes, awareness and use of these products (May, et al., 2007). At this time the literature on LBS is sparse and concentrates mainly on peripheral elements associated with these systems. Secondly, we review literature on technology acceptance and adoption and focus on understanding the characteristics and behaviour of groups who are potential early adopters in order to provide more indication of the rate of uptake of LBS (Rogers, 2003). Within this review we also refer to contemporary applications and their usage, Global Positioning Systems (GPS) and the use of social media based LBS.

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