



Consumer-based m-commerce: exploring consumer perception of mobile applications

Pruthikrai Mahatanankoon^b, H. Joseph Wen^{a,*}, Billy Lim^b

^aDepartment of Accounting and MIS, Harrison College of Business, Southeast Missouri State University, Cape Girardeau, MO 63701, USA

^bSchool of Information Technology, College of Applied Science and Technology, Illinois State University, Normal, IL 61790-5150, USA

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Abstract

With m-commerce still in its infancy, there have been relatively few attempts to systematically explore the opportunities and challenges posed by m-commerce. This study is an early attempt aims to provide empirical data on consumer perception of mobile applications. This paper first examines the value proposition of mobility. It then investigates m-commerce operation modes and potential consumer-based applications. A consumer perception survey was conducted to reveal the attributes that are perceived as important by consumers for making m-commerce choices. Results provide company executives with useful insights into m-commerce applications and their commercial potentials.

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1. Introduction

To give a broad categorization of the advances in computing, many experts classify the 1980s as the decade of the PCs, the 1990s as the decade of the Internet, and propose to label the first decade of the 21st century as the decade of mobile computing and mobile commerce (m-commerce). While m-commerce is not delivering the promises that many pundits had proclaimed just a few years ago in terms of providing unprecedented commercial functionality to the masses

[1–3], it is still projected to be one of the main driving forces for next generation computing and a major revenue generating platform for many corporations. Research firm IDC confirmed US\$500 million in m-commerce revenues for 2002 and projects the amount to be US\$27 billion by 2005. Forrester Research also predicts that by 2007, up to 2.3 million wired phone subscribers in the US would make the switch to wireless access, making an average of 2.2 wireless phones per household.

Research efforts in m-commerce also continue to gain great strides over the last few years. For example, the recognition and ramification that ‘E’≠‘M’ (E as in ‘electronic’ commerce and M as in ‘mobile’ commerce) in wireless/mobile application design allow for

* Corresponding author. Tel.: +1 573 651 2908.

E-mail address: hjwen@semo.edu (H.J. Wen).

a more usable and user-friendly environment for conducting m-commerce [4,5]. Also, the advent of location-based services enables m-commerce to be further leveraged so that the mobility aspect is taken advantage of rather than just repackaging old applications in a new format [6].

With the NASDAQ market plunge in 2000 and its recent recovery in 2003, it is safe to assume that many of the excess capacities built by the mobile carriers in the early dotcom boom days have been ironed out and the over expectations and promises grounded. Now, in the post dotcom bust era, it is expected that more careful analysis, thorough empirical studies, and rigorous development projects be conducted to identify market trends, products design, interoperable standards, and other critical success factors so that costly mishaps can be limited.

It is with the above observation that this research is to set out to conduct a study that investigates the various aspects of mobility *and how consumers perceived different mobile applications*. This permits the mobile developers/practitioners to better design and target the appropriate user groups so that the goal of making m-commerce a reality instead of another technology fad that goes by the wayside can be achieved.

In Section 2, we briefly summarize the value proposition of mobility and discuss the various aspects of mobility. Then, the two modes of operation for mobile computing are described in Section 3. The research method is then presented in Section 4. They are followed by the discussion of the results and the implementation of the study in Section 5. Finally, the paper concludes with the limitations and future research.

2. Value proposition of mobility

Mobile devices have been the fastest adopted consumer products of all time with more mobile phones shipped annually than automobiles and PCs combined [7]. However, just as is the case for e-commerce in the early years when its unique characteristics were not well understood, m-commerce is in very early stages of development now and little is known about factors that influence consumers' attitudes and value perceptions about them [8–13].

While a growing body of literature has pointed out the main value-added elements of m-commerce, the primary drivers for adopting and intending to adopt mobile services remain unclear [14,15].

E-commerce creates value for customers in a manner that is different from that achieved in conventional business [16]. Correspondingly, m-commerce extends not only the benefits of the web, but also allows for unique services and additional benefits when compared to traditional e-commerce applications [17,18]. As noted by Keen and Mackintosh [19], the demand side of m-commerce is a search for value and hence there is a need to build an understanding of the elements and special features of wireless electronic channels that are value-adding from the consumer's point of view. Every company entering the mobile space has the same goal—leveraging this channel to create customer value [20]. Customers are thus asking for proofs that the adoption of mobile services will add value to their businesses [21], and respectively, to their consumers.

Keen and Mackintosh also note that the key value proposition of mobility is the creation of choice, or new freedoms, for customers. In a similar way, words commonly used to describe the main value-added feature of m-commerce include flexibility, convenience, and ubiquity. While being pertinent and illuminating, such terms nevertheless appear to be too general to grasp the essence of the consumer value creation process in m-commerce, as they fail to address the relevance of contextuality [22]. The distinctive feature of mobile commerce is the significance of the user's location, his situation, and his mission [9]. To gain an understanding of the drivers for consumer adoption and usage of m-commerce services, there is, thus, a need to look into why and when flexibility is valuable to customers. It is, after all, obvious that the freedom benefits created by mobility are not equally valid for different mobile services and for different settings.

Current e-commerce providers, engaged through mobile devices, will find advantage in developing unique m-commerce value propositions founded upon the specific dimensions of “always on,” location-centric, convenience, customization, and identifiability [23]. These features, which are not

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