

Mobile Commerce Adoption Barriers

Pruthikrai Mahatanankoon

Illinois State University, USA

Juan Garcia

Illinois State University, USA

INTRODUCTION

Mobile commerce (m-commerce) emerged as one of the technologies that could change the way consumers engage in electronic business. Consumers have envisioned it as the mobile “electronic commerce,” which allows them to purchase goods and services using their wireless mobile devices anywhere, anytime. This mobility, supported by a mobile telecommunications infrastructure, is the major characteristic that differentiates mobile computing from other forms of information technology applications.

Although the widespread use of mobile commerce has been intermingled with advanced telecommunications infrastructure, perceived benefits, and consumer demands, the industry is continuously searching for new and innovative mobile applications. Many consumers are still reluctant to make use of various mobile commerce applications. Technological hype and unreal consumer expectations have generated high hopes for innovative mobile applications that cannot be conceptualized during their initial stages. In many cases, unfilled gaps exist between the potential applications and the actual services provided by leading mobile carriers.

The purpose of this article is to identify and explain different socio-psychological drivers and barriers affecting consumers’ motivations to use mobile commerce applications. These determinants are based on our literature reviews and exploratory consumer-based research. We later suggest a research framework to which researchers and practitioners can refer.

BACKGROUND: CONSUMER-BASED DRIVERS OF MOBILE COMMERCE

Mobile computing has two major characteristics that differentiate it from other forms of computing: mobility and broad reach (Turban, Rainer, & Potter, 2006). These two characteristics have created several value-added attributes that drive the demands for mobile-based computing, such as convenience, instant connectivity, and personalization. Wen and Mahatanankoon (2004) capture these demands through their ‘aspects of mobility’ concept, suggesting that the main

driving forces of mobile applications are based on consumers’ perception that: (1) their mobile devices are ‘always on’; (2) they have the ability to customize their usage according to their lifestyle and social-psychological needs; (3) their location-based services (LBSs) can recognize where they are and then personalize the available services accordingly; and (4) their mobile devices have built-in authentication procedures that support secure mobile transactions. These aspects of mobility have tremendous impact on how consumers perceive various mobile applications.

The success of mobile commerce relies on the synergy of technology innovation, evolution of new value chains, and active customer demand (Zhang, Yuan, & Archer, 2003). These interrelated factors shift the telecommunications industry from being the provider of products or services to being the facilitator of customers’ socio-psychological needs. Some practitioners suggest a consumer-centric approach to design effective mobile portals (Chen, Zhang, & Zhou, 2005). A good mobile application not only needs to be ergonomically easy to use, but it also has to provide consumers with sufficient, relevant, and personalized information. The industry should exploit these demand drivers and strengthen them by creating unique sets of innovative mobile applications that interact seamlessly between consumers and their surroundings. To ensure critical mass of mobile commerce adoption, we suggest further development of these existing applications and services to support consumer socio-psychological needs.

Integrated Mobile Devices

These devices are evolving from being a simple telephone with some extra features to an integration of the functionality of a personal digital assistant (PDA) with cellular telephones. The result of such integration creates a device that is able not only to connect to wireless networks, but also to manage organizer features. Speech recognition has become increasingly popular to support mobile commerce activities and will change the nature of user interface design (Fan, Saliba, Kendall, & Newmarch, 2005). In the near future, consumer perspective will change as these technologies are integrated into miniature wearable devices.

Ultramodern Mobile Applications

New and innovative services should exceed today's conventional usage of mobile devices. Enticing future applications will not only blur the boundary between work and play, but will also permit various ubiquitous services to take place simultaneously based on consumer demands (Varshney & Vetter, 2002). Ubiquitous services should be built based on the social network of mobile users.

Geographic-Oriented Applications

Location-based services will be the fastest growing enabler of mobile commerce applications. To consumers, the idea of conducting commercial transactions based on their current location is very appealing (e.g., consumers receiving a coupon for their favorite drink while walking past the coffee shop). In the foreseeable future, various industry consortiums will seek new ways to improve consumers' satisfaction by mapping their usage behaviors to specific locations, times, and events while providing them with options to customize their experience.

Advance Security and Privacy Applications

Two major factors exist concerning security issues: network security and storage security (i.e., securing the information stored in the mobile device). A mobile network needs to protect its users by continuously authenticating its subscribers (Patiyoot & Shepherd, 1999). Biometrics-ready phones can identify and enable authorized users to access the devices' full capabilities while preventing malicious individuals from accessing important personal information. Consumers can also locate lost mobile devices via location-based services by using the embedded global positioning system (GPS) capability.

However, most consumers are not totally convinced that mobile commerce would be a satisfactory experience. Consumers think twice before engaging in mobile commerce since most mobile commerce functionalities and services are not similar to those of electronic commerce. Mobile com-

merce is not intended to replace electronic commerce, but rather supplement it. Various factors, such as user interface, network speed, and users' self-efficacy, hinder many potential mobile applications.

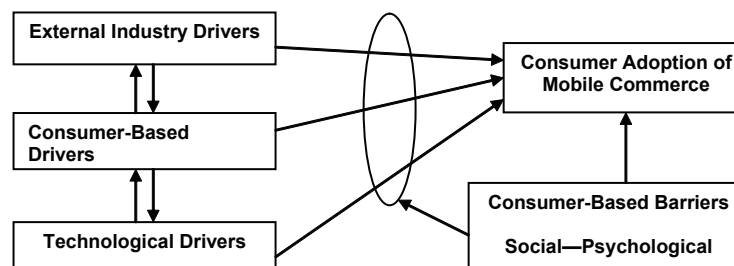
BARRIERS TO MOBILE COMMERCE ADOPTION

Based on our preliminary findings, we are able to identify six main consumer-based barriers to mobile commerce adoption. These socio-psychological barriers are tightly integrated and include unawareness, device inefficiency, personalization/customization, nice-to-have/must-have, roaming, and electronic commerce perception. A successful solution to these interrelated factors will most likely result in mobile commerce reaching its critical mass. Figure 1 suggests a research framework on mobile commerce applications. These integrated barriers directly impact the mobile commerce adoption, as well as moderate the strength of external industry, technological, and consumer-based drivers. The external industry and technological drivers directly influence the consumer-based drivers and vice versa.

Unawareness Barrier

Awareness of mobile commerce existence implies that the individual has heard of it and has some idea of the kind of services it provides. Consumers are not always aware of their wireless devices' mobile commerce capabilities or their carrier's pricing scheme. Sometimes mobile carriers fail to communicate the mobile commerce capabilities to consumers. Only a few active users explore their mobile devices beyond voice communications and information-seeking activities. With various third-party electronic commerce vendors joining the bandwagon, it is often up to the users to discover how to connect to the Internet, download applications, or figure out how to use such applications. Therefore, in many mobile usage settings, consumer self-efficacy generally plays a significant role in exploring ground-breaking functionalities.

Figure 1. Consumer-based mobile commerce adoption framework



3 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/mobile-commerce-adoption-barriers/17118

Related Content

Know Your World Better: Cloud Based Augmented Reality Android Application

Srinivasa K. G., Satvik Jagannathand Aakash Nidhi (2016). *International Journal of Handheld Computing Research* (pp. 1-15).

www.irma-international.org/article/know-your-world-better/167831

Mobile Government in Jordan: Is It a Step in the Right Direction?

Sultan Al-masaeedand Steve Love (2013). *International Journal of Handheld Computing Research* (pp. 93-116).

www.irma-international.org/article/mobile-government-in-jordan/84828

Mobile Camera-Based User Interaction

Tolga Capinand Antonio Haro (2008). *Handbook of Research on User Interface Design and Evaluation for Mobile Technology* (pp. 543-557).

www.irma-international.org/chapter/mobile-camera-based-user-interaction/21851

A Novel Power-Efficient Data Aggregation Scheme for Cloud-Based Sensor Networks

Abhishek Bajpai, Shashank Yadav, Naveen Tiwari, Anita Yadavand Mansi Chaurasia (2022). *International Journal of Mobile Computing and Multimedia Communications* (pp. 1-14).

www.irma-international.org/article/a-novel-power-efficient-data-aggregation-scheme-for-cloud-based-sensor-networks/297964

A Proposal for Enhancing the Mobility Management in the Future 3GPP Architectures

Joel Penhoat, Karine Guillouard, Servane Bonjourand Pierrick Seïté (2013). *Contemporary Challenges and Solutions for Mobile and Multimedia Technologies* (pp. 190-209).

www.irma-international.org/chapter/proposal-enhancing-mobility-management-future/70816