

# Chapter 4.24

## E-Commerce and Mobile Commerce Applications Adoptions

**Charlie Chen**

*Appalachian State University, USA*

**Samuel C. Yang**

*California State University, Fullerton, USA*

### INTRODUCTION

E-commerce applications are primarily used at home and in the workplace. Utilitarian elements, including cognitive beliefs of perceived usefulness, perceived ease of use (at the individual level), industry pressure, organizational readiness, economics, and trust (at the business level) are key determinants contributing to the usage of e-commerce applications. Mobile devices redefine the meaning of workplace. The use of mobile services could be in and outside the workplace. Hedonic elements, such as fun, culture, life style, and hype are key determinants contributing to the usage of mobile commerce applications. The purpose of our article is to discuss and clarify immediate determinants of e-commerce and mobile commerce applications based on the technology acceptance model.

### BACKGROUND

A joint study by eMarketer and Forrester (2005) estimates that business-to-customer (B2C) revenues in the U.S. will reach \$229.9 billion by 2008 and business-to-business (B2B) revenue will reach \$8.8 trillion in 2005. According to the Computer Industry Almanac (ClickZ Stats, 2005), by 2007 the number of Internet users will grow to 1.46 billion worldwide with the U.S. market representing only about 20% of worldwide Internet users. It is clear that e-commerce (EC) is becoming a global transactional forum.

Along with the dominance of EC comes an increased demand for mobile commerce (MC). The total number of mobile telephone subscribers in the world grew to 1.34 billion in 2003 from 317 million in 1998 (International Telecommunication Union, 2003). More than half of Americans (158

million) were mobile telephone subscribers in the United States. Unlike EC, only a very limited number of MC applications are making profit (Beck & Wade, 2002). The difference in the adoption pattern of EC and MC prompts practical reasons as well as research motives to investigate what drive consumers to purchase or use a particular EC and MC application.

The goals of adoption of EC and MC applications can be grouped into two broad categories: utilitarian (productivity-oriented) and hedonic (pleasure-oriented). *Utilitarian* elements are those determinants of productivity and usefulness that should be considered by a rational user or company before deciding to adopt a particular EC or MC application. For instance, an individual uses e-banking and online job search engine to improve personal productivity. A company adopts e-marketplace or Internet EDI applications to improve operational efficiency, reduce cost, and increase customer services. *Hedonic* elements are those determinants that are associated with personal enjoyment and pleasure. (See Table 1.) A user subscribes to a gaming or dating service to meet

friends who share common interests. Knowing the dichotomizing difference between utilitarian and hedonic goals can help us understand why we accept a particular EC or MC application.

## E-COMMERCE AND M-COMMERCE ADOPTION

### E-Commerce Adoption

Electronic commerce (EC) refers to electronic business with a broader meaning than just buying and selling on the Internet. EC is the process of transacting, transferring, or exchanging products and services over communication networks, including the Internet (Turban, King, Lee, & Viehland, 2004). Note that the underlying network may encompass different broadband (i.e., > 1 Mbps) segments such as DSL, cable modem, power line, Asynchronous Transfer Mode (ATM), and Gigabit Ethernet. Straub (2004) defined all forms of EC organizations as Net-enhanced organizations. Many EC applications are avail-

Table 1. Summary of utilitarian and hedonic factors of EC and MC adoption

	E-Commerce	M-Commerce
Utilitarian Factors (Firm)	Industry pressure, organizational readiness, perceived benefits, trust	Critical mass, perceived benefits
Utilitarian Factors (Individual)	Perceived ease of use (PEOU), perceived usefulness (PU)	Perceived ease of use (PEOU), perceived usefulness (PU), cost, perceived system quality
Hedonic Factors (Individual)	Perceived playfulness, perceived enjoyment, network size, perceived user resources	Social influence, entertainment, hype, lifestyle

9 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/commerce-mobile-commerce-applications-adoptions/26611](http://www.igi-global.com/chapter/commerce-mobile-commerce-applications-adoptions/26611)

## Related Content

---

### The "Umbrella" Distributed Hash Table Protocol for Content Distribution

A. Sotiriou (2007). *Encyclopedia of Mobile Computing and Commerce* (pp. 960-965).

[www.irma-international.org/chapter/umbrella-distributed-hash-table-protocol/17202](http://www.irma-international.org/chapter/umbrella-distributed-hash-table-protocol/17202)

### A 2D Barcode Validation System for Mobile Commerce

David Kuo, Daniel Wong, Jerry Gao and Lee Chang (2011). *International Journal of Handheld Computing Research* (pp. 1-19).

[www.irma-international.org/article/barcode-validation-system-mobile-commerce/53853](http://www.irma-international.org/article/barcode-validation-system-mobile-commerce/53853)

### An Empirical Study of the Factors Affecting Mobile Shopping in Taiwan

Yi-Fen Chen and Yu-Chen Lan (2018). *Mobile Commerce: Concepts, Methodologies, Tools, and Applications* (pp. 1329-1340).

[www.irma-international.org/chapter/an-empirical-study-of-the-factors-affecting-mobile-shopping-in-taiwan/183344](http://www.irma-international.org/chapter/an-empirical-study-of-the-factors-affecting-mobile-shopping-in-taiwan/183344)

### A Deep Autoencoder-Based Hybrid Recommender System

Yahya Bougteb, Brahim Ouhbi, Bouchra Frikhand Elmoukhtar Zemmouri (2022). *International Journal of Mobile Computing and Multimedia Communications* (pp. 1-19).

[www.irma-international.org/article/a-deep-autoencoder-based-hybrid-recommender-system/297963](http://www.irma-international.org/article/a-deep-autoencoder-based-hybrid-recommender-system/297963)

### Delivery of Unified Communications over Thin-IMS

T. Rachidi, A. Mourhir and F. Chaatit (2012). *International Journal of Mobile Computing and Multimedia Communications* (pp. 43-56).

[www.irma-international.org/article/delivery-unified-communications-over-thin/63050](http://www.irma-international.org/article/delivery-unified-communications-over-thin/63050)