

Chapter 1.5

Adoption and Diffusion of M-Commerce

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INTRODUCTION

Mobile commerce (or in short, m-commerce) is currently at the stage where e-commerce was a decade ago. Many of the concerns consumers had regarding e-commerce (such as security, confidentiality, and reliability) are now directed towards m-commerce. To complicate the matter further, the lack of a standardized technology has made m-commerce grow in multiple directions in different parts of the world. Thus, the popularity of m-commerce-based services varies by country, by culture, and by individual user. For example, in Europe the most popular application is SMS (short message service) or text messaging, in Japan interactive games and picture exchange via NTT DoCoMo i-mode, and in North America e-mail via interactive pagers (such as RIM BlackBerry) and wireless application protocol-based (WAP-based) wireless data portals providing news,

stock quotes, and weather information. It is safe to predict that these applications will take on different forms as the technologies mature, devices become more capable in form and functionality, and service providers become more innovative in their business models.

It is true that m-commerce has witnessed spectacular growth across the globe. It is also encouraging that several factors are expected to accelerate the pace of adoption of m-commerce. Notable among these drivers is convergence in the voice/data industry, leaping improvements in related technology and standards, adoptive technology culture in many parts of the world, and governmental and regulatory initiatives.

Despite the undisputed promise of m-commerce, there are several barriers that are slowing the pace of adoption of m-commerce. The major barriers include: (a) lack of good business models to generate revenues, (b) perception of lack of

security, (c) short product lifecycle due to rapidly changing technology, (d) non-convergence of standards, (e) usability of devices, (f) limitation of bandwidth, and (g) cost.

Many of the aforesaid were common to e-commerce also at its introduction and growth stage. We strongly believe it is worthwhile to investigate how e-commerce has been able to overcome these barriers so that we can incorporate some of the successful strategies to m-commerce. In our study, we will first compare and contrast e-commerce and m-commerce with respect to a set of common criteria such as: (1) hardware requirement, (2) software requirement, (3) connection or access, and (4) content. In the process, we will identify the principal barriers to the development of m-commerce as outlined in the above list.

The Growth in E-Commerce

Electronic commerce or e-commerce is the mode of commerce wherein the communication and transactions related to marketing, distributing, billing, communicating, and payment related to exchange of goods or services is conducted through the Internet, communication networks, and computers. Since the Department of Defense opened up the Internet for the public to access in 1991, there has been exponential growth in the number of Web sites, users on the Web, commerce through the Web, and now change of lifestyle through the Web (Pew, 2006).

The chronology of events shows that as the Internet became easier and cheaper to use, and as the applications (such as e-mail and Web interaction) became necessary or useful to have, the rate of adoption of the Internet accelerated. In fact, the rate of adoption of the Internet surpassed all projections that were made based on the traditional technology adoption rates that were documented for electricity, automobile, radio, telephone, and television (Pew, 2006). Unfortunately, the over-enthusiastic media hyped up the growth rate to an unsustainable level, leading to unprecedented

growth of investment in the Internet technologies and followed by a melt-down in the stock market. This shattered the confidence in Internet technologies in the investment market. Although there was a significant deceleration in IT investment, e-commerce has rebounded to a large extent since the dot.com bust. It has been growing at about 30% compound rate per year (Pew, 2006).

In the last 10 years, the adoption of e-commerce has been extensively studied both by academicians as well as practitioners. During this period e-commerce and the scope of its definition also went through various iterations. For example, people may not buy a car on the Internet, but it is documented that 65% of car buyers have done extensive research on the Web about the car they eventually buy. Is this e-commerce? Should we restrict the e-commerce definition to financial exchange for goods or services? We have various such examples in the marketplace where extensive research about the product or service is conducted on the Internet, but the final purchase is made in the physical environment. Hence, although the number of consumer financial transactions has not grown to the level industry projected initially, there has been a significantly high rate of adoption of the activities supporting e-commerce.

In addition, there has been a very high rate of adoption of business-to-business (B2B) commerce both in terms of financial and supporting transactions. In this article, we are interested in business-to-consumer (B2C) commerce. Hence, the comparison and contrast is made between e-commerce and m-commerce. All our discussion henceforth will be on B2C commerce using desktop and/or mobile technologies.

The Growth Potential of M-Commerce

Mobile commerce is the model of commerce that performs transactions using a wireless device and data connection that result in the transfer of value in exchange for information, services, or

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