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Chapter V

Barcode Applications for M-Business

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Abstract

One pertinent area of recent m-commerce development is in methods for personal transaction and information transfer. Several companies around the world have begun to use barcodes for the provision of m-commerce services. This chapter provides background on the enabling technological platform for providing such services. It then continues with three cases where mobile barcodes have been used—in Japan, New Zealand, and the UK. Subsequently, these are used as the basis for a discussion and analysis of the key business models, and strategic implications for particular markets. The chapter concludes with predictions for the market and directions for future research.

Introduction

With well over a billion mobile handsets worldwide, wireless technologies are enabling e-businesses to expand beyond the traditional limitations of the fixed-line personal computer (Bai, Chou, Yen, & Lin, 2005; Barnes, 2003; Barnes & Huff, 2003; Barnes & Vidgen, 2001; Bergeron, 2001; Chen, 2000; Clarke, 2001; de Haan, 2000; Emarketer, 2002;

Figure 1. Technology convergence between OCR and mobile phones



Kalakota & Robinson, 2002; Sadeh, 2002; Yuan & Zhang, 2003). According to a study by Telecom Trends International (2003), global revenues from m-commerce could grow from \$6.8 billion in 2003 to over \$554 billion in 2008.

As each mobile device is typically used by a sole individual, it provides a suitable platform for delivering individual-based target information, purchasing goods or services and making payments (Barnes, 2003; Barnes & Scornavacca, 2004; Bayne, 2002; Kannan, Chang, & Whinston, 2001; Newell & Lemon, 2001; Scornavacca & Barnes, 2003). One recent development in m-commerce is the application of barcodes solutions (NTT DoCoMo, 2003). This revolutionary development benefits from the convergence of two widespread technologies: optical character recognition (OCR) and mobile telephony (see Figure 1). Through barcodes, users of mobile phones can, for example, purchase tickets, receive coupons, access information, make payments, and interact with point-of-sale information systems (Airclic, 2003; AsiaTech, 2003; Bango, 2003; Barcode 1, 2003; Ecrio, 2003; NTT DoCoMo, 2003; Wireless Newsfactor, 2002).

This chapter aims to explore the applications of barcodes in mobile commerce. The following section provides a brief explication of barcodes and OCR technologies. This is followed by three case studies of the application of barcodes in m-commerce: in Japan, New Zealand, and the United Kingdom. Subsequently, we explore the business models being employed, and analyze the strategic implications of these models for different m-commerce markets. The chapter concludes with a discussion about the future of mobile commerce and directions for further research.

Technological Foundations: Optical Character Recognition and Barcodes

OCR technology has been used in business for nearly half a century. OCR devices transform specially designed marks, characters, and codes into a digital format. The

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