Chapter 26

Electronic Business Over Wireless Device: A Case Study

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ABSTRACT

Research and practices in electronic businesses over wireless devices have recently seen an exponential growth. This chapter presents the basic concepts necessary to understand m-business applications and a case study of the voice driven airline-ticketing system that can be accessed at any time, anywhere by mobile phones. This application offers maximum functionality while still maintaining a high level of user convenience in terms of input and navigation.

INTRODUCTION

Research and practices in electronic business (e-business) have witnessed an exponential growth in the last couple of years (Huff, 2000; Liautand & Hammond, 2001; McKie, 2001; Wimmer, Traunmüller, & Lenk, 2001). At its broadest, e-business is any type of business transaction or interaction in which the participants operate or transact business or conduct their trade electronically.

Over the last decade, deployment of wireless communications in Asia, Europe, and North America has also been phenomenal (Boyd & Park, 1998; Garg & Wilkes, 1996; Shafi, 2001; Schneiderman, 1997). Wireless technology has evolved a logical path, from simple first generation analog products designed for business use, to second generation digital wireless telecommunications systems for residential and business environments, to emerging radio-active signal-based third generation of wireless communications.

The explosive growth of mobile computing and e-business has created a new concept of mobile electronic business or electronic business over wireless devices (m-business).

Mobile e-business is a new way of advertising, buying, selling and, in some cases, delivering goods and services. It includes a range of online business activities, business-to-business and business-to-consumer, for products and services through wireless devices such as mobile phones with display screens, personal digital assistant (PDA), two-way pagers, and low-end or reduced size laptops.

Significant benefits of m-business to consumers are convenience, portability, safety, integrating existing mobile phones with mobile computing technology, verifiable receipts and transaction records that can be made available instantly and permanently on the smartcard (Inglis & Mosely, 2000; Keller, Zavagli, Hartmann, & Williams, 1998). Significant advantages of m-business to service providers and/or content providers include driving additional revenue and decreasing consumer attrition by offering new m-business services.

This chapter presents a case study of an airline ticketing system, which can be accessed by users via a mobile phone voice browser. The specific goals for this system are to allow users to search for flight information and then purchase an airline ticket to a destination while still being mobile. The objective of this chapter is to present this m-business case study in detail. Before presenting this case study, the desirability of development of m-business applications is discussed.
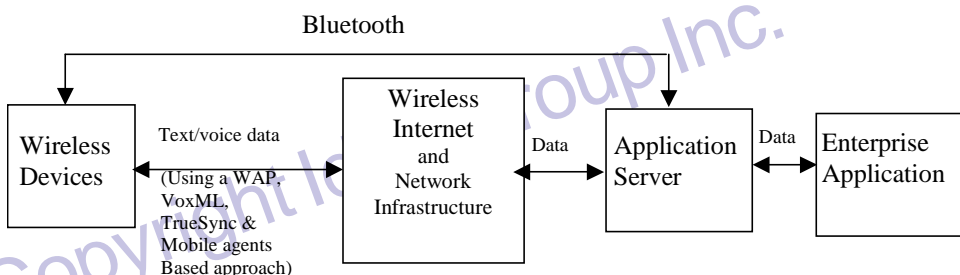
BASIC CONCEPTS OF M-BUSINESS

The applications and services that were envisioned for the m-business marketplace are becoming a reality today. Example applications are mobile ticketing and receipting, banking, mobile gaming, mobile weather forecast, sport scores access, movie database access, television guide access, stock exchange information, ordering of books and other daily needs such as food and groceries. Widespread adoption of m-business proves to be a more efficient mode of doing business. Figure 1 illustrates a typical platform that enables m-business services.

Technologies to Enable M-Business

The Internet standards require large amounts of (mainly) text-based data to be sent over the network. These standards are inefficient over mobile networks due to constraints such as low bandwidth, low computing processing, instable connection, etc. (Tsalgatidou, Veijalainen, & Pitoura, 2000). Techniques and protocols are required to conduct e-business for the unique constraints of the wireless computing environment.

Wireless Application Protocol - A commonly used approach to bridge the gap between e-business and mobile computing environments is Wireless Application Protocol (WAP).

Figure 1: A typical platform enabling m-business services

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