Chapter II

From e-Commerce to m-Commerce: The Power of the Mobile Internet

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INTRODUCTION

This chapter provides an overview of prevailing trends and developments shaping m-Commerce (mobile commerce) and the wireless economy. A detailed roadmap of the evolving mobile technology landscape is first presented. An intuitive review of the many basic underlying building blocks attempts to demystify the alphabet soup that wireless telecommunications infrastructure is often deemed to be. Interesting mobile Internet deployment and adoption demographics are highlighted. Commercial ramifications of actual and potential wireless application implementations are emphasized. Pertinent issues serving to promote or impede m-commerce take-off are examined. A case study is also included, profiling an industry-leading m-Commerce Web portal.

BACKGROUND

The World Wide Web and e-Commerce

The advent of the World Wide Web (WWW) provided the interface that made the Internet accessible to the mass market. Riding on the ubiquity and reach of the
WWW is commerce in its many forms: inter-business trade, intra-organizational transaction, purveyors of goods and services touting wares to potential customers and consumers soliciting purchases. Electronic commerce (e-commerce) is the primary propellant of Internet development today and is expected to continue driving innovation well into the new millennium.

For the business-to-business (B2B) e-Commerce sector alone, the Gartner Group forecast for the Asia-Pacific region excluding Japan is an impressive 155% compounded average growth from 1999–2004, growing in transaction value from US$9.2 billion to nearly US$1 trillion over the period to account for a 13.6% share of the US$7.3 trillion expected worldwide by 2004 (Asia/Pacific Business-To-Business e-Commerce to Reach $1 Trillion in 2004, 2000). The exponential growth pattern emulates that of the WWW upon inception.

From e-Commerce to m-Commerce

The wireless telecommunications market is exhibiting similarly impressive statistics. Conceived in the 1980s primarily to carry voice, the medium today also carries Internet data communications. The Cahners In-Stat Group forecasts the international wireless data market growing from 170 million subscribers to more than 1.3 billion between 2000–2004, equipping themselves with 1.5 billion wireless-capable handsets, personal digital assistants (PDA) and other Internet appliances by end 2004 (Wireless Data Users to Reach 1.3 Billion by 2004, 2000). The same study found in the United States with its high wired Internet penetration of 60 million connected households, some 100 million mobile phones—an enormous potential wireless market. Elsewhere around the world where wired Internet penetration is lower, mobile phones have actually become many subscribers’ primary means of Internet access. The Strategis Group projects wireless Internet users in the Asia-Pacific region will rise ten-fold from 20 million in 2000 to 216.3 million by 2007 (Number of Wireless Internet Users in Asia-Pacific to Grow Ten-Fold by 2007, 2000).

The Gartner Group contends worldwide shipment of Web-enabled wireless devices rose 796% in 2000 alone over 1999 and predicts consumer transactions committed from such terminals would ring up a worldwide value of US$1.8 trillion by 2005 (The Shape of the Wireless Economy, 2000). As Internet and mobile communications converge, e-commerce evolves into mobile commerce (m-commerce). The potential of ‘anytime’ convenience and ‘anywhere’ mobility in carrying out everyday Internet transactions will spur many novel mobile services.

WIRELESS TELECOMMUNICATIONS TECHNOLOGY ROAD MAP

Television broadcasting inspired wireless communications architecture in the late 1940s: tall, centralized transmitter towers erected at select locales provided radio coverage to a region. Over time, system limitations like restricted mobility,
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