

Mobile E-Commerce as a Strategic Imperative for the New Economy

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INTRODUCTION

A new form of technology is changing the way commerce is being done globally. This article provides an overall description of mobile commerce and examines ways in which the Internet will be changing. It explains the requirements for operating mobile commerce and the numerous ways of providing this wireless Internet business. While the Internet is already a valuable form of business that has already changed the way the world is doing business, it is about to change again. Telecommunications, the Internet, and mobile computing are merging their technologies to form a new business called *mobile commerce* or the *wireless Internet*. This is being driven by consumer demand for wireless devices and the desire to be connected to information and data available through the Internet. There are many new opportunities that have only begun to be explored, and for many this will become a large revenue source for those who capitalize upon this new form of technology. However, like other capital ventures, these new opportunities have their drawbacks, which may limit growth of the mobile commerce market if not dealt with. Mobile e-commerce technology is changing our world of business just as the Internet alone has changed business today.

BACKGROUND

Mobile commerce is the delivery of electronic commerce capabilities directly into the consumer's hand via wireless technology and putting a retail outlet in the customers' hand anywhere. This form of e-commerce allows businesses to reach consumers directly regardless of their location. The term mobile commerce or m-commerce is a variation of the e-commerce or electronic commerce term used for business being done over the Internet. Known as next-generation technology, m-commerce enables users to access the Internet without the need to find a place to plug in. There are signs that m-commerce is growing in popularity. Gartner Research (2004) forecasts that in six years time, 60% of people aged 15 to 50 in the European Union and the United States will wear an always-on wireless communications device for at least six hours a day, and more than 75% will do so by the year 2010.

Mobile commerce is the integration of technologies using wireless devices for conducting business over the Internet. M-commerce can be done by computer solutions, such as laptops and palm pads, with wireless devices attached to connect to the Internet or by using newly adapted cellular phones to receive digital transmissions of Internet material to these phones. These are all linked by software and service providers which provide the platform to conduct these operations.

A new business model is emerging: the integration of wireless networks with data communications, combined with electronic commerce, to create wireless e-commerce. Wireless e-commerce will generate significant revenues within the next several years from such services as wireless banking, wireless stock trading, and a variety of wireless-based shopping ventures. Wireless communications and e-commerce already are multi-billion-dollar global businesses. The integration of mobile communications with e-commerce has already started. For years companies in the vertical markets, such as field repair, have been utilizing mobile communications networks to enable their technicians to order parts and check inventories. The opportunities for wireless e-commerce in the horizontal markets, such as traveling executives and the consumer markets, is generating much appeal (Reiter, 1999).

M-commerce is a Quantum leap of technology applications and will not be limited simply to banking and brokerages. Other market uses will emerge. Payment options are one example that are being tested now in which products in a store may be scanned as one walks out and automatically deducted from a *smart card* which stores cash on it from your local bank. Airline and rail connections will be enhanced with ticket reservation and payment facilities. Mobile phone users will also have access to new online auction houses to submit bids and check developments by use of the cellular phone (Brokat, 2000).

MOBILE COMMERCE: STATE OF THE INDUSTRY

According to the Strategis Group (2005), by the year 2010, there will be one billion wireless subscribers worldwide on 3G (third-generation) networks. ARC Group estimates that

Table 1. Payback period for wireless LAN

	Retail	Manufacturing	Healthcare	Office Automation	Education
Benefits per company (millions \$)	5.6	2.2	.94	2.5	.5
Costs per company (millions \$)	4.2	1.3	.90	1.3	.3
Payback (# of months)	9.7	7.2	11.4	6.3	7.1

Table 2. Wireless Internet users

Region		2001	2004	2010
USA	Internet Users (#M)	149	186	247
	Wireless Internet Users (#M)	5.5	23	91
	Wireless Internet User Share (%)	3.7	12.5	35.1
Worldwide	Internet Users (#M)	552	941	1,781
	Wireless Internet Users (#M)	79	200	779
	Wireless Internet User Share (%)	14.4	21.2	43.8

by 2007 approximately 546 million users will spend close to \$40 billion on mobile commerce (Schone, 2004). The reasons for this phenomenal growth are attributed to business factors such as substantial increase in remote workers and the telecommuters' need for improved customer service; the economic justification of mobile computing solutions through productivity gains and competitive advantages gained by early implementers; availability of inexpensive hardware with pre-packaged vertical industry application solutions, and less expensive and faster wireless networks; convergence of the Internet, wireless, and e-commerce technologies; and emergence of location-specific and mobile commerce applications, especially by a socially upscale and mobile population. As illustrated in Table 1, the data from the Wireless LAN Association (2005) shows that across all industries, with all economic benefits such as increased productivity, organizational efficiency, and extra revenue/profit gain considered, the wireless LAN paid for itself within 12 months time.

By 2008, a tenth of the world's mobile phone users will use their handsets as video players and cameras, and to download news, sports, and entertainment news (Gartner Research, 2004). Table 2 lists the wireless Internet users from 2001 and 2004, and forecasts the statistics for 2010 (eTForecasts, 2006).

Figure 1 summarizes the expected growth in m-commerce revenues over the period of 2001-2006.

International Data Corporation's (IDC's) forecast shows that total mobile data revenues are expected to be increasing by more than 31% per annum, whereby the CAGR for revenues generated by m-commerce is estimated to be more

than 265% per annum. As seen in Figure 1, despite rapid growth, income from m-commerce will remain a very small portion of total data revenues (highest value 5.2% in 2006). This implies that in the short run m-commerce will not turn in profits to justify the investments in the new technologies that were initially believed to boost it. This applies to Europe and the United States. Asia, on the other hand, has developed more quickly with respect to m-commerce. Figure 2 illustrates the mobile operator data services revenue from 2001 to 2006 in Hong Kong and China.

The combined figures for Hong Kong and China show that the total mobile data services revenues are expected to increase for the period 2001-2006 by more than 70% per annum. The growth in m-commerce revenues in Hong Kong and China is currently 26.3% and is expected to outstrip 45% by 2006.

This outstanding acceptance of m-commerce in Asia is only partially due to the currently used mobile technologies that require fewer investments for the upgrade to 3G. The major drivers behind this trend are the habits of the Asians who are keener on innovative technologies, and the variety of content providers that attracts an increasing number of mobile services users.

Interestingly in Asia, the investments were restricted to the lower priced 3G licenses. The service providers, therefore, are able to offer their services at a much lower cost. Especially in China and Hong Kong, where mobile technology was introduced at a later stage and the 2G CDMA standard was adopted initially, the transition to 3G required little investments for the upgrade of the networks. This allows them to offer the services at a lower cost compared to the potential

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