

(Cover letter in standard business letter format)

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December 11, 2002

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Dear Professor Ramos:

Attached for your review is an analytical report entitled "M-Commerce: An Emerging Phase of E-Commerce."

The report views m-commerce as a new phase of e-commerce, made possible by the proliferation of wireless Internet-enabled devices. It evaluates the benefits that mobility brings to e-commerce and the present hurdles that confront m-commerce. The report ends with some recommendations for making m-commerce viable.

Your critique is warmly welcome.

Yours truly,

Andy

Andrew Opoku-Mensah

(Sample business report using footnotes)

M-Commerce: An Emerging Phase of E-Commerce

Andrew Opoku-Mensah

GRBUS 505-61: Business & Communication

Duquesne University
John F. Donahue Graduate School of Business

Diane P. Ramos, Instructor
December 11, 2002

Executive Summary

The proliferation of wireless capabilities presents an opportunity for e-commerce to expand beyond the fixed-line personal computer. Mobile commerce (m-commerce) enables anyone to purchase goods and services at any time, in any place, and on any wireless device. It will increase the overall market for e-commerce.

M-commerce has yet to realize its potential. Mobile devices are among the fastest adopted consumer products of all time. Worldwide circulation of cell phones is expected to reach 1.4 billion by 2003, and half will be Internet-enabled. There are more wireless Internet devices in circulation than wired devices (PCs and laptops). M-commerce is expected to leap from \$127 million in 2001 to \$60 billion by 2007.

The primary advantage of mobile devices is a superior offering of value-for-time to users. Specifically, m-commerce brings unique benefits of ubiquity, convenience, localization, and personalization. Mass marketing opportunities go beyond retailing to advertising, news, entertainment, education, customer service, knowledge management, and more.

Despite the market outlook and benefits, m-commerce has its hurdles. The challenges include ease of Internet access, international standardization, transaction security, payment/billing services, viability of applications, and quality of Websites. Ongoing developments promise to address these hurdles to growth.

M-commerce will lift e-commerce to another level, although acceptance may remain slower in the United States (the e-commerce leader) than in Europe and Asia. To achieve potential through m-commerce, e-business strategists must:

1. Identify meaningful consumer values and design products to satisfy them.
2. Work towards standardization of networks.

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Introduction

As the euphoria that once infused all things Internet dissipates, there is still a sliver of hope: **Mobile Commerce (m-commerce)**. “The proliferation of wireless capabilities has created an emerging opportunity for e-commerce to expand beyond the traditional limitations of the fixed-line personal computer,” according to Irvine Clarke, author of a 2001 article in the *Journal of Business Strategies*.¹

A few years back, the world of the Web and that of the wireless seemed like two distinct areas, although they bore similarities in their use of technology. The development of wireless Internet-enabled devices has begun an intriguing convergence of these two worlds. Mobile commerce allows users to purchase from the Internet with a wireless device such as a cell phone or PDA (personal digital assistant). M-commerce brings to e-commerce the benefits of mobility, creating access to information, goods and services at any time, from any place, and on any wireless device. Because of these unique values, m-commerce will increase the overall market for e-commerce.

Although M-commerce has not yet realized its potential, wireless transactions could go from millions to billions of dollars in just a year or two. As students of business, we need to understand this new development to harness the benefits it brings to business. This paper explores usage and outlook trends for wireless Internet-enabled devices in Europe, Asia and the U.S. It discusses the benefits, applications and hurdles of m-commerce and offers recommendations for considering m-commerce opportunities when formulating an overall e-business strategy.

¹ Clarke, Irvine, III. “Emerging value propositions for M-commerce.” *Journal for Business Strategies* 18.2 (Fall 2001): 133-148, par. 1. ProQuest. Accessed 29 Sep. 2002 <<http://80-proquest.umi.com.authenticate.library.duq.edu/>>

Discussion and Analysis of Research Findings

Usage and Growth of Internet-enabled Devices

Mobile devices have been among the fastest adopted consumer products of all time. The number of mobile phones shipped in the year 2000 was more than automobiles and PCs combined. “By 2003, there will be 1.4 billion cell phones worldwide and half of them [c. 700 million] will be Internet-enabled,” according to one industry forecast.²

Already, IDC, a technology firm in Massachusetts, estimates that worldwide circulation of *wireless* Internet-enabled devices exceeds that of *wired* Internet devices such as PC and Laptops.³ Consumers everywhere are using cell phones.

M-commerce Adoption Trends

When it comes to e-commerce, the U.S. leads the world in almost every metric, because the U.S. market has been PC-oriented for Internet technology. Europe and Japan, on the other hand, have taken early leads in m-commerce. Some European countries, like Spain and Italy, may “leap PC-oriented e-commerce, based on their veneration of mobile phones,” and go directly to m-commerce. Mobile phones penetrated over 50% of Japan’s market in 2000 when over five million users were already connected to the Web with “i-mode” service.⁴

Although the United States is the world’s largest voice wireless market, m-commerce hasn’t taken off. Experts say that Europe and Asia are three to five years

² Clarke par. 4.

³ Lucas, Peter. “M-commerce gets personal.” *Credit Card Management* 14.1 Apr. 2001: 24-30, par. 9. ProQuest. Accessed 1 Oct. 2002 <<http://80.proquest.umi.com.authenticate.library.duq.edu>>.

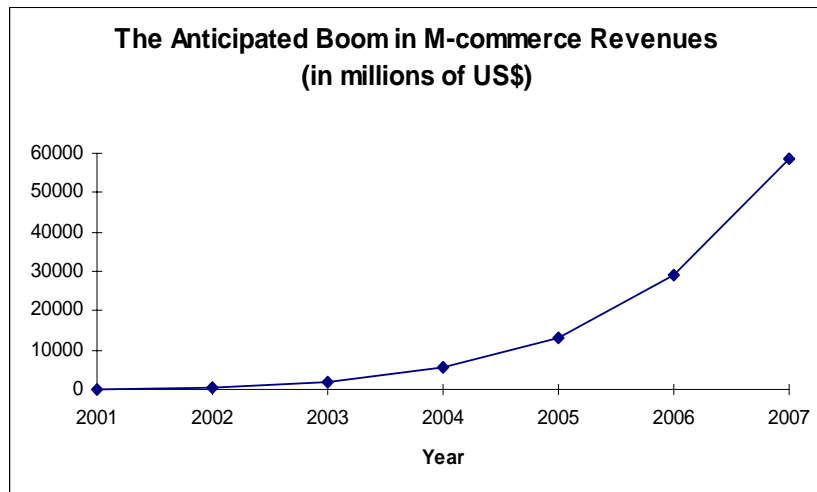
⁴ Clarke par. 5.

ahead.⁵ One factor is lower penetration of cell phones. About 40% of American households own cell phones compared to 70% in Taiwan and some European countries.⁶ A bigger factor is consumer confidence. A Jupiter survey found that only 1.4% of U.S. consumers with Internet-enabled devices had made a wireless purchase in 2001.⁷

Outlook for M-Commerce

Forecasters remain optimistic that the wireless Web will soon be as large as the wired Web of today. Some think that wireless will become the channel of choice in this decade as networks, infrastructures and devices improve. Strategis Group, a market research firm for the broadband and wireless industries, is predicting a boom in m-commerce revenue for merchants – from \$127 million in 2001 to almost \$6 billion in 2004 and nearly \$60 billion in 2007 as shown in Chart 1 (below).⁸

Chart 1:



Data Source: Strategis Group (Credit Card Management, Apr. 2001)

⁵ Lucas par. 11.

⁶ Martin, Zack and Frederick H. Lowe. "Trying to connect with m-commerce." Credit Card Management Nov. 2001: par. 9. ProQuest. Accessed 1 Oct. 2002 <<http://80-proquest.umi.com.authenticate.library.duq.edu>>.

⁷ Martin par. 19.

⁸ Lucas 24.

For comparison, Reuters estimates that worldwide consumer online sales [wired and unwired] reached \$5 billion in 2002. Just five years ago, total consumer on-line sales were \$111 million, about the size of m-commerce today.⁹ “If you look five to 10 years out, almost all of e-commerce will be on wireless devices,” says Jeff Bezos, chief executive and founder of Amazon.com.¹⁰

While m-commerce analysts are predicting that the business-to-consumer (B2C) market could go from millions to billions of dollars in just a year or two, business-to-business (B2B) continues to dominate overall e-commerce. Forrester Research listed 2002 worldwide e-commerce transactions – B2B and B2C combined – at \$2 trillion and predicts that sales will exceed \$6 trillion in 2004.¹¹

Benefits of M-commerce

The primary advantage of mobile devices is to provide a superior offering of value-for-time to users. A lengthy wait at the doctor’s office becomes an opportunity to send flowers to a loved one. Stuck in traffic? At least it is a chance to order a copy of the CD that is playing on the radio.

Irvine Clarke, a marketing professor and adviser to wireless e-commerce companies, defined four unique benefits that m-commerce brings to e-commerce.¹²

1. **Ubiquity:** “Mobile devices offer users the ability to receive information and perform transactions from virtually any location on a real-time basis. M-

⁹ “B2C eCommerce, Opportunities and Implications to 2005.” *Reuters Business Insight* (2002): On-line Synopsis. Accessed 8 Dec. 2002 <http://www.reutersbusinessinsight.com/content/rbtc0021m.pdf>>.

¹⁰ Clarke par.8.

¹¹ “Worldwide eCommerce Growth.” *Global Reach* 23 Nov. 2001. Accessed 8 Dec. 2002 <http://greach.com/eng/ed/art/2004.ecommerce.php3>>.

¹² Clarke pars. 10-18.

commerce users will have a presence everywhere, or in many places simultaneously, with the same level of access as fixed-line technology.”¹³

2. Convenience: “People will no longer be constrained by time or place in accessing e-commerce activities.”¹⁴ For example, a manager can use his cell phone to call a cab and, while on the way to the airport, book a ticket for the next available flight to his destination.
3. Localization: Through a technology known as global positioning, service providers will be able to identify the location of the user, since mobile devices like cell phones are usually left on. M-commerce providers will be able to send and receive information relevant to the current geographic position of the user.¹⁵ Very soon, as you pass a McDonald’s, your phone might give a loud beep. You may look on the screen and read, “Two-for-one special. Stop by for two Big Macs today for the price of one.”
4. Personalization: Mobile devices are typically one person’s property. This makes them ideal for individual-based target marketing.¹⁶ Based on a prior arrangement or customer profile, for example, a ticket master could send prospective customers a message about available tickets and their price, and the customer could purchase by cell phone.

¹³ Clarke par. 12.

¹⁴ Clarke par. 13.

¹⁵ Clarke par. 14.

¹⁶ Clarke par. 17.

Applications for M-commerce

Today, M-commerce applications include news, sports scores, stock prices, travel information, weather, banking, and e-mail. While retailers salivate over the potential dollars from dial-up purchasing, other marketers are developing applications beyond traditional buying and selling. For example, in 2001, the University of Twente (Netherlands) was working with technology companies to extend e-learning programs to students via their mobile phones.¹⁷

Clarke identified a range of applications that capitalize on mobility and categorized each possibility by value proposition as recapped in Chart 2 (below).¹⁸

Chart 2.

Potential M-commerce Applications by Value Proposition			
<p>Ubiquity</p> <ul style="list-style-type: none"> ▪ News ▪ Sports scores ▪ Stock prices ▪ Travel information ▪ Weather 	<p>Convenience</p> <ul style="list-style-type: none"> ▪ Banking ▪ Communication ▪ Entertainment ▪ Gaming ▪ Mobile payments ▪ Retailing 	<p>Localization</p> <ul style="list-style-type: none"> ▪ Coupons ▪ Customer service ▪ Dispatch ▪ Scheduling ▪ Discounting ▪ Emergency help ▪ Supply chain management 	<p>Personalization</p> <ul style="list-style-type: none"> ▪ Advertising ▪ Database development ▪ Knowledge management

Source: Irvine Clarke III. "Emerging Value Propositions for M-commerce." *Journal for Business Strategies* (Fall 2001)

Although the mass market appears to be strong, m-commerce has not reached its anticipated potential, due to some hurdles.

¹⁷ Dorsey, James M. "E-commerce (A Special Report): The Business---Going Mobile: A Dutch University Aims to Teach Students on the Go." *The Wall Street Journal* 12 Mar. 2001, Eastern ed.: R-20.

¹⁸ Clarke 137.

Hurdles to M-commerce

M-commerce has its set of limitations, starting with some practical constraints on wireless technology that have slowed consumer acceptance.

Quality of access and ease of use are major hurdles to consumer adoption. A cell phone and PDA cannot supply the same quality of Internet access as PCs. The small screen sizes and poorly displayed graphics on mobile devices make navigation difficult. Surfing by dial-up modem on a wireless device is slow and frustrating. In addition, some models overheat.

Standardization is another challenge. In the U.S., wireless carriers work on different network standards, while in Europe and Asia, a common standard (GSM) is used. Lack of uniformity makes it harder to create international m-commerce coverage.

Additional challenges include:

- security for transactions
- payment and billing protocols and services
- viability of m-commerce applications and business models
- quality of wireless-enabled Websites

Despite these hurdles, m-commerce is possible. There are on-going technological developments that promise to address the practical limitations of wireless devices to make them user-friendly. These include the anticipated “third generation (3G)” wireless infrastructure, and general packet radio service (GPRS), a standard for wireless communications that is more than ten times faster than the current systems and suited for small bursts of data sent in mobile commerce.¹⁹

¹⁹ Yorulmaz, Tunc, and Donald Ragas. “The m-commerce roadmap.” AFP Exchange 22.4 Jul./Aug. 2002: 40. ProQuest. Accessed 8 Dec. 2002 <<http://80-proquest.umi.com.authenticate.library.duq.edu>>.

Conclusions

Commerce will go mobile in the not-too-distant future. Implementation and growth of m-commerce in the U.S is slower-than-expected as compared to Europe and Asia. Hence, m-commerce may not reach the projected revenue levels in the short term. Technological developments such as the 3G wireless, GPRS and Japan's "i-mode" model of cell phones will eliminate most of the hurdles to m-commerce.

M-commerce might not be the next big thing as many anticipate. It will, however, lift e-commerce to another level. The unique values of ubiquity, convenience, personalization and location will open the market to new applications and services. It is up to e-business strategists and up and coming business leaders (like us) to design business models that will realize the potential of m-commerce.

Recommended Action

To realize the potential of m-commerce, e-business strategists need to:

- a. Identify meaningful consumer values and design products to satisfy them. Key issues to consider include:
 - i. Establishing trust, and
 - ii. Addressing security concerns of consumers.
- b. Work towards standardization of networks.

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