Mobile Commerce Opportunities

The Internet’s arrived. The Net has changed everything, and nothing. Business has migrated to the Net, time has speeded up, expectations have been reset. And now there’s a fresh rumble sounding down the technology road. The noise is all about mobile commerce. Is it just the massed empty stomachs of the technology crowd, eager for a new feast? Or is it the next vehicle to a brighter business future?

This chapter treats mobile commerce as a vehicle aboard which businesses of all kinds need to jump. We look at why the world is turning mobile – how the change to the mobile era is already well advanced and picking up speed. We consider how businesses can design opportunities in this emerging space by recognising the distinctive features of the mobile channel and respecting its differences from traditional channels. We present a new generic business model for mobile commerce that uses concepts of location, time, and mission as its touchstones. Customer relationships, and how they are created and owned in the mobile channel, are examined. We finish our survey of the space with a look at mobile commerce’s headline effects on existing enterprise system costs and on individual users’ interaction styles.

Why the World Is Turning Mobile

We start our exploration of the business opportunities offered by mobile commerce with a portrait of the emerging mobile lifestyle, introducing some scenarios of wireless life that have already taken
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hold in markets around the world. We look at how businesses are beginning to respond to these changes, how explosive growth is triggered in mobile networks, and the key market drivers that are motivating the leaders in the mobile commerce space. Last, we question the classic model of electronic commerce and measure its effectiveness for decision makers in the face of the forces unleashed in today’s mobile channel.

Mobile and Personal: The Emerging Mobile Lifestyle

Ted’s time arrives in niches these days. Waiting for a traffic light to turn, riding in a lift, switching his attention from one work project to another – this former dead time is full of business. Ted has a real-time graph of his investment portfolio repainting itself in the palm of his hand. If he wants to alter his exposure he can buy and sell stocks just by changing the shape of the graph with a stylus. He also chooses to receive alerts about consumer products he might want to buy, based on his purchasing preferences and his current physical location. At the moment, some invisible software agent program is on the lookout for that model classic car he’s chasing. Ted is also bidding in an auction for some used construction equipment, so he can use a spare moment to check the current bid on the lot and consider his next move.

When Ted takes an action, such as changing his investment portfolio, a bundle of transactions ripples its series of changes to a disparate collection of remote systems. At the same time, one cent of his current fortune shatters into slivers, the fragmentary payments flowing to the intermediaries who make this all possible: network operators, banks, brokers, retailers, portal owners. Ted makes thousands of such transactions every day, and interacts with tens of thousands of systems. He is continuously connected to an enveloping intelligent environment. Information, entertainment, and commerce flood the spaces in his life, wherever he is, whatever he’s doing. He can switch it all off; but he can’t make it go away.

Ted has a strange kind of liberty. He is free, yet tracked; mobile, yet contained. He lives in a world that is built of a myriad decision
points and whose dimensions are time, location, and mission. He
inhabits mobile commerce.

This scenario is already a daily occurrence in Japan, where major
 cellular phone operator NTT DoCoMo's i-mode wireless Internet ser-
vice launched in February 1999. Growth of subscribers to i-mode has
been phenomenal. The first million subscribers were acquired during
during six months of operation; thereafter the population curve climbed
sharply, with the four million mark achieved around the first anniver-
sary, and the five million mark a bare month after that. Subscriber
numbers continue to climb at the rate of around one million per
month. Users of i-mode have access to services such as banking, secur-
ities trading, airline reservations, and consumer purchases, as well as
information and entertainment services ranging from yellow pages to
horoscopes. By October 2000, 12.78 million users were generating
revenues of $3.3 billion — around $300 each.¹ Looking beyond the
consumer market, we find that i-mode is being used to connect field
staff with corporate systems, so that logistics company DAT Japan, for
example, has armed all its delivery staff with Web and e-mail access.
DAT Japan claims a 90 percent cost reduction in call center costs
from a $90,000 investment.²

Elsewhere in Asia, subscribers to Hong Kong's mobile service
Sunday can receive offers from shops as they pass them in the mall.³ In
North America, Bank of Montreal customers can not only conduct
their personal banking affairs by cell phone, they can also go shopping
via the bank's partner Indigo. Meanwhile stockbrokers in the United
States are rolling out wireless broker services that allow PDA (Per-
sonal Digital Assistant) users to make trades wherever they are, whenever
they want. In Europe, teenagers send millions of text messages to
each other using their cell phones' SMS (Short Message Service) func-
tion, conducting one-to-one and group conversations that fly beneath

¹. Ian Murphy, "i-Mode's youth market could wipe out Wap", Computer Weekly, 30
November 2000.
². Presentation by David Macdonald of NTT DoCoMo, Mobile Commerce (organ-
³. Falk Müller-Veerse, Durlacher, Mobile Commerce Report (no date; 1Q00).
the radars of their teachers and parents, and habituating themselves for a lifetime of mobile service usage.

Moving to Mobile

Though different geographical areas are at different stages of development, organisations from all sectors and nations are now responding to the growing market for mobile commerce services. For those that have already made the transition to offering services over the fixed Internet, adding some kind of basic service for the wireless channel is a small but significant step.

The consumer appetite for mobile services dictates that the leading banks in northern Europe, for example, cannot afford to ignore the new generation of WAP (Wireless Application Protocol) phones. While a bank’s announcement that it would introduce a WAP banking service might lift its stock price in the first quarter of 2000, by mid-year, the absence of a WAP strategy was more likely to depress bank valuations. WAP also began to play a market enlargement role for European banks: *The Banker* reported in April 2000, that “MeritaNordbanken [...] is heavily investing in its WAP strategy because it has saturated the customer base that uses PC Internet banking in its domestic market”.4 Clearly, for banks at least, “wait and see” is not a viable option when it comes to mobile commerce. However we will suggest in this chapter that simply being first into the mobile commerce market will not guarantee success. Mobile commerce is a technology-enabled phenomenon, but sustained success in mobile commerce is a business issue.

We examine a wide range of mobile commerce applications in this book, but it is worth pausing here to ask why banking should be one of the leaders of mobile commerce. Personal banking transactions, after all, are rarely urgent, and being able to pay bills from a mobile device rather than hunt for a checkbook makes it no less likely that a customer will conduct her affairs more efficiently. Why should a mobile banking service be a “must-have” for the consumer market?

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From the bank’s point of view, the wireless channel can be seen as a natural extension of existing phone and Internet channels. Customers increasingly choose the mobile mode as their preferred means of connection with all types of information, so the customer’s bank must represent its relationship in that channel. This may be a positive impulse, but it may also be a rationalisation of a deeper pull from the customer. In the main, customers use banking technology to check the status of their accounts. Aside from their primary service as a convenient, automated wallet, ATMs allow customers to refer to their balances without keeping their own records. Consequently, balance checking outranks all services apart from cash dispensing in ATM networks.

The availability of balance information via a portable device makes the customer’s balance an item that can be checked at any time, almost on an instinctive basis. In fact, balance checking can rapidly become as habitual as glancing at the time on a watch. We wear personal watches because we each own our own time, and we need constant connection with it. Similarly, we own our own money, and we need to keep seeing it. This intimate, emotional relationship is an example of the personal forces at play in the mobile commerce arena.

The theme of personal connection runs throughout this book. A soft issue that may not immediately fire the minds of a pure technologist, the individual user’s willingness to interact with a mobile service is the major factor in composing and executing effective mobile commerce strategies. We break this willingness down into a number of component factors. The personal circumstances of the user, the physical means with which she interacts with a device and a service, and the complex of goals that make up her momentary mission, all interact to flex the mobile commerce project in ways that do not affect fixed Web-based initiatives. The personal factor is the twist that stops mobile commerce being a simple transition of “traditional” Web-based e-commerce to a wireless channel.

Network Effects

The emergence of this mobile, personal world is often charted in terms of the growth of mobile devices. These numbers are worth rehearsing, not only because they give some measure of the ubiquity
of mobile connectivity, but also because they lay the foundation for the core commercial dynamic of mobile commerce, which is what economists call the “network effect”.

According to Datamonitor, mobile phone subscriptions in Europe totalled 133 million at the end of 1999, and were forecast to grow to 270 million by 2005.\(^5\) Launching their WAP service in February 2000 in the United Kingdom, Amazon said it expected there to be 48 million suitable phones by 2002.\(^6\) Nokia, the leading WAP phone manufacturer, estimate this number at one billion by 2005.\(^7\) According to industry researchers GartnerGroup, the mobile channel may account for worldwide e-commerce transactions worth up to $1.8 trillion by 2005.\(^8\)

Why has mobile phone penetration grown so steeply in regions where common technology standards are available, such as the European GSM zone? And does the growth curve for device penetration tell us anything about the potential for mobile commerce? Economists explain the growth patterns of organisations such as phone networks by referring to “network effects”.\(^9\) In fact, network effects apply to many kinds of participatory systems: “network” is being used as a structural term rather than a strictly technological one. As Figure 1-1 shows, in a network in which all nodes can communicate bilaterally with each other, the addition of a single new node has a high impact on the overall value of the network. The number of potential interactions for a network with \(n\) nodes is \(n(n-1)\). Increasing the value of \(n\) by 1 increases the potential interactions by \(2n\).

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7. Noted throughout Nokia’s public information; see, for example, http://www.nokia.com/networks/mobile/get_more.html.
In other words, systems such as a phone network become more powerful for all users as subscribers sign up. If you are the only person in the world with a phone then the system has no value. If you have a phone that only will work in certain geographical areas, or with constrained subscriber groups, then the system's value is circumscribed by its candidate members. But if it is simple and compelling for other people to join the same phone service, regardless of where they live or which device they choose to own, then the service quickly becomes a major arena of exchange.

The Internet is our closest model of the network effect in action. Commercial online information systems and electronic mail systems existed before the Internet migrated to the public domain. These pre-Internet services could not achieve true mass market status because they formed a fragmented space. The Internet, and particularly the Web, took off because it uses common standards that allow anyone to become a user and a producer of content or services.

However, as economist Nicholas Economides points out, technical compatibility is not the sole driver of network effects. Equally important is users' expectations of the network's growth. By buying, for example, a WAP phone, a user is betting that he is making a main-
stream decision. No one wants to be toting Betamax in a VHS world, because they won’t be able to share content with others.

We can see expectations, and the management of expectations, at work in the leading Internet players’ wars over instant messaging standards. Even clearer is the abrupt take-off of SMS usage in Europe that occurred when the network operators began to deliver messages across network boundaries in early 1999. As soon as the “home network” constraint was lifted, a true – and huge – “network” rapidly established itself. European users now send some 2 billion SMS messages per month.

Consumers buy phones primarily to talk, of course. Some commentators wryly point out that the “killer app” for mobile commerce is voice communications. But as mobile phones mutate into wireless data devices, network effects start to apply at the service level. If the mobile device that you buy is technically commerce-enabled, the basic determinant of your mobile commerce behaviour will be the availability of parties with whom to transact. If, for example, you want to do comparison shopping via a mobile device, you require that retailers be represented in the mobile commerce universe. You might even prefer a comparison shopping service to be available in the same channel; but again, you are more likely to use such a service if more than one exists.

The upshot of applying network effects to the mobile commerce arena is that, in general, mobile commerce initiatives experience a lonely period of unnerving quiet before encountering sudden explosive growth. In the European WAP market of 2000, services experienced slow growth due to the poor availability of WAP phones and consumer fears of buying into technology that would soon become obsolete in the wake of successor technologies. Yet the device manufacturers promise to prime the market by ensuring that every cell phone sold by the 2001 timeframe is WAP-enabled. Mobile commerce capability will therefore begin to arrive in mainstream consumers’ hands whether or not they explicitly ask for it. As commerce becomes a default feature of the mobile device, network effects pull businesses into the game. Despite localised uncertainties about timing and technology, few businesses can afford to ignore the potential of
the mobile channel and the market drivers that are accelerating its emergence.

Market Drivers

Mobile commerce is being driven by a number of distinct yet interrelated forces on the consumer demand side. As we have noted, the growth in ownership of connected devices provides potential critical mass. Three additional factors contribute to the take-off of mobile commerce: changes in the consumer funding model of mobile services, the establishment of fixed electronic commerce as a business phenomenon, and the accelerated service development environment ushered in by the Internet.

Before considering these factors, we need to note one market difference that favours the development of mobile services in Europe in contrast to the U.S. market. In Europe, a user calling a cell phone pays the call charges, whereas in the United States the cell phone user pays incoming call charges. As a result, European cell phone users are more likely than U.S. users to keep their phones switched on all day and to make sure that their friends and business associates have their number. Cell phone numbers in Europe have distinctive prefixes, rather than area codes, so a user always knows when he is calling a cell phone rather than a fixed phone. European mobile commerce service providers are advantaged over their American counterparts in addressing a market already committed to extensive daily cell phone usage.

The breakthrough growth factor in many mobile service markets has been prepaid voucher (PPV) contracts. PPV delivers a certain volume of calls with the phone when it is purchased. Postpaid billing contracts require upfront customer agreements, bank account details and credit checks, whereas PPV phones can be bought for instant use. This makes them particularly suitable for the youth market. Parents can buy PPV phones for children safe in the knowledge that they cannot run up unreasonable bills. Top-up vouchers extend the usable life of the phone in a manageable manner and also help to maintain a branded real-world relationship with the user. Prepay has commoditised mobile services, making mobile phones affordable items of per-
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sonal equipment, and creating an electronic personal channel to a huge market of consumers. Many of these users will not be fixed Web users.

The second market driver is the success of fixed e-commerce itself. Consumers from all walks of life have embraced Web-based e-commerce and now expect to conduct transactions via electronic means. Using the Web has become a habitual daily part of work and private life for millions of consumers for whom mobile commerce promises a closer integration of online activity with other tasks. The fixed Web at once addresses and further stimulates users’ desires for services. Any new consumer product or service must now place the Net in the foreground of its plans, regardless of its basic proposition. For companies offering business services, failure to provide an online component is unthinkable. Business has migrated to the electronic channel; mobile extends the electronic channel.

E-commerce has also created a new class of commercial organisations whose only effective existence is online. Companies as diverse as Yahoo! and buy.com can exist only in the context of the e-enabled world. The expansion path for pure Internet companies naturally lies in the direction of leveraging new electronic channels. Each new channel that can be recruited to deliver services to the market wrings additional profitability from existing infrastructure, processes, and expertise. The mobile channel is the logical arena for pure Net plays to enhance the value of their brands.

The third market driver that we consider here is time to market. While the Internet has irrevocably changed consumer behaviour and expectations and created a new layer of Internet-dependent companies, it has also changed business fundamentals forever. The change is not so much at the surface, where established enterprises seek to reposition themselves for the Web, nor is it discernible in the transient bandwagon effects of companies striving to be seen playing in the Internet space. Neither is it yet noticeable as savings in the supply chain, since many of these have yet to be proven. Digging deeper, we find that the one factor that has changed for all players is time, and in particular, time to market. The Internet economy has accelerated the development and deployment of offers and brands, shrinking the standard period of innovation. Startups expect to introduce service innova-