Chapter II

Canada:
Mobile Commerce
Under Construction

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Abstract

This chapter sketches the Canadian mobile commerce space. Relative to other parts of the world, Canadians have been slower in their embrace of the brave new wireless world. The Canadian mobile commerce market is characterized by relatively high costs for consumers combined with inflexible pricing strategies and the rather limited content available for wireless communication and commerce. In addition, limited network speed and robustness to handle more advanced services remain obstacles for wider application rollout and adoption. As a result, the Canadian market for mobile communication and commerce will remain dominated for some time to come by consumers' demand for reliable and low-cost voice services.

Introduction:
Mobile Communications in Canada[1]

Canada's telecommunications market is characterized by a relatively strong growth in wireless services, high levels of penetration of broadband Internet services and moderate competition for local and long-distance services (Budde, 2005). A recent slowdown in revenue growth for the industry as a whole is due to increasing competition that puts pressure on prices and fuels investment in product and service innovation. Together with wireline services, such as cable and direct-to-home, and multi-point distribution systems (DTH/MDS), the wireless segment has driven growth in the communications service industries. Together, these three market segments account for more than a fifth (up from 14 percent in 1998) of the entire communications service market in Canada (*Statistics Canada*, 2003). Revenue in the resellers, satellite and other telecommunications segments has remained relatively stable since 2001.

Canada's mobile industry has been expanding significantly from its inception and, according to Informa Telecoms and Media Group (2005), demand is expected to remain strong for the foreseeable future. This assessment is likely to hold true as currently only just above 50 percent of Canadians (about 15 million) have access to a wireless device and subscribe to wireless products and services.[2] Hence, with regard to wireless adoption, Canada ranks quite low internationally, leaving room for growth.

One reason for such slow and low adoption of wireless services is the inflexible and comparatively high cost structure in the Canadian cell phone market, protected by what could be called an oligarchic market structure. Within such a market, lowering price points or pushing different payment models, such as the prepaid phone card, to attract higher volume of what are typically lower margin customers, is not essential. In addition, wireless operators have invested a rather modest C$12 billion in infrastructure and services since 1990 (Informa Telecoms Media Group, 2005). Yet, in 2003 alone the Wireless Service Providers segment, which in Canada includes Bell and its partners (Bell Mobility, Aliant Mobility, MTS Mobility and SaskTel Mobility), TELUS Mobility, Rogers AT&T Wireless, Microcell Telecommunications Wireless services as well as paging companies and other radio communication carriers, generated C$8.2 billion in revenues (*Statistics Canada*, 2003). Relative to the total economy, the telecommunications service industry's *total* share of the economy's capital investment was 2.9 percent in 2003, its lowest level over the past seven years (*Statistics Canada*, 2004).

The Canadian market is currently split between the CDMA and the GSM/GPRS network standards. Among the dominant carriers, Bell Mobility and Telus use

CDMA (or updated versions such as CDMA 2000 1xRTT or CDMA 1xEV/DO) while Rogers AT&T and Microcell (acquired by Rogers in 2004) runs on GSM/GPRS (while phasing out its TDMA network). Rogers AT&T has initiated efforts with its United States partner, AT&T, to enhance the Canadian and United States networks by introducing EDGE (enhanced data rates for GSM evolution) capability across the network. Rogers AT&T claims this to be a 3G network enhancement, but according to the ITU (International Telecommunications Union) the data rates for 3G have to be 384 Kbps and above, which EDGE does not provide. So, although EDGE is a 3G technology, the Rogers network is a true 2.5G enhancement. The other carriers follow the United States model and are moving towards CDMA 1X standards with comparable transmission speeds.

In the following sections we first provide a brief historical context for the emergence of Canada's mobile commerce industry. Then we discuss current success stories in the Canadian mobile service business and subsequently place our observations in the CLIP framework. Finally, we offer our views on the future direction of the industry and respective managerial opportunities.

Mobile Commerce in the Canadian Context

Mobile commerce is comprised of many kinds of wireless services, driven by different technologies that operate within various frequency bands. Four major wireless service providers — Rogers Wireless, TELUS Mobility, Microcell and Bell Mobility (see Figure 1) — offer such services in Canada.

Figure 1. Wireless market share by wireless company, 2004
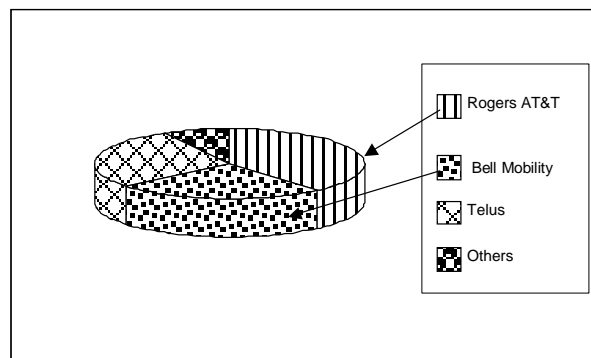
Source: *Statistics Canada* and companies' annual reports

*Figure 2. Growth in wireless subscriber base relative to residential and business wirelines, 1988-2003*
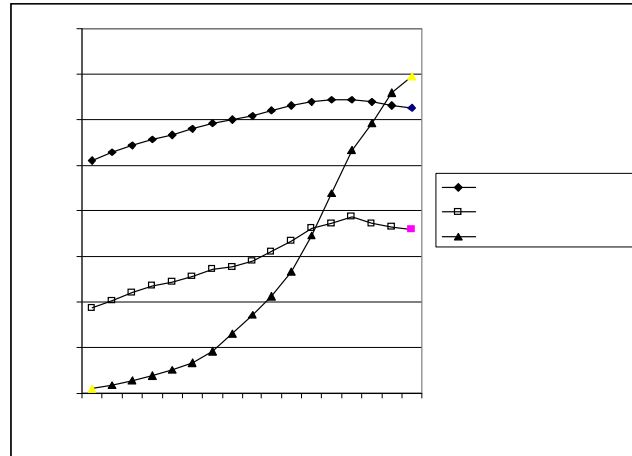
Source: *Industry Canada*, Survey of telecommunications service providers (April, 2004), and Buttle (2005). Residential and Business line numbers for 2003/04 are based on estimates by Industry Canada and NBI/ Michael Sone Associates (2004).

In 2004, however, Rogers Communications Inc. acquired Microcell, taking over its subscriber base and the Fido brand. Since their inception in 1988, all of the incumbent telecommunication service providers have increased their wireless subscriber bases. Since 1999, the increase in the number of subscribers has been particularly robust with annual growth rates for the national wireless service providers of more than 20 percent (see Figure 2).

The steady growth of the wireless subscriber base has been accompanied by a steady decrease in prices, thus decreasing the average contribution per user to overall revenues from almost C$80 in 1994 to below C$28 in 2004 (Miezejeski, 2004). As a rough approximation of a customer's wireless bill, declining average revenue per customer means not only falling prices for existing services but also underscores the difficulty of wireless service providers to market new value-added, high-margin services to new and existing customers. However, in the past two years average revenues per customer have stabilized as companies now focus on retaining higher margin customers rather than acquiring new ones. A strategic emphasis on revenue growth to the detriment of aggressively adding new customers may indicate that the market is maturing, even though the teledensity indicator of wireless subscribers is still just above 50 subscribers per 100 inhabitants (Miezejeski, 2004).

Figure 3. Telecommunications services operating profit margin 1997- 2004
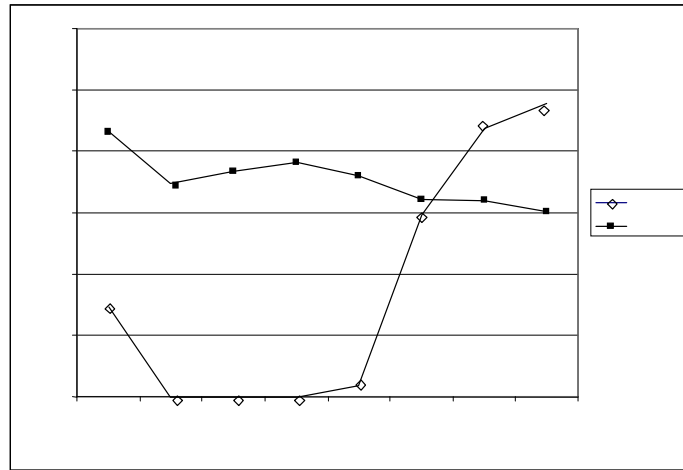
Source: *Industry Canada*, Survey of telecommunications service providers
(April, 2004), and companies' annual reports.

The wireless segment had experienced negative operating profits due, in part, to the significant start-up costs associated with the introduction of the digital Personal Communications Services (PCS) network. Operating profits significantly improved in 2002 and have since surpassed the operating profit margins of the wireline segment. This is largely due to a significant drop in capital expenditures per customer from previous years.

At the end of 2004, the wireless service provider market presents itself as transparent and is largely divided among three remaining big players in Canada–Rogers, Telus and Bell Canada. Competitive pressure in the wireless market has been moderate, and with the loss of Microcell and their flagship brand Fido, it is unlikely to increase. As one commentator puts it (Englehart, 2004), "[L]ocal telephone competition in Canada has been a flop. The incumbent telcos have nearly all of the market after seven years of competition. Almost all of the competitive local exchange carrier (CLECs) have become insolvent and many have disappeared." With respect to mobile commerce and the wireless market, the combination of sustained profitability, uncertainty about what wireless services, phone features, and applications consumers really want, a strong broadband-based Internet presence and absence of high competitive pressures to innovate provide for a less dynamic market environment in Canada than perhaps in other parts of the world.

One of the unique features of the Canadian market in general, and the telecommunications marketing in particular, is the regulatory constraints put on

foreign companies interested in competing. Foreign ownership is limited to 25 percent, which means that the existing oligarchic market structure is relatively safe from foreign threats. However, an interesting development will be the arrival of Virgin Mobile in the guise of a mobile virtual network operator (MVNO). In a deal with Bell Mobility, Virgin Mobile rents wireless capacity rather than build its own network. It is a model that has been known in Europe but took longer to develop inroads in Canada because none of the big carriers wanted to open up the market. It can be expected that Virgin Mobile will shake up the market and increase competition, especially for the lucrative youth market.

Successful Services
in Canada's Mobile Sector

As Goggin (2004, p. 2) observes, "[C]ontemporary soundscapes now feature not only voice calls in previously quiet public spaces such as buses or restaurants but also the aural irruptions of customized polyphonic ringtones identifying whose phone is ringing by the tune downloaded." In Canada, cell phone use, while prevalent, does not yet have the same public pervasiveness it has in other parts of the world. It is far from absent, of course, but compared to Berlin, Rome or Tokyo, where busses and subways, waiting lines, town squares, cafes, university dining halls and high schools are considered ideal space/time configurations for eclectic cell phone uses, Toronto seems conspicuously empty with wireless chatter, frantic multimedia- and text-messaging and absorbed game-playing.

SMS, for example, one of the most successful applications in Europe, has been a slow starter in Canada. A recent Ericsson survey (Ericsson Consumer Lab, 2004) reported that only four percent of Canadian wireless phone users report sending or receiving text messages once a day or more. Only about half of all cell phone users send SMS messages at least once a week. On the other hand, North Americans claim to spend about 49 minutes a day talking on their cell phones, which is almost twice the global survey's average talk-time of 27 minutes. Cost remains the main reason for this different usage pattern in North America. Voice service is relatively inexpensive, with flat fee plans that provide users with a set amount of weekday minutes (typically between 100-1,000, depending on the price of the plan) and unlimited evening and weekend time. Such a price/usage structure replicates in essence the fixed-line service plans in Canada, which charge consumers a flat fee for unlimited local calls and a per-minute fee for long-distance calls; SMS, in comparison, is relatively expensive. Hence, unlike other parts of the world, in Canada the economic incentive to

switch modes of communication from voice to the somewhat cumbersome and slow text messaging does not exist to the same degree.

Furthermore, the slow adoption rate of innovative services such as SMS has to do with the fact that WSPs showed little interest in compatibility between services, hoping that theirs might become the standard. Thus, interoperability between systems (enabling consumers of different carriers to exchange short messages) was not achieved until 2002, when carriers looked to Europe and noticed that almost 15 percent of WSPs' profits came from the use of the short messaging service. As a result, wireless carriers pushed for interoperability between systems to enable short message exchange that was independent of the digital wireless technology of the sender or receiver. In April of 2002, Bell Mobility (CDMA), Telus (CDMA and iDen), Rogers (TDMA, GSM/GPRS) and Microcell (GSM/GPRS) set up the CMG Interoperability gateway, which enabled short messages exchange between any cell phone on their combined systems (Crowe, 2002).[3]

While interoperability was established for SMS, the existence of two network standards has also hampered the development and functionality of other complex interactive network applications (i.e., applications that do not run from the handset), such as Multiplayer games or mobile banking services. As a result of this, and a cost structure that favors voice service, the market for data transfer is comparatively small. Yet even as domestic demand for mobile communication services, productivity applications and entertainment content may remain limited for the foreseeable future, Canada is home to a number of companies like AirG, one of the most successful mobile entertainment content supplier companies, headquartered in Vancouver, British Columbia. While AirG provides games and multimedia content to Canadian carriers, with some exclusively for Bell Mobility, the company sources and sells globally.

Mini Case Studies: From the Canadian Mobile Desert

As Dholakia, Rask and Dholakia state in the opening chapter of this book, m-commerce refers to monetary transactions conducted via a mobile telecommunications network by employing devices such as mobile phones or palmtop units. For m-commerce to happen, at the minimum, the device and the network should be configured to enable communications (C), information (I) exchange and payments (P). In the Canadian context, such configurations are still somewhat limited. Yet, some m-commerce applications are beginning to emerge. We preset case studies that are representative of the emerging models in the Canadian market. The study of Paymint exemplifies the use of the phone as wallet. Another case study relates to Research in Motion's (RIM) BlackBerry device and the versatile communication capabilities it provides. The case of Swordfish

presents the small but trendy market for location-based entertainment applications, while the Instant Talk case features a voice-based, multiple-user communication service by Telus.

Paymint

Monday afternoons are a hectic time for Angela Smith, a freelance sportswriter for the *Toronto Star* and mother of two teenage daughters. At 1 pm she gets in her Chrysler *Sabre* to drive from her home in one of Toronto's sprawling suburbs to the weekly editorial meeting at the newspaper's downtown headquarters. Luckily, she finds a parking spot close to the *Star*'s facilities in one of the city's public parking facilities scattered all over downtown and prominently marked with a large green P-sign. As she enters the parking garage, she takes out her cell phone and speed-dials the phone number displayed at the entrance. An automated answering service recognizes her phone and prompts her for a password. She enters a 5-digit code and immediately receives a conformation that she has been registered in the garage. The meeting with the newspaper's sport editor is short this time, and just 60 minutes later Angela returns to her parked car. As she starts it up and slowly makes her way to the exit, she again speed-dials the parking lot's phone number to "check out." The system on the other end confirms the transaction, provides Angela with the exact duration of her stay in the garage and the amount that will be charged to the credit card associated with her phone number and password. If she is lucky, she might make it in time to watch her daughters' ice skating lessons.

Paymint is a parking service provided by Mint Inc., a software company headquartered in Toronto, Ontario that allows for a simple and convenient way of paying for parking services through the use of a mobile phone. The customer is the Toronto Parking Authority (TPA), the largest municipal parking operator in North America, which manages more than 200 parking facilities and thousands of automated street-side parking meters. In Toronto, there are two typical methods of paying for parking. The first involves paying an electronic parking meter (cash or credit card) for street-side parking; the second involves paying a human parking attendant or automated teller upon entering or leaving the parking garage. With the Paymint System, customers avoid these hassles by first parking their vehicles, then dialing a specified telephone number and entering their lot number. When a customer is ready to leave, he or she dials the number again to end the parking session. The session is then charged to a pre-authorized credit card that users specified during their registration phase. Payments can then be viewed on a consolidated on-line statement for easy tracking. The city pays Mint Inc. a commission for handling payment security, billing and collection of fees.

The adoption of this technology has been promising, especially in downtown Vancouver, British Columbia where the Paymint System has been incorporated into 80 percent of the 7,500 EasyPark lots run by the city. In Toronto, the TPA has implemented Paymint in at least 30 of the 200 Green-P downtown lots. It represents one of the first e-wallet type applications in Canada.

BlackBerry (Research in Motion)

Peter doesn't know the meaning of the word "relax." As the creative director of one of the biggest ad agencies in the country, he is constantly on the road to meet with clients, check up on designer teams and oversee implementation. Just as Peter was leaving his office in a trendy neighborhood in the east of the city to get some Sushi for lunch, he notices a beeping sound coming from his suit's breast pocket. It was his BlackBerry reminding him that he had a 12:30 p.m. appointment with the account manager and the client of his biggest current job. He had forgotten about the appointment which was scheduled a month ago, but like many other appointments over the past few days (since the largest Canadian beer company announced that it was looking for a new agency to conduct a major re-branding campaign), got lost in a deluge of new activities. He quickly ran back to his office, took the files he needed for the meeting and called a cab. In the car, he used his BlackBerry to send a message to his two team members reminding them of the meeting and what he expected them to talk about. Peter knew that unlike their cell phones, his colleagues never switched off the BlackBerry device, so they would receive his message instantly. Within minutes, he received confirmation that they were on their way to the meeting with their gameplan in hand. Peter sinks into the back seat and tries to relax as much as possible during these busy times. He still had not had lunch and decided to e-mail his client's secretary to order some sandwiches. Two minutes later his beeping BlackBerry displays a reassuring "no problem."

The BlackBerry is a hand-held mobile device created by Research In Motion (RIM), a Canadian firm based in Waterloo, Ontario. The BlackBerry is ideal for busy professionals who need to stay connected while away from their desks. The device allows individuals on the road or away from their offices to receive their e-mails instantly (always on cellular connectivity), organize their contacts and make phone calls. It also provides Internet accessibility via a fully functional web browser. On traditional PDA devices, users have to log into an e-mail program and manually retrieve their e-mails. The RIM BlackBerry eliminates the need to manually connect to such programs through what they call "push" architecture. The BlackBerry's "push" technology enables messages to be automatically and immediately routed to the hand-held device. The BlackBerry has a mini-keyboard, which makes it relatively easy to compose e-mails and text messages.

The latest BlackBerry models (7100 series in North America) have a quite large (240x260) color screen, operate on a 850/900/1800/1900Mhz GSM/GPRS network and have an integrated phone with speakerphone along with Bluetooth connectivity. The operating systems provide support for MIDP 1.0 and WAP 1.2. The BlackBerry devices and subscription plans can be purchased directly from partnered network service providers such as Rogers Cable in Canada. Shipments of the BlackBerry increased 289 percent in 2004 from the previous year, boosting the company's market share to 18.6 percent from 5.3 percent a year ago.

The BlackBerry has become indispensable among the Canadian corporate elite. Its cellular connectivity and always-on feature deliver reliable, anytime/anywhere communication and information services on a decent size screen. However, the device and usage rates are expensive, currently preventing private consumers from adopting BlackBerry devices in any significant numbers.

Swordfish

At 3 pm Peter and Claudia can't wait to get out of their midtown high school classroom and, armed with their cell phones, hit the streets of Calgary. They aim for Kensington and 10th Street, a trendy hangout for students from local colleges and universities. The district's alternative/granola/urban tech feel makes it easier for Peter and Claudia to inconspicuously disappear into their cell phone screens and launch Swordfish, North America's first location-based mobile multiplayer game. They will need to separate, though, because as of the moment they connect to the network, they are competitors in this challenging skills game, which pits the player against a virtual school of swordfish and against other players trying to get to the fish first. Peter and Claudia arrange to meet up later for dinner at their favorite organic sandwich bar a few blocks north, where they will compare the results of their afternoon's worth of fishing. As Peter says good-bye to Claudia, his mind is already racing, scheming how to make the best use of roughly three hours of playing time before they meet up again. He loads Swordfish and immediately his location is verified and the fish become visible on his screen. As he scans the screen, he sees a few smaller fish up north, probably 300 feet. They will be easy to catch, he thinks, but Claudia went in that direction when they parted and, while he contemplates his chances of beating her to them, a message appears telling him that these fish are being approached and caught by Superfly (Claudia's screen name). The good news is two much bigger fish are swimming just about 200 feet east of him and, since Claudia will need some time to reel in her catch, he should be able to get there first, unless, of course, someone else interferes; currently the area looks clear. As he gets closer to the fish, one of them, it turns out, is a Swordfish. The Big Catch! Hard to find, and even harder

to catch. It will take patience but, even if that is all he will get out of this afternoon — just one Swordfish — his high score will get a major boost, destined to move him close to the top spot in the Calgary Swordfish rankings — and finally past Claudia — at least for a few days.

Blister Entertainment Inc. of Calgary, Canada, has launched North America's first assisted global positioning satellite (GPS) game with the introduction of Swordfish, a high-tech contest that pits cellular phone users against virtual fish and other users. To play Swordfish, users need to download the game onto their java-enabled, GPS-equipped handsets first (Audiovox 8450 or 8455, a Samsung SPH-A600 or Sanyo 8100 phone), and they need to be in a Bell Mobility CDMA 1X network. The game system is comprised of three main components: the client software that resides on the phone, KnowledgeWhere's Location Application Platform (LAP) and the mobile providers' location-based system (LBS). Swordfish client software provides the gaming interface to the end-user. The first version of the game was launched in the summer of 2004. Version 2.0 was released December 2004.

Carriers charge a flat fee for the purchase and an additional usage fee of around 15¢ per scan. In addition, mobile browser airtime charges may apply. When the game is launched, the user's actual position is determined via assisted GPS and rendered on screen in relation to the nearest school of virtual fish. In order to go fishing, the user needs to physically move within range of the object, cast the lure and try to catch the fish. The game uses artificial intelligence for the creation of virtual fish and schools of fish. Hence, the objects behave relatively intelligently, depending on their type. Some will try to move away from the fisher to avoid being caught, while others struggle and fight for freedom when actually caught and skills are required to hold on to big fish.

Users can always check their scores on the phone and online and see their local and national ranking against other players. In sum, mobile multiplayer network games take advantage of high-speed networks and services that mobile service providers are eager to sell. The problem with the current game ecology is that the payment structure favors handset games rather than networked multiplayer games. In addition, the value of a network game depends on the presence of other users. Yet, presenting a typical high-technology marketing dilemma, users are unlikely to sign up if the existing user network is perceived as weak (Frels, Shervani, & Srivastava, 2003; Moore, 1991). Carriers are partly responsible for the low adoption rates of these games at the current time.[4]

Nevertheless, with network connectivity growing faster and more robust, interactive network- and location-based games are likely to become important applications, spearheading the development and introduction of immersive communications environments that operate and persist across phones and networks. And if these systems make for smooth micropayments, the early

multiplayer, multiplatform game systems could usher in a new era of mobile commerce and content (Hall, 2003).

Instant Talk

Sitting in one of Montreal's bohemian cafés savoring the short-lived silence before the evening crowd files in for concentrated espressos and urbane tête-à-têtes, John glances over the quarterly sales figures on his laptop. Selling high-end chocolate in Canada was a challenging business! After a large amount of coffee, John thinks up a way to improve distribution but he needs to check with a number of folks to verify whether his idea has legs! John reaches into his pocket and pulls out his cell phone with the Instant Talk feature available to his company's employees. With the push of a single button, John is able to access his "partner list" and send out "message alerts" to everyone he needs to talk to. Within seconds he is connected simultaneously with Paul at the head office in Utah, Peter, main supplier of milk in Calgary and Wendy, sales director of the western region in Vancouver. They are holding a virtual meeting. With everyone there, throwing around ideas and making suggestions, John refines his idea and, once disconnected, begins drafting the memo of his distribution scheme! As the café is filling up with the after-dinner crowd, John transmits the memo and heads home.

Instant Talk is a new feature offered by Telus Mobility, a Canadian wireless telecommunications provider. The Instant Talk feature allows users to use their cell phones like traditional walkie-talkies. By pressing a single button, clients can communicate immediately with one or many contacts simultaneously. This feature only works on selected handsets, therefore, for a party to be included in an Instant Talk session, an Instant Talk-enabled phone is needed. The service is targeted at businesses that want to enable employees to have instant meetings without having to travel.

To activate the service, the client simply pushes the button on the side of the phone, inputs the receiver's number or selects a client list then presses the button again. This sends an alert message to that person(s) and once received, they can begin their conversation. A unique feature of Instant Talk is the ability to create online client lists, which enable the client to talk to multiple people across the country simultaneously with the click of a button. Registering client lists is done online via Telus mobility's online account management system. In the scenario above, if John wants to get in contact with Paul in Utah, Peter in Calgary and Wendy in Vancouver, all he needs to do is to select the contact list that contains these contacts and press the call button, which sends an alert message to all three parties instantaneously. Instant Talk uses Telus's national CDMA 2000 1X network, which provides decent coverage across Canada. The carrier offers this

service as an addition to its existing PCS phone plans and charges between C$10 and C$20 for it.

Viewing Canada's Mobile Sector in the CLIP Framework

At this point in time, the CLIP framework captures many possibilities for mobile applications and services that will take many years to materialize in Canada. The Canadian mobile ecology is currently largely focused on and fueled by integrating communication capabilities and providing entertainment-based information exchange. Network coverage for mobile phones is generally good across the country and excellent in large urban centers. Communication integration is improving as new handsets can now be used to send and receive e-mail. Customers of Rogers AT&T, for example, can log into their Yahoo! accounts to check and respond to e-mail. With RIM's BlackBerry leading the way and setting standards with regard to integrating all possible communication formats, adoption of handsets will be driven by their ability to bring multiple communication formats to the consumer across platforms.

The second driver of mobile commerce and wireless business in Canada is entertainment-based information exchange. Short and multimedia messaging has seen slower adoption and growth than in other parts of the world but both information formats will keep growing and fuel the data market. Handsets are improving, adding new features such as camera capabilities and Java support, running more sophisticated games and playing diverse ringtones. Here, the arrival of Virgin Mobile could have an accelerating effect because of the company's focus on aggressively marketing mobile usage as fun and entertainment to the youth market, historically the early adopters of new services. This may include pushing more handset- and network-based games, even as network standard incompatibility issues between major carries set a barrier.

Payment services, contrary to what the Paymint e-wallet mini case above may indicate, are the exception and location-based services are almost entirely absent from mainstream consumer markets. In the payment sector of the CLIP m-portal framework (see Figure 1 in keynote chapter), banks offer mobile banking services including account balance, money transfer and bill payment. However, none of these services have seen encouraging adoption rates. In fact, some banks have already terminated development and support for mobile stock trading after recognizing that there is not sufficient interest among existing and new consumers for this service. The 724 Solutions wireless banking service, launched first in Europe and later offered by the Bank of Montreal in collaboration with

Nokia's network division, flopped while costing the bank a lot of money. Many problems driving up cost while not generating any measurable return had to do with the complexities of making such services available across different network standards. At a time when there were, in effect, three coexisting main network standards, banks had to make sure their interactive, network-based banking communication service was operational with all of them.

Similarly, even though information about strategies, investment and results of mobile initiatives is difficult to obtain, some of the MBA students at a leading business school who are directly involved with their employers' mobile initiatives confided to the author that so far consumer demand for any mobile service has been disappointing and that any future initiatives will be tested very conservatively for their profit potential. The conventional wisdom among these IT marketing professionals is that consumers simply will not tolerate the mobile device's small screen and slow connection speed while they have high-speed connectivity and intimate familiarity with the environment on their home or work computers. In addition, it should be noted that *electronic banking* in Canada is also much less prevalent and common than in Europe. It could be theorized that because of low profile electronic banking, an important socializing force is lacking that would support the adoption of mobile banking.

Location-based services (LBS) are increasingly available and are only very slowly becoming more popular, mostly among the youth segment interested in location-based multiplayer games such as Swordfish presented above. The lackluster LBS market does not suffer from a supply side problem. There is no dearth of choice for consumers interested in transforming their handsets into mobile game machines. However, closer scrutiny of actual adoption rates of some of the multiplayer games reveals very low numbers. For a good gaming experience, handsets need to be java-enabled and GPS-equipped and networks need to have at least 2.5G data transfer rates. Such requirements slow down the rate of adoption of new technologies. In addition, unlike handset games that are played locally and individually, network multiplayer games suffer from the network effect, which states that a critical mass of players is needed to make the experience valuable for everyone (Lee & Colarelli O'Conner, 2003).

More promising at this point are less complex and more functionally oriented LBSs. For between C$3 and C$12 per month, Rogers sells a user plan called "navigate mobile internet," which allows users to browse the Web, download ringtones and video clips and locate the closest taxicabs. In addition to the youth market, safety needs drive location-based traffic. Bell Mobility's Roadside Assistance service has been enhanced to include location-based technology, called the e9-1-1 in North America, which allows Bell to locate customers in case of an emergency, if they consent. In 2003, the Roadside Assistance service was the first commercial application of Assisted GPS roadside assistance technology offered by a wireless carrier in North America. Bell also has a service called

MapMe™, which uses Global Positioning System technology (GPS) and Cell Tower technology to locate the user and display a live, real-time map. The user can zoom in and out of the map, pan in all directions, display street names and get step-by-step directions from his current location to restaurants, movie theatres, ATMs, gas stations and hotels.

In sum, within the Canadian context, WSPs build the m-portal. Since charges occur on a pay-per-use basis, WSPs try to increase content of the wireless Internet, such as ringtones, e-mail accessibility (e.g., Yahoo! and Hotmail), chats or games. Promotion of these services is moderate and user acceptance comparably low, chiefly because of the perceived high costs of using them. Key limitations to more aggressive development and adoption of payment- and location-based services are found on the supply and demand sides. In the payment arena, meaningful offers have been rare and carriers, financial players and third parties appear unenthusiastic about building up a mobile commerce product line. On the location-based service side, product offers are increasing more rapidly but technology issues dampen their adoption. Upgrading to more advanced, GPS and java-enabled handsets is costly for consumers and 2.5G network rollouts (CDMA and GSM/GPRS) have been slower than expected; coverage will remain spotty for some time to come.

Concluding Remarks: Standard Barrier and the Future

Exchange students from Europe and Asia frequently comment on what they perceive as a backward mobile ecology in Canada. Undoubtedly, Canadian students are much less reliant on, and possibly more selective with, cell phones than their foreign counterparts to satisfy their communications, entertainment and personal organization needs. Mobile commerce in Canada largely consists of voice, some moderate short- and increasingly multimedia-messaging use, entertainment (single-user games) and some customization-related services (such as downloading ringtones and printing skins for one's phone[5]). With broadband connectivity at home among the highest in the world and the number of wireless networks in cafes, hotels, airports and campuses growing very quickly, PCs currently represent the preferred means of satisfying mobile communication, entertainment and information needs for Canadians. In addition, in the eyes of consumers the flat fee pricing strategy favors voice services over data transfer. Without a price differential between voice and data, text messaging, often perceived slow and tedious by the users, remains relatively unattractive.

Furthermore, in many parts of the world the mobile phone increasingly plays an important role in contemporary visual and material culture as a fashion item and status symbol (Goggin, 2004, Jan 12; Harney, 2004). In Canada, however, cell phones for the moment maintain a distinctively utilitarian appearance, while their effect on the cultural and aesthetic fabric is still relatively confined to subsegments of the population, such as younger consumers and, to a lesser degree, businesspeople.

As mentioned above, Canadians have been slower in their embrace of the new wireless services that have swept Europe and Asia, including global blockbusters like SMS and, increasingly, MMS. Our analysis of the Canadian wireless context suggests that the uniquely Canadian "mobile consumer behavior" is the result of the comparably high cost of the medium and carriers' rather inflexible pricing strategies, the still somewhat limited content available for wireless communication and commerce and the lag of network speed and robustness to handle more advanced and sophisticated services. However, attempts are being made to promote what *is* available, such as SMS, at least in some market segments. During the 2004 presidential elections in Canada, Nokia's Youth Text 2004 program sponsored an unprecedented text message initiative designed to engage young people in the issues of the federal election campaign. The program staged a number of successful live text messaging chats between presidential candidates of all parties and young Canadians across the country (Schick, 2004).

As in other parts of the world, WSPs and content providers face a lot of uncertainty about consumer preferences beyond a desire for reliable and clear voice connections. Hardware features such as wireless headsets and color screens have been successful, as have personalization features such as downloadable ringtones and printable skins. Nevertheless, surveys by Forrester show that cameras, videocams, and other doodads each right now generate interest in only smaller groups of American users (LaGesse, 2004).

It appears that unlike in the United States, where competition has squeezed profit margins on voice calls, Canadian WSPs are less pressured to introduce new services to increase the data traffic sent over their networks. Still, even for Canadian carriers, increasing the data market must have high priority to remain profitable in the long run when voice will become commoditized even here. The addition of Virgin Mobile to the carrier ecology is likely to speed up this move towards data services. Hence, features and applications will be launched in the hope that something will catch on. In the final analysis, it is not a question of whether additional m-commerce functionality will be offered to Canadians, but rather when and how.

Judging from our analysis, information- and entertainment-based services prompted by the availability of new phone features (device convergence) and faster networks are most likely to be added to the current products because the

infrastructure to deliver these products is already in place. LBSs are a promising, yet wholly unpredictable market, and one thing carriers have going for them is that they have been very cautions in managing consumer expectations for these services to forestall disappointment. Particular functional services such as roadside assistance and taxicab location will catch on sooner because these services are clearly defined in the mind of the consumer and they do not require the same technological level of sophistication that, for example, network games do.

Payment services using handheld devices will take longer. Banks, while initially relatively eager to develop such capabilities, have since learned that consumers are less interested than anticipated. In addition, banking in Canada is still relatively paper-based (checks are still a very common and often preferred method for paying rent, phone and utility bills, or government services). Electronic wire transfers have only very recently been introduced to the consumer market and are still considered a novelty(!) and, compared to their European counterparts, many years behind in the process of integrating information technology in business and consumer banking processes. Banks also face high cost hurdles and disadvantageous economies because they have to make services work across handsets and networks. In addition, the banking sector is characterized by a handful of powerful incumbents, which does not make for an overly competitive and innovative environment.

In sum, growth and evolution of mobile commerce in Canada is hampered by the co-existence of the CDMA and the GSM network standards. Once the 2.5G networks have been rolled out and users upgrade to more powerful handsets, a more viable environment for developing and delivering third-party services, especially in the payment and locatability application field, will exist. However, whether the mobile Internet i-Mode style (based on the delivery of entertainment and "fun") will take hold in Canada is another question that will have more to do with the right marketing approach than merely good technology (Moon, 2004).

Questions for Discussion

1. What are the main factors that have held back the development of large-scale m-commerce applications and services in the Canadian mobile telecom markets?

2. What actions would you recommend to expand the market for location-based services (LBS) in Canada?

3. What can Canadian companies do to leverage the global success of Research in Motion (RIM) with its BlackBerry handheld devices?

References

Budde, P. (2005). *Broadband and consumer e-commerce in Canada Dec. 2004 review*. Retrieved January 30, 2005, from http://www.internetworldstats.com/am/ca.htm.

Crowe, D. (2002). *SMS interoperability: Canada leads the way*. Retrieved November 21, 2004, from http://www.cnp-.wireless.com/ArticleArchive/Wireless%20Telecom/2002Q3-SMSInterworking.htm

Englehart, K. (2004). *No new rules: Incumbents must remain regulated if voice competition is to grow*. Retrieved January 12, 2005, from http://www.cablecastermagazine.com/issues/ISarticle.asp?id=151779&story_id=17602111609&issue=06012004&PC=.

Frels, J. K., Shervani, T., & Srivastava, R. K. (2003). The integrated networks model: Explaining resource allocations in network markets. *Journal of Marketing, 67*(1), 29-45.

Goggin, G. (2004). Mobile text. *M/C: A Journal of Media and Culture,* Jan 12, *7*(1).

Hall, J. (2003). *Multiplayer—the only mobile game*. Retrieved February 12, 2005, from http://www.3nw.com/pda/gaming/mobilegaming.htm.

Harney, A. (2004). It's the catwalk calling. *National Post,* Oct 23, p. SP4.

Informa Telecoms Media Group, (2005). *2003/2004 telecoms in Canada: Industry report*. Retrieved January 30, 2005, from http://www.telecoms.com/marlin/20001000461/MARKT_EFFORT/marketingid/20001199036?proceed=true&MarEntityId=1106931287073&entHash=1001dc55761.

Lab, E. C. (2004). *Ericsson study*. Retrieved December 3, 2004, from http://www.ericsson.com/ca/en/press/2004_11_23.shtml.

LaGesse, D. (2004). The spell of the cell. *U.S. News & World Report*. Retrieved February 12, 2005, from http://www.usnews.com/usnews/culture/articles/041129/29cell.div.htm

Lee, Y., & Colarelli O'Connor, G. (2003). New product launch strategy for network effects products. *Journal of the Academy of Marketing Science, 31*(3), 241-255.

Miezejeski, T. (2004). *Wireless in Canada*. Retrieved January 16, 2005, from http://www.intelecard.com/features/03features.asp?A_ID=360

Moon, Y. (2004). Don't just do something, stand there! *Harvard Business Review, 82*(3), 16-17.

Moore, G. A. (1991). *Crossing the chasm: Marketing and selling technology products to mainstream customers*. New York: Harper Business.

Schick, S. (2004). *How political groups could improve their online approach*. Retrieved October 12, 2004, from http://www.hillwatch.com/Media/ITBusiness.aspx.

Statistics Canada (2004). *Telecommunications service in Canada: An industry overview*. Retrieved January 28, 2005, from http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf06084e.html.

Statistics Canada (2004). *Telecommunications service in Canada: An industry overview*. Retrieved January 30, 2005, from http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf06019e.html.

Endnotes

[1]   This chapter has benefited from the excellent support of my research assistant Anthony Rotondo, for which I am very grateful.

[2]   Different surveys generate different estimates, ranging anywhere from below fifty percent (*Statistics Canada*) to just above sixty percent (Ericsson).

[3]   SMS interworking is not an issue in Europe, where GSM originated and is still the dominant wireless technology. For the Canadian carriers, there is only GSM and, consequently, only one SMS format. Interoperability is assured at every protocol layer.

[4]   A scan of the company's Website suggests that only about 40 or 50 users currently play Swordfish, most of them located in Calgary, where Blister Entertainment Inc. is headquartered.

[5]   The emergence of Top 10 ringtone charts demonstrates the popularity of this option.