Preface

Towards Fast "CLIP" Growth

This book is a product of research-based and practitioner-generated reports about the emergence and growth of mobile telecommunications and mobile commerce (m-commerce) around the world. To go into the details of how mobile communications and m-commerce are unfolding in various global regions, the chapter authors in this volume have examined one country in depth in each chapter. In addition, the editors of this book have provided overview chapters at the beginning and end of the book. The CLIP application-theoretical framework provides conceptual integration across the various countries. CLIP is an acronym for Communications (C), Locatability (L), Information (I) provision and Payment (P) processing — four core functions that underlie various mobile telecommunications services offered the world over. Mobile communications services and m-commerce applications that generate revenues over and beyond the basic charges for voice telephony all rely on creative combinations of some or all of the CLIP functionalities.

Why a Global Approach?

There are several reasons for studying m-commerce on a global scale. First, some countries have raced ahead rapidly while others (including affluent ones) have lagged behind considerably in utilizing mobile communications and commerce technologies. Second, many of the m-commerce services stop at national borders because of missing roaming agreements or incompatible network and equipment standards among the telecom operators. Users often cannot

replicate experiences with a service that they have developed in their home countries when they move into networks hosted in another country. Third, there is a great deal of national level experimentation going on with m-commerce worldwide, and countries can learn from each other's experiences. Finally, the national leadership patterns in mobile communications and m-commerce are changing. The countries that led in early-generation technologies and applications are not necessarily in the lead in the late-generation technologies and applications. There is significant learning from the experiences of mobile communications pioneers as well as from the experiences of countries that are relative latecomers with respect to the development of mobile networks and services.

The Introductory Keynote Chapter

As we note in Chapter I, the keynote chapter entitled, "Mobile Communications and Mobile Commerce: Conceptual Frames to Grasp the Global Tectonic Shifts," written by the editors of this book, the global landscape of mobile telecommunications and mobile commerce services is not only extraordinarily complex, it is undergoing tectonic shifts in terms of exploding user bases in Asia and technological cross-currents. In the keynote first chapter, we provide some conceptual anchors for this "wild" landscape. The main conceptual anchor is the CLIP framework. While not constricting the creativity of our "country chapter" authors, we nonetheless urged them to hark back to the CLIP conceptual anchors to the largest extent possible.

Our Approach to the Country Chapters

Except for the initial and the concluding chapters written by the editors, this book is comprised of "country chapters," each focusing on one country. These chapters are organized alphabetically, according to the name of the country. The subtitle of each country chapter tries to capture some key elements driving mobile communications and m-commerce in that country. For the country-focused chapters, the authors were especially urged to review and report on the emerging value-adding mobile communications services and revenue-generating m-commerce applications.

We have been very fortunate in obtaining the cooperation of "country chapter" authors who not only understand the complexities of mobile communications technologies and business models, but also have deep insights into the business

and consumer environments of the countries featured. While it would have been nice to cover every region of the world, to stay within reasonable page limits we have chosen to focus on selected countries in three major regions of the world: North America, Europe and Asia-Pacific. Within each region, we have focused on countries that are significant because of their size, innovativeness of mobile applications or both. Thus, in North America we have chapters on the U.S. and Canada. In Europe, our chapter authors provide close looks at m-commerce in Denmark, Finland, France, Germany and the UK. In the Asia-Pacific region, the chapters deal with China, Japan, India, New Zealand and South Korea. The countries were chosen for their large existing base of mobile telecom users, their potential mobile telecom market sizes in future years, their innovativeness in mobile telecom technology development and their leadership in launching new mobile applications.

We have chosen our countries to capture the range of large mobile communications markets as well as countries that have either led or are likely to lead in technologies and applications in the third and fourth generation (3G and 4G) mobile communications.

Taken together, the country chapters (and the Appendix to Chapter XIV, the concluding chapter) constitute a global comparative study bringing together the talents of a worldwide group of researchers and practitioners. A book like this makes it possible for students, scholars, and professional practitioners to get innovative ideas about new m-commerce services and to benchmark existing services. Each of the country studies analyzes m-commerce penetration, service provider prices and products, and m-portal solutions in order to lay the ground for understanding how any given country can be compared to the others in the study. Among other things, the country studies focus on the available CLIP-applications. By referring to some common conceptual anchors, but surveying diverse national experiences, this book creates an understanding about which business strategies are effective for m-commerce. In addition to the conventional market-expanding functions of mobile telecom — communications (C), information (I), and payment (P) — many of the chapters and applications also focus on "locatability" (L), the geographic dimension that adds extra value in m-commerce settings. The locatability dimension has been a technological challenge in the past but by mid-2000s, multiple ways of locating a mobile device user — via satellites, cellular coverage zones, and short-range networks — were available, and location-based services are set to expand.

Preview of the Country Chapters

Altogether, this book features 12 country chapters covering most major economic regions of the world. The following sub-sections provide a quick preview of what the readers can expect in these 12 country chapters.

Country Chapter on Canada

The first country chapter in the book, entitled "Canada: Mobile Commerce Under Construction," is authored by Detlev Zwick of Schulich School of Business at York University in Toronto, Canada. Dr. Zwick brings his intimate knowledge of the information and communications technologies sectors in North America as well as Europe to bear upon this chapter.

With over 50 percent of the population having access to wireless devices, there is a large potential for further growth of mobile communications and mobile data services. Potentially retarding further expansion, however, are several factors. These including high cost structures and pricing inflexibilities, partly due to the oligopolistic market structure that contributes to limited competition. Contributing to this problem are the restrictions on foreign ownership in the telecommunications sector, limited to 25 percent of a firm's stock. Voice is still the predominant application, with such basic technologies as SMS being used by less than five percent of users. With broadband connectivity widely available, especially in the urban areas where most of the population resides, the personal computer, rather than the mobile device, is the preferred method of Internet access. Still, the chapter indicates that mobile commerce services are beginning to gain a foothold. The challenge for mobile operators is to create a more desirable pricing structure that would encourage greater data-related usage by mobile telecom users.

Country Chapter on China

Nir Kshetri and Nicholas Williamson of the University of North Carolina at Greensboro and David L. Bourgoin of the University of Hawaii at Manoa have collaborated to develop Chapter III, entitled, "China: M-Commerce in World's Largest Mobile Market."

With over 300 million users, China is the largest and fastest growing mobile market in the world. By 2008, 50 percent of all handsets sold in the world will be produced in China. Realizing its market power in the mobile communications sector, China has developed its own 3G standard: TD-SCDMA. This home-grown 3G standard is expected to account for 30 percent of all domestic users.

Many innovative m-commerce applications were first developed in China, including the first electronic stock trading over wireless devices as early as 1998. A major obstacle to future growth of m-commerce is the limited availability of options for mobile payments. China is still largely a cash-based economy, with m-payment support structures only recently being developed. Another major challenge is that while the penetration rate of mobile phones in the Chinese coastal cities is among the highest in the world, mobile phones are relatively few in number in China's geographically vast countryside. Further restricting growth is the reliance on old technologies. Since voice is still the dominant application, decades-old mobile technologies are still some of the most profitable — and there is little incentive for many mobile operators to upgrade large parts of their networks to the 2.5G and 3G technologies needed for most m-commerce applications. Given China's rapid growth rate, however, there is no doubt these problems will be overcome. China can be increasingly expected to call the shots regarding the types of mobile technologies that are developed and deployed, not only within its own borders but also in many emerging markets.

Country Chapter on Denmark

Morten Rask, one of the editors of this book and an expert on mobile technologies based at the Aarhus School of Business, is the author of Chapter IV entitled, "Denmark: M-Commerce Experiences and Perspectives."

With a 95 percent penetration rate of mobile phones and 99 percent geographical coverage, Denmark is among the handful of nations in the world that are very intensive users of mobile technologies. SMS is a widely used service, with a vast array of applications, including the innovative humanitarian use of SMS during the 2004 Asian Tsunami disaster. Mobile operators and the government authorities in Denmark urged the Danish citizens to send messages to all the Danes they knew of who could possibly be traveling in the affected areas. By this means, it was possible to quickly account for the safety of hundreds of people. Use of SMS as a payment method has been hindered, though, by varying interpretations of government regulations. These rules currently allow just a maximum of $12 per SMS message as payment, thereby restricting the creation of higher-priced Valued Added Services (VAS). Locatability and payment features have been further limited due to the *a priori* requirement that users interact with e-commerce sites, establish accounts and give relevant permissions in order to use m-applications. Privacy concerns have dictated such requirements. For Denmark to further develop as a CLIP enabled m-commerce market, these limitations would have to be overcome.

Country Chapter on Finland

Tommi Pelkonen, straddling the academic world of the Helsinki School of Economics and the business world of the mobile commerce consulting firm Satama Interactive, is the author of "Finland: Internationalization as the Key to Growth and M-Commerce Success," Chapter V of this volume.

Nokia, the world's largest maker of mobile handsets, is a Finnish firm and therefore looms large on the mobile applications landscape, not just in Finland but also all over the world. With a small population, Finland in no longer the only testing ground for cutting-edge mobile technologies for Nokia and other Scandinavian mobile technology firms. There simply are not enough users to make the development and production of advanced handsets with m-commerce capabilities economically feasible. The only alternative, then, is to go overseas and target their products for larger markets such as those in East and Southeast Asia, North America, Latin America and the rest of Europe. With very high domestic penetration of 3G networks, though, mobile media in the form of publisher-originated content, person-to-person content, community-created content and space and location content have been very successful in Finland. With advances in mobile technologies, these applications will continue to develop further and — with the help of leading technology firms such as Nokia — will percolate into global markets.

Country Chapter on France

Pierre Vialle and Olivier Epinette of the STORM Research Group at INT-GET, France's main telecommunications research and education institution affiliated with France Telecom, are the authors of Chapter VI of the book, entitled "France: Mobile Communications and Emerging M-Commerce."

Compared with the rest of Europe, at approximately 74 percent France has a relatively low mobile telecom penetration rate. This is partially due to fact that there are just three major providers and Vodafone does not currently have a subsidiary operating within the country. Despite this, however, France is a highly innovative market for m-commerce applications. SMS is an increasingly popular application, with a 66 percent growth rate in 2004, corresponding to 24 messages per subscriber per month. SMS tariffs are based on either the per-act payment option, in which content is download from a single source, such as ring tones, or on a per-session option in which different participants are put in contact with one another, such as for mobile games or chat. Because of these flexible and innovative pricing methods, and the variety of mobile applications, France has the potential to become not only a more robust m-commerce market but also to be a base for exporting m-commerce application ideas.

Country Chapter on Germany

Chapter VII of the book, entitled "Germany: From Chart-Topping Ringtones to 3G M-Commerce," has been authored by Timo Kehr and Tobias Lührig, business executives from Germany with global experience and a keen and long-standing interest in e-commerce and m-commerce markets and methods.

Like mobile commerce ventures in various other world markets, music in the form of ring tones is extraordinarily popular, accounting for 10 percent of the music industry's revenues. Equally successful in Germany has been the development of wireless email, especially in the form of e-mail using the popular BlackBerry handheld device. Interestingly, up until the mid-2000s, the attempt to create m-payment systems has been a dismal failure. This is because Germans, who are the lowest credit cards users in the G7 nations, are simply distrustful of the concept of electronic cash. For similar trust reasons, as well as for reasons of privacy protection, location-based services have yet to catch on. For Germany to advance in the m-commerce arena, these social challenges would have to be addressed. With mobile technology giants like T-Mobile in the mobile communications field and Siemens in the handset and switching businesses, however, Germany would continue to set the pace in many mobile technology application arenas.

Country Chapter on India

Two authors with significant technology experience in Asia collaborated to write Chapter VIII, entitled "India: The Awakening of M-Commerce." Syagnik (Sy) Banerjee worked for a major mobile operator in India and Mark M. Lennon worked in several information and communications technology companies in Asia and North America.

Mobile communications were unknown in India before the mid-1990s, but by the mid-2000s India had become one of the largest mobile markets in the world. In the wake of widespread deregulation, an assortment of mobile operators has arisen. Prepaid mobile services have proved to be the most popular form of mobile offerings in India because ancillary financial systems (e.g., credit ratings) are not needed in order to quickly establish a prepaid mobile phone service account. By contrast, the subscription-based model of "post-paid" mobile telecom services has made limited headway in India, where the financial systems for credit checking, billing and payment are not very well developed. SMS has emerged as the "Killer App" in mobile services because the cost is either free or virtually free. SMS has proved especially popular with service companies and marketers as a means of communicating real-time information to consumers — offering them instant incentives, deals and opportunities to enter

various contests. Indian companies have also created unique mobile solutions to resolve real world problems, such as sending SMS to get updates about flight schedules. Given its rapid pace of economic development and large consumer base, as well as a burgeoning software sector doing applications development work for mobile telecommunications, India is destined to become a preeminent player in the applications of mobile commerce.

Country Chapter on Japan

With wide-ranging business experience in the information and communications technology sectors of Asia and North America, as well as being equipped with analytical academic insights, Mark M. Lennon provides the readers a window into how and why Japan became an m-commerce pioneer. In Chapter IX, entitled "Japan: Keitai Krazy, From the Web to the Wallet," he looks at the historical evolution of mobile communications and mobile commerce in Japan and proceeds to examine a range of contemporary m-commerce applications from the CLIP perspective.

On the many cutting edges of mobile technologies, with nearly 70 percent of the population using mobile phones, Japan is a mature mobile commerce market. The groundbreaking i-Mode service from the mobile operator NTT DoCoMo not only created early interest in mobile commerce in Japan, but this service was also responsible for the vast majority of Japanese accessing the Internet for the first time in their lives — via their mobile phones. With the advances in 2G followed by 3G mobile communications technologies, the handset in Japan has evolved from a mere communications device into an m-commerce tool. The mobile device is increasingly used in Japan to interact with real world infrared sensors, Wi-Fi hotspots and Bluetooth readers that support a wide variety of location-based m-commerce offerings. With its technologically savvy consumers, this chapter shows why Japan is sure to remain a leader in m-commerce offerings.

Country Chapter on New Zealand

Chadinee Maneesoonthorn and David Fortin of University of Canterbury in Christchurch, New Zealand are the authors of Chapter X, entitled "New Zealand: M-Commerce Beyond the Basics, Adopting Value-Added Services." Together, these two authors bring not only knowledge of New Zealand but also experiences from Asia and North America to bear upon this chapter.

Similar to the situation in India, where mobile technology has built upon the popularity of SMS, New Zealand mobile firms have sought to increase revenues by providing a host of Value Added Services (VAS). Various forms of

interactive marketing — many of which entail sending SMS messages to enter contests — have proven quite popular in New Zealand. One restriction on m-commerce development, though, is the duopolistic nature of the mobile communications market. With only two mobile operators, the amount of competition is limited. This could continue to hinder m-commerce development due to the lack of price competition. Things could change rapidly, however, if additional mobile operators are suddenly allowed entry into the market.

Country Chapter on South Korea

Jounghae Bang of Penn State University at Mont Alto and Inyoung Choi of Georgetown University — authors experienced with information and communication technologies in South Korea as well as the United States — collaborated in developing Chapter XI, "South Korea: Visions of a Ubiquitous Network World."

Joined in agreements with the American-based mobile technology giant Qualcomm, Korea has adopted CDMA as their core mobile communications standard. Through judicious licensing from Qualcomm, the Korean firm Samsung has emerged as the largest global manufacturer of CDMA enabled phones for the American market as well as for the selective Asian markets where the CDMA standard is used. By adopting this national standard, advanced MMS applications, such as video-on-demand and videophone services have been made available widely and rapidly in South Korea. With tight integration between handset manufacturers and service providers, Korea is expected to remain on the cutting edge of the development of new mobile technologies. The influence of South Korean firms such as Samsung and LG extends far beyond the country's borders and can be expected to grow even more.

Country Chapter on the United Kingdom

Three researchers specializing in the business aspects of e-commerce and m-commerce — Savvas Papagiannidis, University of Newcastle upon Tyne; James Carr, University of Edinburgh; and Feng Li, University of Newcastle upon Tyne — are the authors of Chapter XII, entitled "United Kingdom: Current M-Commerce Developments and Future Prospects."

When the government auctioned off the wireless spectrum rights for 3G licenses in the United Kingdom, the bids made by the competing mobile operators vastly outstripped predictions of industry watchers. This led to difficulties — the money spent on the license rights drained the coffers of mobile operators. As a result, m-commerce proliferation in the United Kingdom has been

slower than expected in development. Customer demand has been slow to build up to reasonable levels and there are many promising but unproven m-commerce business models. As in other markets, however, SMS is quite popular, used by over 65 percent of mobile users. Even the government has acknowledged the power of SMS, with Prime Minister Tony Blair using text-messaging technology to communicate directly with constituents. The government also uses m-commerce methods to sell National Lottery tickets by enabling users to buy these tickets with mobile phones. With the advances in 3G networks, video clips and camera phones have also proliferated. Due to this high level of acceptance, m-commerce is expected to continue to expand with the increasingly advanced capabilities of technology. This chapter presents a number of case studies of emerging mobile communications and mobile commerce applications.

Country Chapter on USA

The last country chapter, Chapter XIII, entitled "United States of America: Renewed Race for Mobile Services," has been written by Mats Samuelsson and Sanjeev Sardana, two practitioners with over 40 years of combined experience in telecommunications and computer industries, together with an academic expert, the first editor of this volume. The two industry authors are also co-founders of Mobio Networks, an m-commerce startup company in the process of developing innovative mobile applications and are therefore able to offer a glimpse into what the future holds in this arena.

While initially behind the more robust and sometimes technologically innovative mobile communications markets of Europe and East Asia, the United States has made strides in the 2000s to catch up. Unlike the Japanese market, for example, where a majority of users had their first brush with the Internet via mobile devices, Americans have been used to Internet content on the large screens of desktop and laptop computers. Since the computers provide a rich, multimedia e-commerce experience, Americans had not been too keen on exploring the few early m-commerce options available through the small formats of mobile devices. This led to some resistance to the early m-commerce applications. From the mid-2000s, the situation has been ameliorated to some extent by the 3G advances of richer m-commerce offerings. Mobile payment systems, however, have been slow to catch on in the United States. Micropayment systems using mobile devices often entail the tallying and consolidating of charges on the mobile phone bill. This is a common practice in Japan and some European countries, but in the United States, such payment methods have been hindered by lack of cooperation and resistance amongst the mobile operators and third-party service providers. Internet web browsing, too, has been hampered by the slow connectivity and the cumbersome interface of WAP. Attempts to replicate the successful Japanese i-Mode system have fallen short.

For m-commerce to be truly successful in the United States, new business models integrating the advances in handset and network technologies must be developed and deployed. This chapter offers a framework for the innovative technology solutions and business models that are evolving rapidly in the United States. It is quite possible that, although a latecomer to the m-commerce scene, the United States could catapult into m-commerce leadership in many different areas through 3G networks, innovative Wi-Fi coverage patterns and new solutions based on Web services.

Concluding Chapter and Its Appendix

Chapter XIV, the concluding chapter of this book, entitled "It's an M-World After All: Lessons from Global Patterns of Mobile Commerce," is again authored by the three editors of this volume and accomplishes several things. First, it brings together the key ideas, illustrations and learnings from the 12 country chapters. It also draws overall conclusions about the CLIP — Communications, Locatability, Information and Payment — dimensions and reflects on what seems to work and where the challenges are in the development of mobile commerce. Finally, it provides a near-term, future-oriented view of where mobile communications and mobile commerce seem to be headed.

While the 12 country chapters cover a good range of major, populous countries, as well as some smaller but innovative and high-tech leading ones, the world is considerably bigger and more diverse than the countries featured in the 12 country chapters. To provide a flavor of what is happening with mobile communications and mobile commerce in other parts of the world, a special Appendix has been added to Chapter XIV, the concluding chapter of this book. This Appendix to Chapter XIVprovides thumbnail sketches of mobile communications and mobile commerce in 11 additional countries.

As in the case of the 12 countries chosen for the in-depth treatment in the country chapters in this book, these 11 additional countries featured in the Appendix to Chapter XIV were also chosen either because of their large population and market size or because of the innovative character of mobile communications technology and mobile commerce applications resident there. These countries, as well as many others, are, of course, attractive candidates for further in-depth study by the readers of this book and by researchers and practitioners with special knowledge of the telecommunications sectors of such countries.

Dealing with the Terminology

Like most information and communications technology fields, mobile communications and mobile commerce rely on an evolving set of specialized terms and abbreviations. Most chapter authors have defined such terms in their chapters. Additionally, to help the reader deal with the alphabet soup of abbreviations, we have provided a comprehensive glossary of mobile commerce terms at the end of the book. The field of mobile commerce is constantly evolving, so the readers are encouraged to keep abreast of new technologies, terminologies and abbreviations as they appear on the global m-commerce scene.