IFC Mobile Money Study 2011

THAILAND

In Partnership with the Republic of Korea

IFC International Finance Corporation
World Bank Group

IFC ADVISORY SERVICES | ACCESS TO FINANCE

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Foreword

Financial inclusion—access to a range of financial services and products for everyone needing them, in a fair, transparent, and cost-effective manner—is a goal of IFC (International Finance Corporation) and a priority of the Group of 20 development agenda.

IFC has committed to achieving greater financial inclusion by 2013 by providing more diversified financial services and by deepening outreach to microclients and small and medium enterprises. IFC also helped support and shape the G20 global financial inclusion agenda that calls for the promotion of a range of financial services beyond credit—including payments, savings, remittances, and insurance.

More than 2.7 billion people in developing countries do not have access to basic formal financial services, such as savings and checking accounts. Many governments have made savings accounts widely available, but to make payments and transfer funds, the poor must often depend on costly and unreliable informal financial services. Low levels of financial inclusion also represent an obstacle to economic development.

Developing innovative methods of retail payments is essential to increasing financial inclusion. New technologies and new business models are opening new methods of retail payments, as well as bill payments and transfers of funds among people and businesses.

Mobile technology is a channel that, once in place, allows for the delivery of other low-cost financial services bringing banking to unbanked and underserved people. Mobile money—the transfer of funds using cell phones—is an innovative method for both individuals and small businesses to transfer money. Mobile money is becoming common in developed countries for small, frequent payments such as mass transit fees. In some developing countries, it offers an opportunity for unbanked people to pay bills and transfer funds without using cash. Some businesses use it throughout their supply chain.

Why has the development of mobile money systems been so successful in some countries, yet seem blocked in others? What can be done to encourage its development globally?

This report looks at the technology required and the business models used by mobile network operators, banks, and others in four developing countries—Brazil, Nigeria, Sri Lanka, and Thailand. It compares these countries with Kenya and Japan, which have successfully developed mobile money operations, and with the United States.

Perhaps more importantly, it offers a framework for a quick market study of a country to determine whether or what type of mobile money services might be developed commercially. It offers models of user perception and demand surveys, then develops a set of parameters—such as regulatory

environments, current access to financial services, and the requirements of potential mobile money service providers to run viable businesses—that can spur or block mobile money development. By using these survey techniques and examining the relevant parameters, a government or development agency can assess a country's potential for a successful mobile money business.

We hope this report will contribute to mobile money business development globally. It is intended for regulators, mobile network operators, commercial banks, microfinance institutions, telecommunications equipment and handset manufacturers, and others that could be involved in the development of mobile money businesses.

I would like to express sincere thanks to the government of the Republic of Korea for its support of this study through the Korean Trust Fund.

Peer Stein
Global Business Line Leader
IFC Advisory Services, Access to Finance

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This study was commissioned to increase understanding of mobile money (m-money) and help address key issues in scaling up further development of m-money ecosystems globally.

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Intelecon Research and Consultancy Ltd of Vancouver was contracted by IFC (International Finance Corporation) to conduct the IFC Mobile Money Study 2011, including in-country fieldwork. Andrew Dymond, Steve Esselaar, and Sonja Oestmann authored the reports, assisted by the rest of the Intelecon team. The team also included Jenny Hoffmann from RiskFrontier Consulting (United Kingdom) and local research partners in each country: Antonio Bothelo of Diálogo Regional sobre la Sociedad de la Información (Brazil), Ike Moweto of Research ICT Africa! (Nigeria), Harsha de Silva of LIRNEasia (Sri Lanka), and Deunden Nikomborirak of Thailand Development Research Institute (Thailand).

We are also extremely grateful to our partnering m-money operators for their cooperation: Oi Paggo in Brazil (a new company, Paggo Soluçoes, has since been formed), eTranzact in Nigeria, Dialog in Sri Lanka, and TrueMoney in Thailand. Other organizations, companies, and individuals in each country gave generously of their time and knowledge, including the Central Bank of Brazil, the Central Bank of Nigeria, the Central Bank of Sri Lanka, and the Bank of Thailand. Appendix B of each country report lists the many people interviewed during the study; their participation is greatly appreciated.

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IFC Mobile Money Study 2011 Project Team

Abbreviations

2G	second generation
3G	third generation
AIS	Advanced Info Service
AML	anti-money-laundering
ATM	automated teller machine
B2B	business to business
CFT	combating the financing of terrorism
e-money	electronic money
e-payment	electronic payment
e-PIN	electronic personal identification number
e-wallet	electronic wallet
EDC	electronic data capture
G2P	government to person
GDP	gross domestic product
GPRS	general packet radio service
GSM	global system for mobile communications
IFC	International Finance Corporation
IVR	interactive voice response
K-Bank	Kasikorn Bank
m-banking	mobile banking
m-money	mobile money
m-payment	mobile payment
MNO	mobile network operator
NFC	near-field communication
P2P	person to person
POS	point of sale
SIM	subscriber identity module
Singtel	Singapore Telecom
SMS	short message service
STK	SIM Toolkit
TMX	TrueMoney Express
USSD	unstructured supplementary services data
VOIP	voice over Internet Protocol
WAP	wireless application protocol

The average exchange rate for the year 2010 of 31.69 Thai baht/1 U.S. dollar is used throughout.

Summary

Thailand has a highly developed financial sector. Bank branches are widespread. Credit and debit cards are experiencing rapid growth, and credit cards are beginning to penetrate the low-income market. The number of point-of-sale (POS) devices has increased dramatically. Automated teller machines (ATMs) are becoming the primary means of conducting financial transactions. The level of financial sophistication (in terms of financial infrastructure and POS and ATM penetration) means that the best solution for mobile money (m-money) in Thailand will be a combination of mobile phone use and debit, credit, and prepaid cards.

Three m-money providers have been relatively successful in the market: TrueMoney, a subsidiary of True Corporation; Advanced MPay, a subsidiary of Advanced Info Service (AIS); and a partnership between DTAC, a mobile network operator (MNO) and Kasikorn Bank (K-Bank).

These companies have launched m-money initiatives that provide valuable lessons for similar countries:

- Leveraging the massive customer base available to it as a member of the True Corporation conglomerate, TrueMoney provides a service to the whole conglomerate's customers enabling them to pay their bills conveniently and cheaply.
- Advanced MPay has exploited a gap in the services banks offer small businesses. It provides a cheap, fast, and efficient mechanism for transfering money from small businesses—particularly those in rural and semi-urban areas—to their bank accounts using a mobile phone platform. Its retail consumer customer base was not the primary success of its m-money platform; rather Advanced MPay's main success has been in providing an efficient mechanism to small businesses to transfer money from rural and semi-urban areas to bank accounts.
- DTAC has partnered with K-Bank to offer the ATM SIM (subscriber identity module) product. By integrating into the K-Bank infrastructure, DTAC can offer a more secure platform for financial transactions than most MNOs.

Thai m-money providers could exploit several opportunities. They could leverage the domestic infrastructure that it has established in bill payments to offer a clearly structured remittance product for Thai workers overseas. They could also investigate using its existing money transfer service for small businesses where banks are not able to offer as efficient a service either for non-face-to-face payments or for businesspeople who are frequently on the move between clients. Finally, because the Thai government has not made its payroll fully electronic, m-money might provide an easy mechanism to make government payments more efficient.

TrueMoney has demonstrated a variety of successful measures in its m-money initiatives:

- Leveraging internal business needs—finding a cost-effective way to receive bill payments for group company services
- Integrating into the banking system by providing the ability to move funds between accounts and electronic wallets (e-wallets)
- Providing a clear value proposition to existing customers
- Integrating into existing retail networks
- Experimenting with innovative near-field communication (NFC) technology.

Table S.1 summarizes Thailand's m-money opportunities. Thailand, with three m-money providers, allows few opportunities for new entrants. Its financial infrastructure, including ATM kiosks, is rapidly expanding outside of the Bangkok region. Though there are increasing levels of competition and several challenges from an agent perspective, two markets in particular have not yet been fully exploited: person-to-person (P2P) transfers and business-to-business (B2B) payments. The fact that a significant portion of small businesses still use cash means that there is an opportunity for m-money in this market.

Table S.1 Mobile Money Opportunities in Thailand

Potential market	Assessment	Description	Challenges and obstacles	Potential transactions/ month
Bill payments (utilities)	▲	▪ Existing m-money bill payment system, but in direct competition with banks ▪ Survey shows a wide variety of payment channels used	▪ Existing bill payments using m-money for services that are part of TrueMoney; breaking out of that ecosystem will be difficult	13,404,916
Person-to-person (P2P) transfers	▲	▪ Substantial number of transfers accomplished at the bank counter: in 2008, 55.4% of transactions were made at the bank counter and 44.6% by direct debit	▪ ATMs are expanding rapidly ▪ Transfers can be accomplished easily via ATM even in the absence of a bank account ▪ Banks are already offering services at low cost ▪ Mobile operators are focused on 3G investments	Unknown
Government-to-person (G2P) payments	■	▪ Potential demand relatively small (but welfare system is growing)	▪ Elderly prefer cash payments that are delivered personally to them	646,800
Payroll (informal sector)	▲	▪ Large informal sector	▪ Payments already facilitated by extensive financial network of ATMs	20,988,000
Public transport	▲	▪ Large-scale opportunity with clear value proposition to replace existing system, which has different e-cards for different systems	▪ Needs NFC to succeed, requiring investment and NFC handset adoption	58,873,333
Business-to-business (B2B) payments	▲	▪ Potential opportunity for small businesses to transfer money, competing with existing, more expensive financial services ▪ Advanced MPay is already offering this service	▪ Banks might reduce rates and squeeze smaller operators such as Advanced MPay out of the market	—
International remittances	▲	▪ Overseas remittances could be substantial ▪ Very little research has been done on the methods expatriate Thai workers use to transfer money from overseas	▪ No data	—
Credit and microfinance	■	▪ Potential market for credit; however, banks are expanding rapidly and offering credit cards to low-income earners, making this unlikely to be a viable market for m-money	▪ Strong competition from financial sector ▪ In 2009, there were also 6,997 local cooperatives of which 1,796 were purely for financial services (thrift and credit or credit unions)	—

Source: IFC Mobile Money Study 2011.

Note: ▲ = potential opportunity but there are substantial challenges; ■ = unlikely to be any m-money opportunity due to lack of economies of scale or other constraints; — = not available.

1 Introduction

Although a number of m-money businesses have emerged around the world, few have reached significant scale. Overall, m-money uptake is limited when contrasted with its apparent promise of reaching the unbanked and underserved, servicing existing banking clients, and being a means for realizing a cashless society.

Study Focus

This study examines the following in more detail:

- Existing major money flows and the critical mass of low-value, high-volume payment transactions and whether m-money can be used for them (i.e., potential demand)
- Regulatory environment and major obstacles for m-money uptake
- Business models of partnering institutions
- Payment behavior of users and nonusers (banked and unbanked), in particular where they receive funds and how they use money, including alternative means
- Existing and potential agents' networks, their requirements to run m-money as a viable business, and their training needs.

The key analytical questions guiding the study follow:

- How can m-money adoption be accelerated?
- Which countries are the most likely to have a mass market for m-money, and how can they be identified?
- What business strategies and partnership models can best exploit m-money opportunities?
- Where are the best investment opportunities?

This report provides detailed information on Thailand regarding five main topics—business models, money flows and demand, potential user perceptions and behavior, regulation, and agent networks.

Socioeconomic Country Context

Thailand is described by the World Bank as a middle-income country. Various factors, including government policy objectives, have resulted in more than 90 percent of the population having a bank account.[1] A competitive banking industry is driving access through the addition of branches as well as through electronic channels such as ATMs, POS devices, and the Internet.

In the decade ending in 1995, the Thai economy was one of the world's fastest growing at an average annual rate of 8–9 percent. After recovering from the Asian crisis of 1997–98, the Thai economy took off again. From 2002 to 2006, Thailand's growth

[1] This figure was derived from data collected from banks and the Bank of Thailand in country. It is considerably higher than the figures cited by the World Bank (2008).

averaged 5.6 percent annually. However, the recent global financial crisis affected this region, and in 2009 the economy contracted by 2.8 percent.

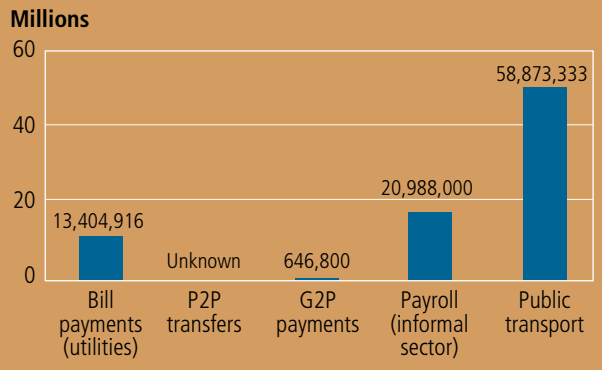
Although Bangkok and its surrounding area play a dominant role in the economy, the Gini coefficient shows that Thailand has a relatively equal income distribution, greater than that of Malaysia or the Philippines and slightly less than Singapore's. Two-thirds of the Thai population lives in rural areas, and 38 percent of the labor force works in agriculture.

2 Demand Perspective

We examined Thailand's demand for m-money both qualitatively and quantitatively. Figure 2.1 gives estimates of total monthly volumes (not values) of transactions in key demand areas that could offer m-money opportunities. However, m-money must compete with both traditional payment methods and other electronic money (e-money) options and is therefore unlikely to be able to capture all of this potential.

Table 2.1 gives a detailed qualitative description of potential markets. Based on both desk research and field visits, the following potential markets for m-money were investigated: bill payments, P2P transfers, government-to-person (G2P) payments,

Figure 2.1 Potential Monthly Transactions in Key Mobile Money Market Segments in Thailand



Source: IFC Mobile Money Study 2011.

Table 2.1 Potential Mobile Money Market Segments

Market segment	Description
Bill payments (utilities)	In developing economies, it is common to pay bills by queuing outside the utility company. Although this may be a niche market, the value proposition is to provide a convenient, safe, and fast mechanism to pay bills.
P2P transfers	The success of Kenya's M-PESA indicates that there is a large unmet demand in transferring money between people.
G2P payments	Governments make regular payments to at least 170 million poor people worldwide.[a] The value proposition is to provide a more cost-effective and time-saving service to citizens.
Payroll (informal sector)	This segment might overlap with the P2P market, but is a more specific opportunity for an m-money application allowing small businesses in the informal sector to pay their staff.
Public transport	The success of NFC technology in Japan indicates that there is potentially a massive market, particularly for NFC-enabled phones.
B2B payments	B2B payments in rural areas beyond the reach of banks are difficult and handled mainly by cash or check. M-money could provide mobile payment capabilities at each stage along the value chain.
Retail payments	Cash is less secure than e-money. Consumers may find paying with an NFC-enabled card or phone more secure and more convenient than using cash.

Source: IFC Mobile Money Study 2011.

a. Pickens, Porteous, and Rotman 2009.

payroll, public transport, B2B payments, and retail payments.

Where appropriate and possible, additional potential applications for m-money were also investigated. Depending on data availability, the size of these markets was estimated to establish the relative size of the m-money opportunity. Each potential market is discussed below.

Bill Payments

Bill payments can be made in person at bank counters, ATMs, POS devices at merchants, and by direct debits. In 2008, 55.4 percent of transactions were made at the bank counter and 44.6 percent by direct debit. Most of the bank counter payments by volume are made by cash. Bill payment via m-money services was the third most popular function in the demand survey. At first glance, this looks like an opportunity for m-money. However, the use of ATMs to pay bills is rapidly increasing. ATMs now offer a full range of services, including bill payment. Banks are promoting ATM roll-out aggressively, especially outside of Bangkok.

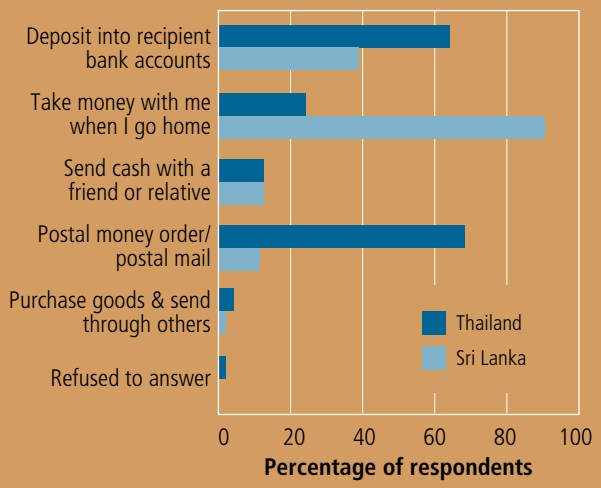
It is an increasingly competitive market, but there appears to be room for m-money in the short to medium term.

Person-to-Person Transfers

Overseas remittances to Thailand are substantial, but little research has been done into the methods that expatriate Thai workers use to transfer money from overseas. In contrast, some research has been done into domestic remittances. A 2009 study by LIRNEasia (figure 2.2) shows that a significant number of migratory workers use either the extensive postal or banking networks, while a negligible number of respondents physically carry money home with them (in contrast to remittance trends in Sri Lanka).

The financial services sector provides significant competition for domestic fund transfers. Banks are expanding their ATM networks aggressively. Currently, MNOs charge less than banks for transfer services, but this could easily change if banks decide to compete for the market. However, the success of DTAC's ATM SIM product (discussed in chapter 5) shows that there is still significant demand, even with added competition. Also, the poor geographic distribution of ATMs at this stage means that there is an opportunity for P2P transfers outside the ATM network (i.e., outside of Bangkok).

Figure 2.2 Means of Remittance Transfer Reported by Domestic Migratory Workers from Thailand and Sri Lanka



Source: LIRNEasia 2009.

Note: Multiple selections were allowed.

Government-to-Person Payments

In response to the global recession, the government of Thailand implemented a monthly living allowance of B 500 (about US$16) to all citizens aged 60 years and over who are not entitled to other government pensions. Currently, all disbursements are made at village-level government offices. For example, in one government office, 18 staff members were tasked with distributing funds to 500 people (out of a community of 3,500), which takes about three days per month. Despite the inefficiency, the villagers, when asked, said this is their preferred method of receiving money. It seems that villagers enjoy the interaction with government officials and chose it over mobile phone delivery.

Other opportunities for m-money include the following:

- Government tax credits are paid by check. They were paid electronically into bank accounts in the past, but this was recently discontinued.
- Approximately 83,000 villages manage revolving funds for microfinance as well as a grant fund for community projects. The initial fund is B 1 million (almost US$32,000).

Providing a secure and efficient system for transferring funds to individuals (e.g., tax credits) or microfinance loans (village funds) could have a substantial impact. These two examples need to be investigated further.

Informal Payroll

The informal sector in Thailand is relatively substantial, employing about 58 percent of the workforce, or more than 20 million workers. Since Thailand remains a largely cash economy (outside of Bangkok), there is an opportunity for m-money to provide services to the construction and informal retail sectors.

Public Transport

The number of public transport trips per month in Thailand is 58 million. Currently, different payment platforms are used for different modes of transport. There is substantial support among MNOs, other payment providers, and the government for the concept of a single ticketing system. Single ticket transit is an objective outlined in the Bank of Thailand's "Payments System Report 2008." If a single ticketing system were to be implemented, it would represent an opportunity to introduce NFC-enabled cards or phones to reduce costs. However, all rail stations and buses would need to be equipped with NFC readers.

In Bangkok, the Chaloem Ratchamongkhon Line of the Mass Rapid Transit System is the first underground metro in Thailand. The Bangkok underground requires the purchase of one kind of machine-readable token, whereas the Skytrain uses a different machine-readable system. The bus system that services Bangkok from outlying areas uses yet another system. Tickets can be bought using cash at vending machines at stations.

Business-to-Business Payments

Coca-Cola was used as a proxy to estimate the potential for mobile B2B payments. Coca-Cola is one of the largest fast-moving consumer goods companies in the world with significant operations in Thailand. About 26,000 small businesses receive deliveries on a regular basis; most pay in cash. There are significant potential benefits to providing a more cost-effective and efficient method of payment.

Many small businesses still provide business payments in cash. Advanced MPay has seen an opportunity to provide m-money to these small businesses, mainly outside of Bangkok. Banks have not taken advantage of the service to small businesses. While this may change in the long run, there is an opportunity to provide supply chain optimization services (such as using m-money to pay for business inputs).

Thailand has an extensive retail network, well served by multiple international retail chains as well as a multitude of individual businesses. CP Freshmart, part of the CP Group, has about 550 stores countrywide, all of which are agents for TrueMoney Express (TMX), TrueMoney's payment counter service dealer (see chapter 5). The basic functions of TMX include bill payment, airtime top-up, and electronic personal identification number (e-PIN) sale. Chains such as 7-Eleven have an extensive network of stores in Thailand and offer bill payment and money transfer services.

Other

Additional markets show promise for m-money, but they have not been quantified in terms of number of monthly transactions. Qualitative data, such as interviews and desk research, have been used to estimate their size.

Retail Sector

Thailand has an extensive retail network, well served by multiple international retail chains as well as a multitude of individual businesses. Makro was the first international retailer to enter Thailand. Soon after, the CP Group launched the Lotus brand in Thailand; it later formed a partnership with the U.K.-based Tesco in 1998 to create Tesco Lotus. Also new to the market were Big C, a chain of super stores originally from Central Group; and Carrefour, a supermarket chain that started as a joint venture between Central Group and Carrefour. CP Freshmart, a chain of convenience stores that is part of the CP Group, has about 550 stores countrywide, all of which feature TMX, the payment counter service dealer of TrueMoney which enables bill payment, airtime top-up, and e-PIN sales to be done in person. Chains such as 7-Eleven have an extensive network of stores in Thailand and offer bill payment and money transfer services. Thus, there is already some familiarity with m-money, and it is relatively easy to sign up these retailers as agents.

Credit and Microfinance

In Thailand, there are 6,997 local cooperatives of which 1,796 are purely for financial services (thrift and credit or credit unions). A large proportion of cooperative members live in the northeast and north regions away from Bangkok. This sector is well served by the financial services sector.

3 Parameters of the Mobile Money Ecosystem

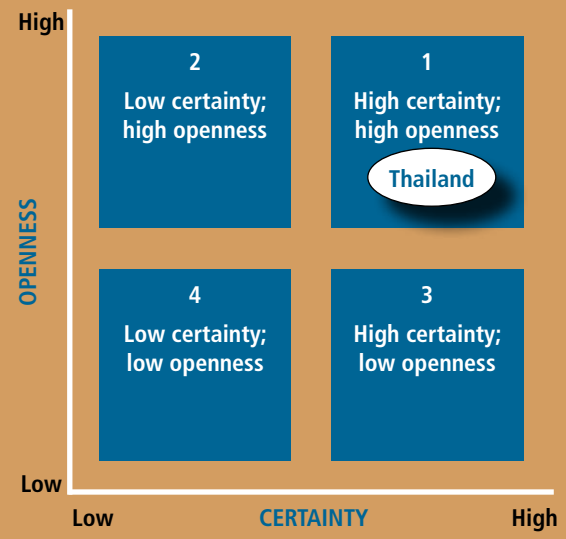
As explained in appendix A, Methodology, of the *IFC Mobile Money Study 2011: Summary Report*, a number of parameters that tend to influence the success or failure of m-money operations were identified through a review of the literature and refined during field visits. Table 3.1 (next page) provides an overview of the parameters selected. The relevant parameters in Thailand are discussed in this chapter.

Enabling Regulation

Summary Assessment

The regulatory framework in Thailand is relatively open. There is no specific regulation or law covering m-money; rather, it is covered by several notifications and circulations, and falls under the broader framework of the Royal Decree Regulating Electronic Payment Services, which is governed by the Bank of Thailand (the central bank). Anti-money-laundering (AML) regulations are covered by the Bank Act. A new act covering e-money is currently in the form of a discussion document produced by the Office for Anti-Money Laundering, which reports to the Ministry of Justice. There is a risk that the new AML regulations will slow the development of m-money if they add more stringent m-money regulations. Nevertheless, Thailand fits within the "high certainty and high openness" category in figure 3.1, which is the best position for innovative business development.

Figure 3.1 Thailand's Mobile Money Market in the Porteous Regulatory Environment Model



Source: IFC Mobile Money Study 2011, based on Porteous 2006.

The Bank of Thailand

The Bank of Thailand is supportive of m-money and sees the move toward electronic payment (e-payment) systems as a key contributor to economic growth. Cash is often seen as free to banking customers, particularly when the pricing structure offered by their banks offers free withdrawals and or deposits. However, the high costs of cash management to banks, government, and businesses mean that these stakeholders have a strong incentive to encourage the use of alternatives to cash. Reducing the use of cash should reduce the

Table 3.1 Parameters Affecting the Success of Mobile Money Services

Category	Parameters			
Socioeconomic context	Population Poverty Urbanization; rural population	GDP/capita GDP by region Gini coefficient[a]	Geographic area	Remittance flow
Regulation	Clear and risk-based regulatory framework M-money license requirements Obstacles to international remittances	Know-your-customer regulation Bank outsourcing Mandatory services banks must offer	Agent regulation Interoperability requirements Regulations on new branches	ID system Pricing restrictions on accounts Level of expensive requirements
Existing access to financial services	Reach of networks/agents Informal financial access Competitiveness of banking industry	Penetration/use of cards Nonbank provision of financial services	Penetration/use of prepaid cards Cash-electronic transaction ratio (use of cash)	Internet banking usage Unbanked population
Existing mobile market situation	Population penetration/ coverage Churn[b]	Geographical coverage Level of fragmentation of industry	Level of competition	3G penetration/usage
Potential demand	Bill payments B2B transfers	Public transport Credit and microcredit	P2P transfers International remittances	G2P payments Savings Retail payments
Retail sector	Retailers with national coverage	Level of fragmentation	Postal network	Other distribution networks
Payment system	POS terminal penetration	Mass payment acceptance	Card penetration Dominant payment methods in the economy	National switch[c] Third-party payment processors
Pricing	Distortion through intervention/regulation	Banking services pricing		
User perceptions	Trust in mobile operators versus banks	Willingness to pay for m-money service	Cultural factors	

Sources: IFC Mobile Money Study 2011; CGAP.

a. The Gini coefficient is a measure of the inequality of a distribution, with a value of 0 expressing total equality and a value of 1 maximal inequality.

b. "Churn" in the telecommunications industry means customers move from one network operator to another.

c. "National switch" here means an online interbank fund transfer system.

overall cost of doing business for all stakeholders, as noted by the Bank of Thailand in its "Payments Systems Roadmap 2010" (box 3.1.)

The Bank of Thailand, which has outlined the objectives, strategies, and activities that government and regulators will implement over five-year periods, along with the obstacles to their implementation, recommends removal of laws and regulations that impede e-payments and the building of public trust in a cashless society.

According to a Bank of Thailand survey, consumers and businesses give greater weight to certain types of "nonprice" factors such as legal support regarding the use of e-receipts and e-documents,

Box 3.1 Bank of Thailand "Payment Systems Roadmap 2010": Cash

Although electronic payment systems have become increasingly prominent and popular in Thai economy, they are generally confined to limited groups of users. In rural sectors where cash is the only available means of payment, cash payment is still preferred for its convenience and familiarity. In urban areas, the cash payment ratio is relatively high in selected business sectors, such as public transportation and retail. Customers of large retail stores and small convenience stores still pay for goods and services with cash.

A high cash payment ratio is regarded as one of the main obstacles to overall national economic development because of its higher management and service costs in comparison to electronic payment. Embedded in cash payment are the additional costs of transportation, screening and counting, disposal (of old bank notes), and insurance.

Besides, most cash payment involves face-to-face transactions which take a longer time to process because money needs to be counted and change need to be calculated. Since the actual intent of cash payment is more difficult to monitor and regulate than electronic payment, cash payment is subject to higher risks of loss, theft and robbery, illegal business transactions, and tax evasion.

Source: Excerpted from Bank of Thailand 2007.

as well as effective mechanisms to ensure a more secure environment for e-payments. The Bank of Thailand has focused on changes in legal and regulatory frameworks regarding e-payment, illustrating its commitment to greater reliance on e-payment channels for retail payments by consumers and businesses.

Mobile Money Regulatory Framework

The regulations that affect m-money in Thailand are the 2001 Electronic Money Transaction Act and the 2008 Royal Decree on Monitoring Electronic Business.[1] The decree categorizes e-payment business into three types according to risk and impact:

- **Type A** relates to closed-loop payment cards or a system for purchasing one product or service from a specific retailer or group. Operators of Type A systems need to notify the regulatory commission of their intention to launch.
- **Type B** is a network service (e.g., credit card) or electronic data–capturing network service. It also includes switching services and issuing prepaid e-money to pay for multiple products and services under a single management entity. These providers need to register with the Electronic Transaction Commission.
- **Type C** service providers must apply for a license to operate. The services they provide include the following:
  - Electronic withdrawal from a bank account
  - E-payment where the provider must provide payment confirmation to the customer, the payee must receive the payment immediately and unconditionally, and the transaction must be irrevocable
  - E-payment via an electronic device or network, with the provider issuing proof of payment to the customer via an agreed method
  - Multisystem switching services that allow payments among member banks and companies
  - E-payment services on behalf of customers; this can serve multiple merchants, which are not necessarily managed by the same entity (or under a single company).

  The regulatory requirements for Type C providers include the following:
  - Minimum registered capital of B 200 million (about US$6.3 million), and, if the provider is an MNO, the business must be a separate legal entity
  - 100 percent reserve for money stored in e-wallets (this is currently required to be in

[1] BC 2544 article 32,33,34 and 2; and BC 2551, published in Royal Gazette 16 September, 2008 and enforced as of January 14, 2009.

noninterest-bearing accounts but is being reviewed to possibly include government bonds)

- Tariffs that are not regulated require notice to the Bank of Thailand
- Clear disclosure of tariffs to customers is required
- No maximum transaction size is imposed, but operators are required to assess the risks and report their decisions to the regulator.

Interoperability among systems is not yet mandatory, although a committee is examining this issue.

Anti-Money Laundering and Combating Terrorist Financing Regulations

AML regulations are covered by the Bank Act. In January 2007, a policy statement, "Measures on Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) for Financial Institutions," was issued. However, the International Monetary Fund's report on Thailand's compliance with international standards regarding AML and CFT expressed concern that the framework was a combination of unenforceable guidelines, circulars, and regulations, which did not comply with the standards of the Financial Action Task Force (IMF 2007). This concern included the type of accounts for which customer due diligence was required. A new act is being proposed that will cover e-money. At present, it is a discussion document produced by the Office for AML which reports to the Ministry of Justice.

Currently, customers can register quickly and easily for an e-wallet by providing details of their national identification; this information is then verified by the Ministry of Interior within 24 hours. There is some concern that the new regulations will make this process more challenging. To open a savings account, a bank employee must view and take a copy of the customer's national ID card. (National ID cards are widely held and are thus not a barrier to opening a bank account or e-wallet.)

Use of Agents

There do not appear to be any regulations restricting the use of agents, though banks currently provide access through a wide range of self-service kiosks and ATMs in addition to their branches. The post office has been acting as an agent for commercial banks for several years, and foreign banks use the infrastructure of other commercial banks as agencies. Each licensee must notify the Bank of Thailand of the use of agents. Service offerings of any agent network with cash-in and cash-out functionality need to be competitive and diversified, given that more than 90 percent of respondents surveyed use ATMs for cash withdrawals.

Pricing Interventions

The Bank of Thailand believes that judicious interventions in pricing certain bank transactions provide consumer protection and can support government policy. For example, banks might encourage the use of electronic channels and payment instruments to protect consumers and encourage industry competitiveness. Table 3.2 shows there is a maximum fee of B 25 (US$0.79) for online retail transactions of less than B 10,000 (US$316) and B 35 (US$1.10) for transactions of between B 10,000 and B 30,000 (US$316–US$947). Regulations ensure that charges for checks are higher than for electronic fund transfers, aligning fees more closely with costs incurred.

Table 3.2 ATM Interbank Fund Transfer Fees

Fee	Funds transferred B (US$)	
	0–10,000 (0–316)	10,001–30,000 (316–947)
Fee	25.00 (0.79)	35.00 (1.10)
Receiving bank	3.22 (0.10)	5.22 (0.16)
Sending bank	7.00 (0.22)	10.00 (0.32)
ATM owner	12.00 (0.38)	18.00 (0.57)
Online retail funds transfer (payment settlement)	1.78 (0.06)	1.78 (0.06)

Source: Bank of Thailand 2010.

Existing Access to Financial Services

Table 3.3 shows the relative importance of cash in countries across Asia. In general, Japan and Thailand used cash for more than 90 percent of their purchases and bill payments, while Hong Kong and Singapore used 70 percent and South Korea used less than 60 percent (Khiaonarong and Humphrey 2005).

Table 3.3 Relative Importance of Cash in Selected Asian Economies, 2004 (%)

Economy	Cash/M2	Cash/GDP
Hong Kong	3.4	10.9
Indonesia	10.6	4.7
Malaysia	5.4	6.4
Philippines	13.8	5.45
Singapore	6.6	7.6
South Korea	2.03	2.5
Taiwan, China	2.9	6.6
Thailand	10.3	9.3

Source: Asian Development Bank.

Thai banks hold approximately 140 million accounts for a population of about 66 million. Although there has been no recent research on the number of people who do not have a bank account either with a commercial or specialized government-owned bank, the consensus is that it is less than 10 percent of the population—about the same as in the United States or the United Kingdom. These unbanked people tend to be unregistered workers, refugees from places such as Lao People's Democratic Republic or Myanmar, farmers, or elderly people in rural villages.

Banking Industry

At the end of 2009, Thailand had 14 commercial banks and 8 specialized financial institutions,[2] some of which had a widespread branch infrastructure. There were 15 foreign banks with operating branches, 3 finance companies, and 26 personal loan companies in Thailand. In 2009, there were also 6,997 local cooperatives, of which 1,796 were purely for financial services (thrift and credit or credit unions). A large proportion of cooperative members lived in the northeast and north regions, far from Bangkok. All commercial banks are regulated by the Bank of Thailand; the other institutions are regulated by the Ministry of Finance or by both.

Despite the economic slowdown, commercial banks remain focused on continued installation of new ATMs, as these are the most cost-effective means by which to enhance accessibility of bank services (table 3.4). At the same time, commercial banks are expanding their branches into areas such as department stores and highly populated neighborhoods, while promoting a wider range of self-service banking products that facilitate 24-hour banking transactions. As a result, the number of ATMs in Thailand has increased at an average of 35 percent per year since 2004 (figure 3.2), which led to a decrease in the average transactions per ATM from 49,000 in 2005 to 36,000 in 2008. Almost everyone—90–97 percent of local respondents surveyed—uses ATMs regularly.

In 2008, more than 70 percent of Thailand's ATMs were in Bangkok and the central region, where most financial institutions, business centers, and tourist attractions are located. Interestingly, the number of ATMs in Thailand's other three regions, which are far from the capital city, account for only 30 percent of the total although 66 percent of the population lives there.

Because of a rapid spread of ATMs throughout the country, the average persons per ATM in each region has dropped by three-quarters within four years: from 50,137 persons per machine in 2004 to only 14,446 in 2008. The most popular ATM service is cash withdrawal, accounting for approximately 80 percent of all transactions. Meanwhile, interbank and intrabank transfers accounted for

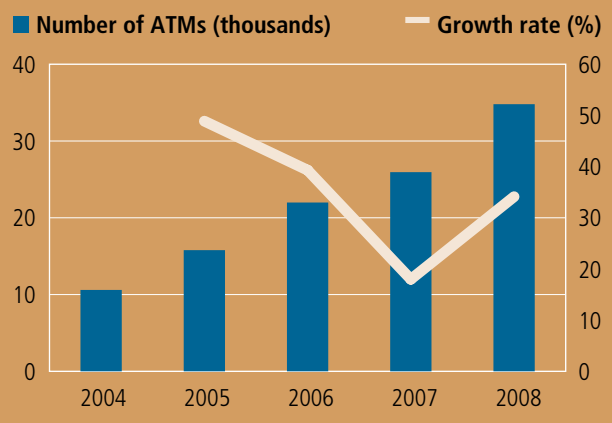
[2] The eight specialized institutions are the Bank of Agriculture and Agricultural Cooperatives, the Export-Import Bank of Thailand, the Islamic Bank of Thailand, the Secondary Mortgage Corporation, the Small and Medium Enterprise Development Bank of Thailand, the Small Industry Credit Guarantee Corporation, the Government Housing Bank, and the Government Savings Bank.

Table 3.4 Summary of Thailand's Banking Infrastructure

Element	Bangkok	Central	Northeast	North	South	Total
Number of full bank branches	1,719	1,630	625	616	607	5,197
Number of subbranches	227	197	49	55	77	605
Number of ATMs	12,624	11,871	3,673	3,230	3,398	34,796
Total	14,570	13,698	4,347	3,901	4,082	40,598
% of total bank infrastructure	35.89	33.74	10.71	9.61	10.05	100
Population	5,710,883	15,615,968	21,442,693	11,878,641	8,741,545	63,389,730
% of population	9	25	34	19	14	100

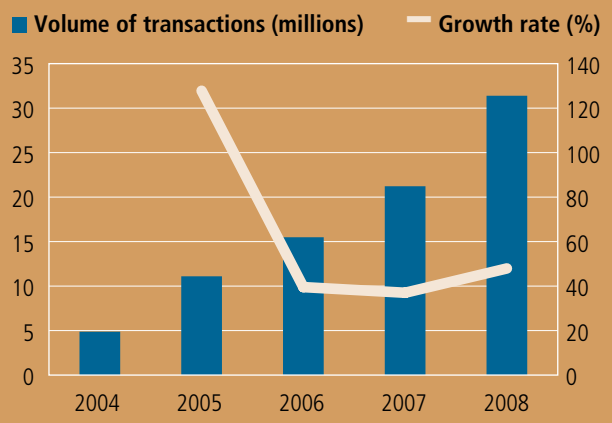
Source: Bank of Thailand.

Figure 3.2 Number and Growth of ATMs



Source: Bank of Thailand.

Figure 3.3 Growth in Internet Banking



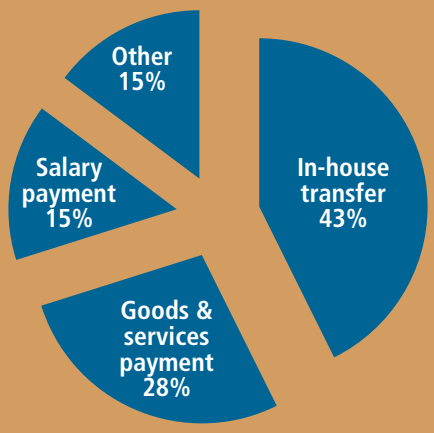
Source: Bank of Thailand.

7 percent each, which may indicate a growing use of ATMs for bill payments.

In 2008, Internet banking transactions increased 47.9 percent to 31 million transactions from 21 million transactions in 2007; the average growth rate per year was 42 percent over the last three years (figure 3.3).

Respondents in the local survey indicated that the Internet was the third most popular way to transfer money. In 2008, Internet banking services were used for fund transfers within the same banks (42.7 percent), payment for goods and services (27.5 percent), payment for salary and wages (15.1 percent), and other services (14.8 percent) (figure 3.4).

Figure 3.4 Uses of Internet Banking, 2008



Source: Bank of Thailand.

Credit and Debit Cards

Credit and debit card penetration has exploded in the past few years. Between 2006 and 2008, the number of debit cards increased from 3.9 million to 26.2 million, a growth of more than 570 percent (table 3.5).

Debit cards and ATM cards are widely available; more than one in three people has one. The low monthly value (B 75 or US$2.37) of debit card purchases shows that these cards are primarily used for cash withdrawals at ATMs (table 3.6).

Most Thais are more comfortable using ATMs than they are using credit and debit cards for purchases (figure 3.5).

Pricing

Banks do not charge a fee for cash withdrawals or deposits at ATMs or at the bank branch, preferring to charge an annual ATM card fee. Banks do not usually charge transaction fees. However, if the balance in an account is less than B 500–1,000 (US$16–US$32), there is usually a monthly fee.

Existing Mobile Access and Market Situation

According to a socioeconomic survey conducted by the Thailand National Statistical Office, the rate of mobile phone ownership in Thailand has been growing rapidly. Table 3.7 shows the increase

Table 3.6 Average Monthly Credit, Debit, and ATM Card Payments/Withdrawals in B (US$)

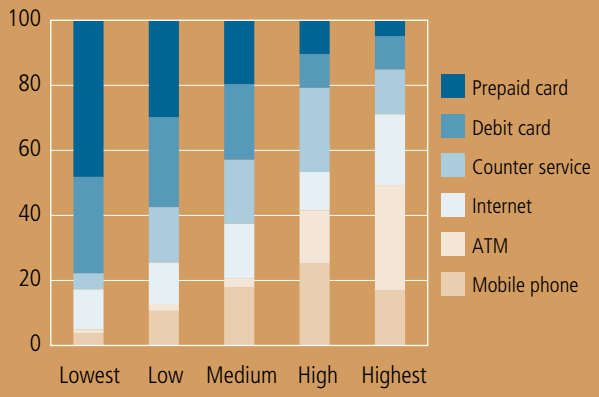
Payment/withdrawal	2004	2006	2008
Credit card payment	8,460 (267)	3,463 (109)	3,395 (107)
Cash withdrawal using ATM card	5,660 (179)	7,724 (244)	6,056 (191)
Debit card payment	—	73 (2)	75 (2)
Cash withdrawal using debit card	—	7,329 (231)	7,640 (241)

Source: Bank of Thailand.

Note: — = not available. Payments include only those from cards issued in Thailand for goods/services paid for via electronic fund transfer POS in Thailand.

Figure 3.5 Self-Reported Rating of Ability to Use Various Financial Devices

Percentage of respondents



Source: IFC Mobile Money Study 2011.

Table 3.5 Growth in Credit, Debit, and ATM Cards

Type of card	Number of cards			Average population/card[a]		
	2004	2006	2008	2004	2006	2008
Credit	8,646,100	10,900,566	12,971,694	7.53	5.99	5.11
Debit	8,425,023	13,952,784	26,266,359	—	16.51	2.52
ATM	25,834,027	30,845,358	22,423,525	2.54	2.12	2.96
	Population			65,080,000	65,280,000	66,320,000

Source: Bank of Thailand.

Note: — = not available.

a. This measure is average number of people per card, not average number of cards per person. The lower the number, the fewer people share a card as card numbers increase.

Table 3.7 Percentage Distribution of Mobile Phone Ownership by Household Socioeconomic Status and Location

Factor	2002	2004	2006	2007	2008
Socioeconomic status					
Small farmers	9.2	30.9	47.7	59.2	79.3
Medium farmers	11.4	40.5	62.7	72.9	91.3
Large farmers	25.5	58.5	82.1	84.0	96.7
Farm leasers	11.7	44.4	64.7	70.2	95.7
Fishery, forestry, agricultural services	21.4	45.6	44.2	54.1	77.5
Entrepreneur, trade	45.2	74.3	83.0	87.5	94.5
Professional, technical, managerial	74.2	92.9	96.8	97.6	98.1
Laborers	5.8	32.2	54.6	64.0	75.0
Other	36.3	69.6	82.1	87.8	92.4
Inactive	16.1	41.3	55.3	64.0	78.0
Type of location					
Municipal area	50.0	75.9	84.9	88.1	93.8
Nonmunicipal area	20.3	50.2	66.3	74.5	87.3
Region					
Bangkok metropolis	59.0	83.0	91.0	93.7	98.5
Central (excluding Bangkok)	42.1	71.5	80.5	84.5	89.0
North	20.9	50.4	64.8	71.8	87.4
Northeast	15.5	44.9	64.6	73.5	89.5
South	30.4	58.5	70.6	79.5	86.5

Source: Thailand NSO 2009.

Note: Data are as of September 2009. Small farmers are those who own less than 10 rai of land, medium farmers own 10–39.99 rai, large farmers own more than 40 rai. (1 rai = 1600 square miles.)

of mobile phone ownership by households' socioeconomic status and location. In 2002, none of the socioeconomic groups—except professional, technical, and managerial—had an ownership rate of more than 46 percent. Only 5.8 percent of the laborer households and 9.2 percent of the small farmer households owned a mobile phone. By 2009, the ownership rate of every socioeconomic group was above 75 percent. Notably, the rates were 75 percent for laborers, 79.3 percent for small farmers, 91.3 percent for medium farmers, and 96.7 percent for large farmers. As indicated in the local survey, the majority of respondents indicated using mobile phones. Approximately 55 percent use a Nokia model phone of 2G capability.

In terms of location, the growth of mobile phone ownership in rural areas and outside Bangkok has been rapid. In 2002, only 20.3 percent of households in nonmunicipal areas owned at least one mobile phone; in 2009, 87.3 percent owned phones. The same growth pattern can be seen in areas outside Bangkok.

Mobile phone services in Thailand can be prepaid or postpaid; about 90 percent of the phones with SIM cards are prepaid.[3] Although the MNOs have invested in 3G infrastructure, they are not yet able to offer it commercially, and the issuing of 3G licenses has not yet been finalized by the regulator. The biggest obstacle to further mobile growth is the lack of 3G spectrum.

[3] Information from annual reports of AIS, DTAC, and True Corporation.

The mobile industry consists of three major service providers—AIS, DTAC, and TrueMove—and a few small providers: Hutch, Thai Mobile, and TOT. In 2008, the three major providers owned about 99 percent of the subscriber market share, and about 97 percent of the revenue market share. AIS was the original provider and has led in number of subscribers and revenue. Airtime costs have been similar among the three providers. As of 2010, the average tariff rate ranged from B 0.25–2 (US$0.01–US$0.06) per minute, and from B 1–2 (US$0.03–US$0.06) per text message.

User Survey Findings 4

A small sample of Thai citizens in both urban and semi-urban areas were surveyed on the use and potential of m-money in general and specifically about m-money services in Thailand,[1] such as TrueMoney's m-money product and Advanced MPay. The survey is not intended to be a statistically representative sample of m-money users and potential users, but rather to provide an overview of people's attitudes, preferences, issues, and recommendations regarding m-money services.

As noted in the previous chapter, three major m-money service providers (AIS, DTAC, and TrueMove) share most of the market. AIS and TrueMoney (the financial services sister of TrueMove) provide an e-wallet service. At the beginning of 2010, about 6 million of the 15 million TrueMove subscribers had an e-wallet account.[2] Approximately 400,000–500,000 AIS subscribers have an MPay e-wallet account; however, only about 100,000 of them are individual active users.[3] DTAC has more than 1.4 million mobile banking subscribers through its ATM SIM service.

The survey consisted of face-to-face interviews with about 200 respondents from Bangkok and surrounding semi-urban and remote areas, which included Nakornprathom, Supanburi, Amnacharoen, and Prae. One hundred customers using m-money services were identified and randomly chosen for the survey. A further 100 people, who did not use m-money services but used mobile phones, were selected for a parallel nonuser survey. Both groups were asked structured and semistructured questions on topics including basic financial literacy, use of finances, and preferences regarding m-money.

A sample of 30 agents, typically from small and medium-size enterprises that work on behalf of the m-money service providers, were identified and polled in the survey areas. Their survey consisted of more open-ended questions designed to broadly identify key issues and recommendations.

User Survey

The sociodemographic profile of the Thai respondents is shown in figure 4.1.

The m-money user respondents can be summarized as follows:

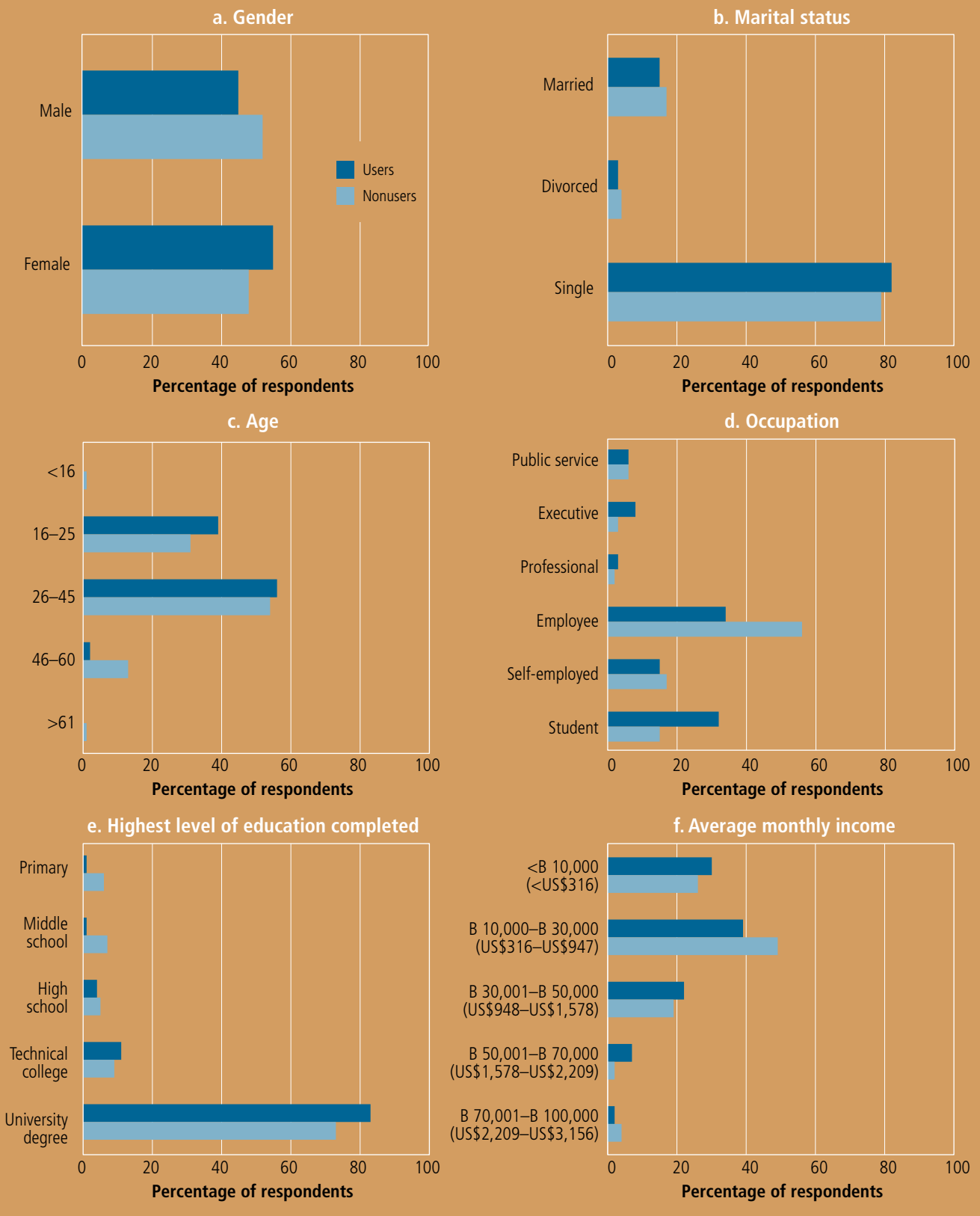
- Slightly more are female.
- Almost 40 percent are 26 years or younger.

[1] For the purposes of the survey, the definition of m-money is as follows: A financial transaction or information request via a mobile phone and usually involving a network of agents. Excluded in this definition is Internet or voice banking using a mobile phone.

[2] Interview with Piyachart Ratanaprasartporn, TrueMoney general manager, January 28, 2010.

[3] Interview with Supreecha Limpikanjanakowit, Advanced MPay managing director, February 25, 2010.

Figure 4.1 Socioeconomic Characteristics of Mobile Money Users and Nonusers



Source: IFC Mobile Money Study 2011.

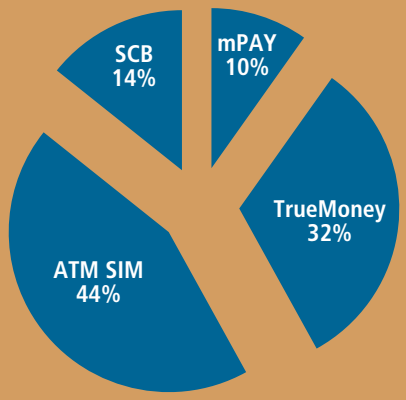
- About 80 percent are single.
- About 80 percent have a university degree (and slightly over 30 percent are still students).
- Employees make up the other large occupational group of m-money users (slightly more than 30 percent).
- Slightly less than 70 percent have income of US$900 per month or less.

In Thailand, m-money users are mostly young and well educated, but still in the lower-income groups.

Mobile Money Use

For 40 percent of Thailand's m-money users, the service is separate from and not linked to their bank account. It seems that there is little integration with the formal banking system. TrueMoney needs to integrate with the existing financial system to add subscribers. Figure 4.2 provides a breakdown of m-money services for which users had signed up.

Figure 4.2 Mobile Banking Service Provider



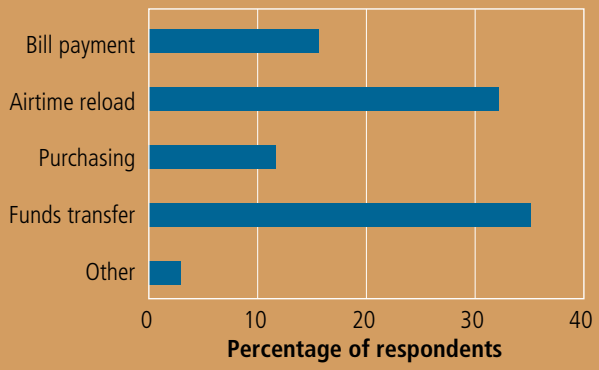
Source: IFC Mobile Money Study 2011.

The two most frequently used m-money applications, with over 30 percent each, are airtime recharge and fund transfers (figure 4.3).

Mobile Phone Use

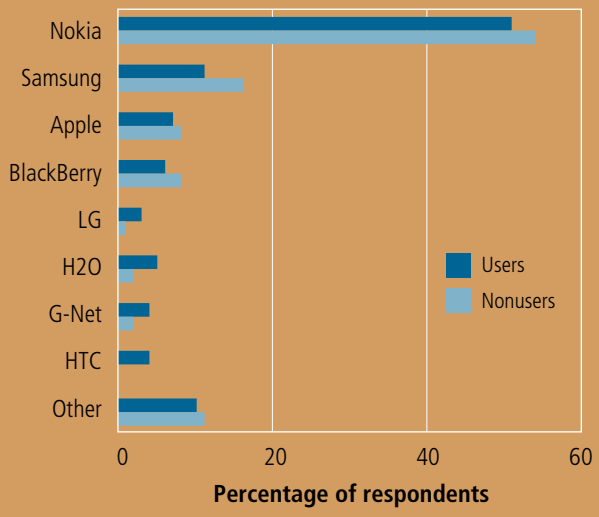
As in most other countries in the study, Nokia is by far the predominant brand of phone used in Thailand, with an equal split between users and nonusers (figure 4.4). Smartphones have a fairly strong representation, though 3G has yet to launch in Thailand, so use of smartphones is limited to their Wi-Fi capability. As in other countries in the study, a range of phone brands are in use.

Figure 4.3 Mobile Money Services Used



Source: IFC Mobile Money Study 2011.

Figure 4.4 Mobile Phone Brand Used



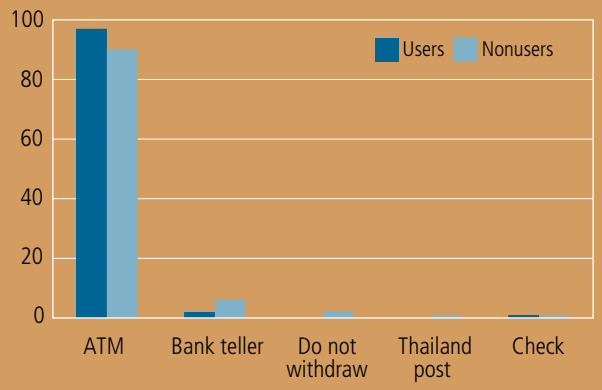
Source: IFC Mobile Money Study 2011.

Financial Access

Figure 4.5 illustrates the predominance of ATMs in Thailand and the fact that ATMs continue to be a major focus for banks. Most (97 percent) users use ATMs to withdraw cash, making the

Figure 4.5 Cash Withdrawal Sources Used Most Frequently

Percentage of respondents



Source: IFC Mobile Money Study 2011.

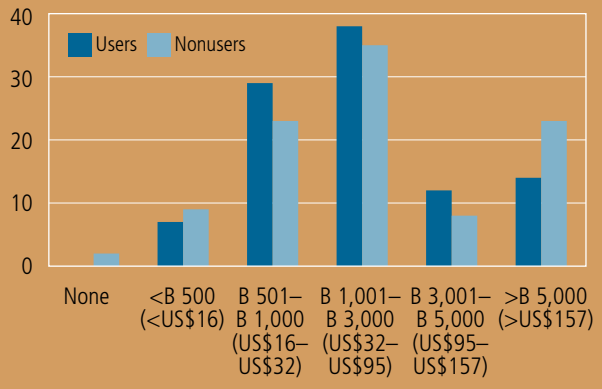
use of agents virtually insignificant. ATMs have, to a major extent, replaced the requirement for m-money agents in other jurisdictions. Similarly, 90 percent of nonusers made use of ATMs to withdraw cash.

On average, the amount of cash withdrawn was fairly large, between B 1,001 and B 3,000 (US$32–US$95) (figure 4.6). ATMs were also used frequently for smaller amounts of between B 501 and B 1,000 (US$16–US$32); 29 percent of users withdrew in this range. Cash withdrawals from ATMs are free, so small withdrawals have no cost (excluding the cost of getting to the ATM itself, and ATMs are fairly well distributed).

Emphasizing the ubiquity of ATMs, it takes 80 percent of m-money users less than 10 minutes to get to an ATM, compared with 87 percent of nonusers (figure 4.7). Of course, these statistics will change outside of urban and semi-urban areas, but the continued expansion of ATMs by the banks means that even rural areas are likely to have reasonable access to ATMs.

Figure 4.6 Typical Cash Withdrawal Amounts

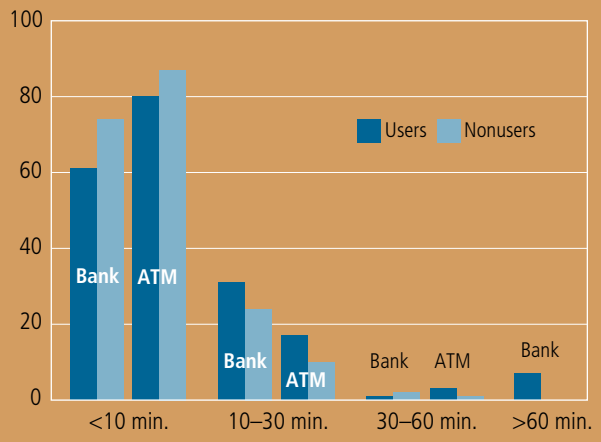
Percentage of respondents



Source: IFC Mobile Money Study 2011.

Figure 4.7 Travel Time to Nearest Bank or ATM

Percentage of respondents

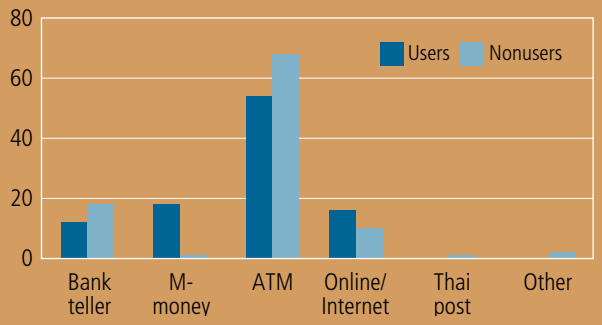


Source: IFC Mobile Money Study 2011.

About 12 percent of users stated that they used a bank teller, compared with 18 percent of nonusers. About 18 percent of users used their mobile phone to transfer money, but the overwhelming number of respondents—54 percent of users and 68 percent of nonusers—used ATMs to transfer money. Products such as DTAC's ATM SIM have taken advantage of the high ATM usage by adding the convenience of P2P transfers via mobile phone. Interestingly, for nonusers, the Internet was the third most popular mechanism to transfer money (figure 4.8).

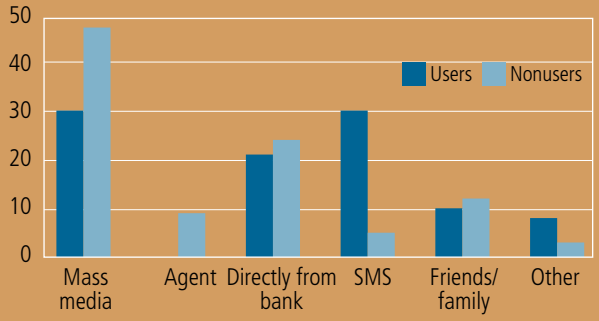
In terms of awareness, although TrueMoney has the largest subscriber base, far more respondents were aware of K-Bank's partnership with DTAC. K-Bank has been very successful in marketing the ATM SIM product to its customers. One lesson

Figure 4.8 Typical Methods of Money Transfer



Source: IFC Mobile Money Study 2011.

Figure 4.9 Preferred Source of Information on Mobile Banking Services



Source: IFC Mobile Money Study 2011.

that emerges from this analysis is that TrueMoney has substantially more work to do in making people aware of its services.

A significantly higher percentage of users (30 percent) preferred communications about m-money services via text messages, compared with only 5 percent of nonusers (figure 4.9). Users were more comfortable than nonusers in learning about new services through their mobile phones. There is an important marketing role for mass advertising, with 47 percent of nonusers choosing it as their preferred method of communication.

Trust in Financial Sector

Thais have a high level of confidence in their banking sector:[4] 96 percent of users and 97 percent of nonusers stated that they were "confident" to "most confident" in the banking sector (figure 10a).

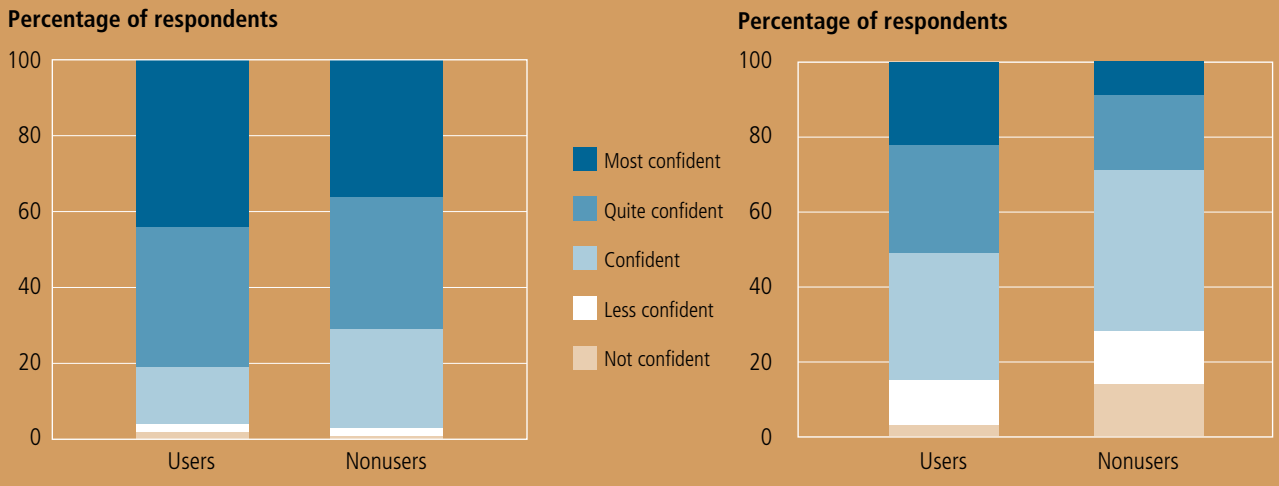
In contrast, banking services offered by mobile operators were clearly not as trusted, with users and nonusers stating that they were "confident"

[4] In the context of this study, the words "trust" and "confidence" are used interchangeably.

Figure 4.10 Level of Confidence in Banking Sector

a. Confidence in banks

b. Confidence in m-banking provided by MNOs



Source: IFC Mobile Money Study 2011.

at 34 percent and 43 percent, respectively. Combining the "confident" and "most confident" responses, however, accounts for 85 percent of users and 72 percent of nonusers. Banks are the preferred mechanism, but overall trust in both banks and MNOs is very high (figure 10b).

Benefits of Mobile Money

More than 70 percent of users strongly agreed that the main benefit of m-money is its convenience (time saving). Another major benefit is the immediacy of transfer, with 60 percent of users strongly agreeing. Cost savings was chosen as a benefit by nearly 30 percent of users, probably because bill payments are not free, and TrueMoney (for example) offers bill payments at a lower cost than banks (figure 4.11a).

Nonusers have a slightly different profile as to the benefit of m-money. They perceived the value of 24-hour access and convenience (time saving). A much lower percentage saw a cost-savings benefit (figure 4.11b). Both users and nonusers see the value in m-money, and this perception can potentially be exploited to roll out m-money more aggressively in Thailand.

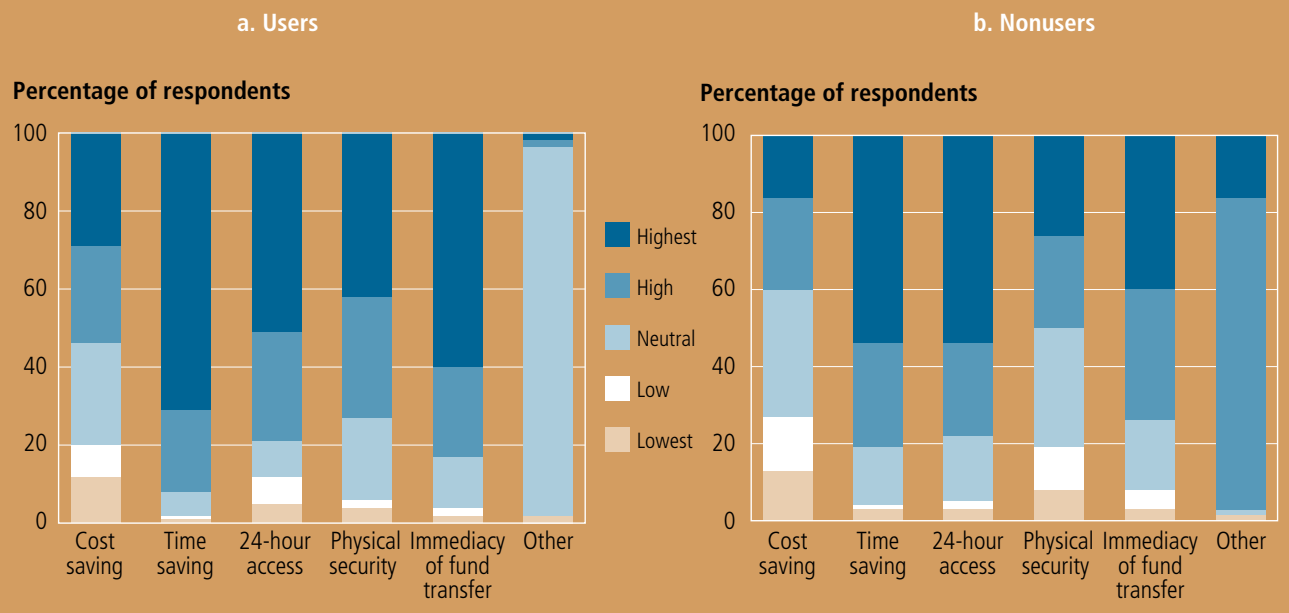
There is a strong demand for services such as salary deposits, insurance, and goods purchasing using m-money. Of those users who indicated a "high" to "very high" interest, 50 percent wanted to purchase goods using m-money. As a qualifier, nearly 70 percent stated that they would like to see "other" kinds of m-money services (figure 4.12a). What these other services might be would need further investigation, probably using focus groups.

Given Thailand's extensive financial infrastructure, it is not surprising that many nonuser respondents did not see the full potential of what could be offered on an m-money platform. The primary interest was in airtime recharges and balance inquiries (figure 4.12b).

Agent Survey

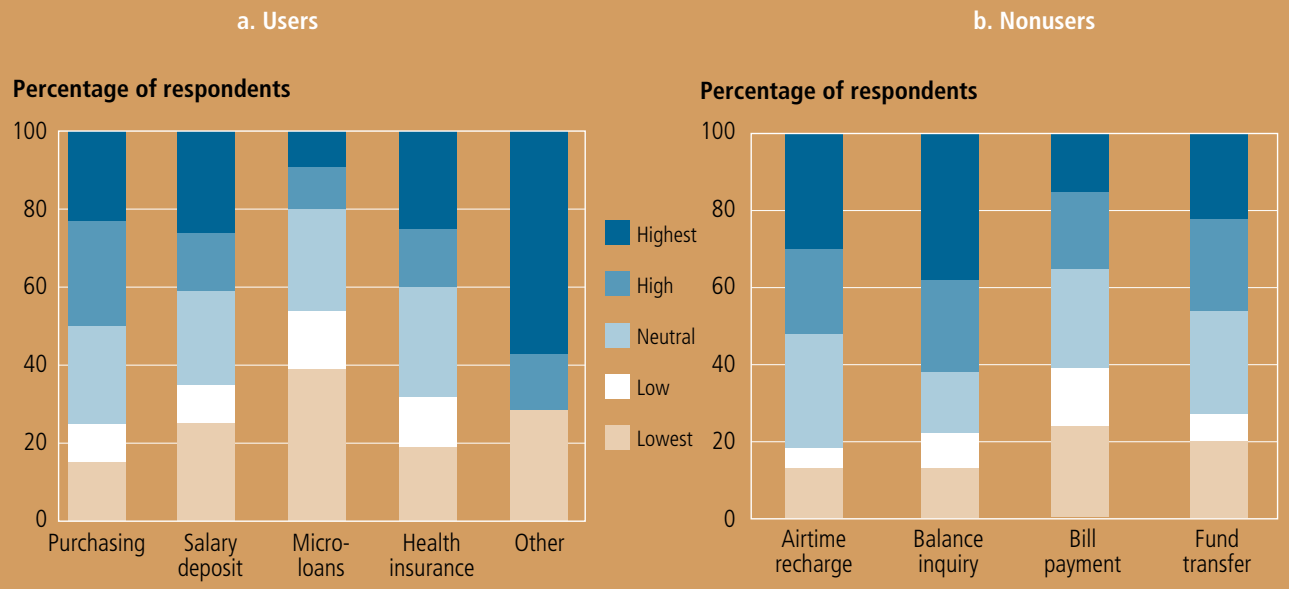
The summary of agent survey responses is based on a small sample of third-party TrueMoney agents. The survey was intended to provide an overview of their business and motivations, and to identify issues regarding m-money services, such as their satisfaction with the business and their business models. Given the small sample size, the summary of issues is qualitative, based on open-ended questions.

Figure 4.11 Respondent Rankings of Benefits of Mobile Banking



Source: IFC Mobile Money Study 2011.

Figure 4.12 Respondent Level of Interest in Various Mobile Money Services



Source: IFC Mobile Money Study 2011.

Agent Profile

Of the agents surveyed, 44 percent identified themselves as entrepreneurs employed in the private sector or in a mobile phone shop. Twenty-nine percent were located in grocery stores, and about 10 percent each were in copy shops and book rental businesses. Another 9 percent were in post offices (table 4.1).

Table 4.1 Distribution of Surveyed Third-Party Agents by Type of Business

Type of business	%
Corporate, private sector, or government employee	35
Mobile phone shop, mobile phone agent	9
Grocery store	29
Printing/copying shop	9
Post office	9
Book rental shop	3
Other business owner	6

Source: IFC Mobile Money Study 2011.

The average number of people employed in agent businesses was two, with a range of from 1–20 employees. About 38 percent of the agents were sole proprietorships, with another 30 percent having a single employee.

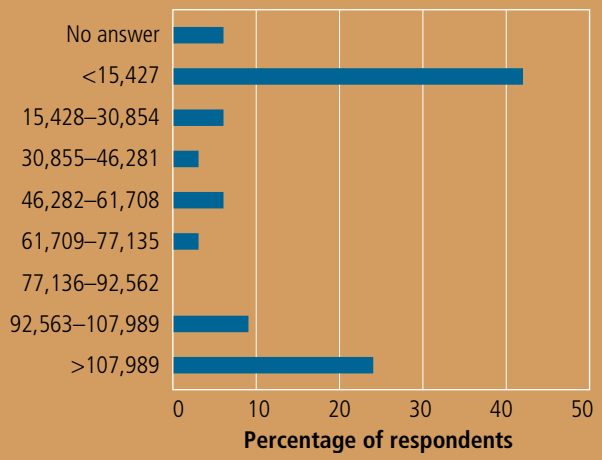
Annual reported sales of the businesses ranged from less than US$15,427 to more than US$107,990 per year. About 42 percent of the agents reported sales in the lowest category, with about 33 percent reporting sales of US$92,563 or more, and 24 percent reporting sales in the highest category (figure 4.13).

The percentage of time spent on m-money aspects of the business was typically 10 percent or less for about 35 percent of the agents, and 50 percent or more for about 39 percent of the agents (figure 4.14).

Agent Motivations

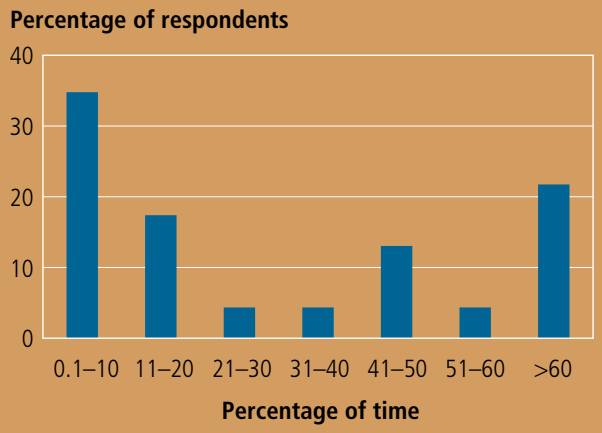
About 30 percent of the agents had been in business for at least two years, and another 30 percent for five years or more. The top reasons cited for their participation in the m-money business included recommendations to start a business by

Figure 4.13 Annual Sales of Respondent Businesses (US$)



Source: IFC Mobile Money Study 2011.

Figure 4.14 Percentage of Staff Time Serving Mobile Money Customers

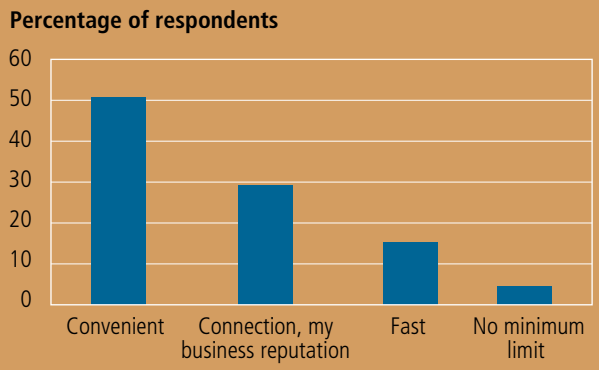


Source: IFC Mobile Money Study 2011.

friends, customers, or True staff (36 percent); ability to provide added convenience for their customers (about 30 percent); and the need to provide additional income for their business (21 percent).

Respondents overwhelmingly indicated that convenience and reliability were key reasons people conducted m-money transactions at their businesses. Customer trust in the agents played a strong factor, with 29 percent of the agents polled believing that people did business with them because they trusted them (figure 4.15).

Figure 4.15 Agents' Views on Why Clients Choose Mobile Money Services over Other Options



Source: IFC Mobile Money Study 2011.

The agents' chief suggestions for ways to improve the business pointed to the need to diversify yhr products sold, increase profitd on current activities, and maintain customer convenience. About 40 percent indicated that their business needed to diversify the number of products sold aside from the typically available m-money transactions. In fact, a primary complaint from 20 percent of respondents was that customers were unable to conduct a variety of utility bill payment transactions.

A further 20 percent indicated that technical problems such as system crashes were a main concern, especially if the convenience aspect of the customer service was degraded. Requirements to make frequent visits to their bank branches for deposits and withdrawals were considered a downside to the agent business by about 11 percent of respondents.

Agent Training and Marketing Support

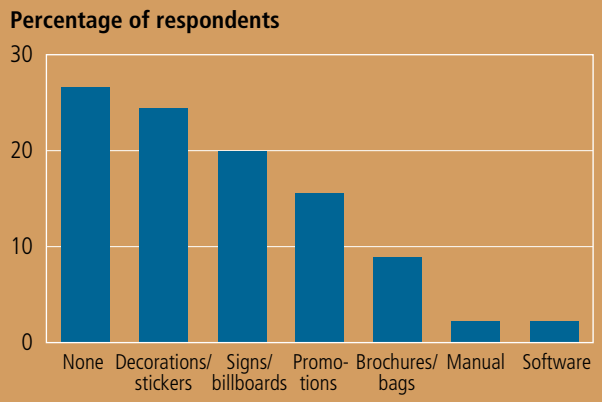
The majority of the TrueMoney agents (91 percent) indicated that they had no training in the features of the products aside from a training manual and support materials supplied by True to about 75 percent of respondents. About 52 percent of the agents suggested this level of training and support was adequate, with 30 percent suggesting that their knowledge levels were

adequately updated and maintained. However, at least 48 percent felt the training was inadequate, and 70 percent felt knowledge levels were not maintained.

As Safaricom has emphasized, agents are the touch points to the customer, thus training agents is critical (Jenkins 2009). If TrueMoney's range of products is to be expanded, as is suggested in this report, that one of the major initiatives will need to be training.

Marketing materials provided included small advertisements (stickers, signage, and information on current promotions). A substantial number of respondents (27 percent) said they had not received any marketing materials (figure 4.16).

Figure 4.16 Marketing Materials Provided to Agents by Service Provider

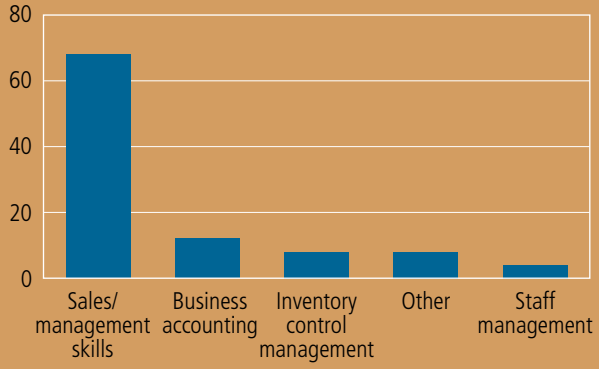


Source: IFC Mobile Money Study 2011.

Agents suggested that the most useful training would be in sales and management skills, small business accounting, inventory control, and staff management. Most (68 percent) believed sales and management skills would be the most useful. Since most agents were small businessmen, the lack of formal sales and management training is to be expected (figure 4.17).

About 20 percent of the agents noted that, since the agent business was not their primary business, attention to m-money issues might be considered less important than their other responsibilities.

Figure 4.17 Training Agents Considered Most Useful



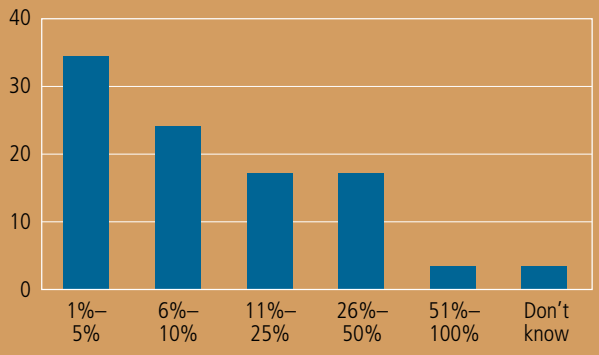
Source: IFC Mobile Money Study 2011.

Agent Transactions and Revenues

The main transactions conducted via agents were mobile airtime recharge, bill payments, and—in some cases—fund transfers. The percentage of overall sales attributed to the use of m-money services is shown in figure 4.18.

Thirty-four percent of the surveyed agents said that the revenue from m-money services as a percentage of total sales was 1–5 percent. M-money service revenues of 6–25 percent of total sales were indicated by another 36 percent of agents. For about 15 percent of agents, m-money services made up 50–100 percent of their sales. For

Figure 4.18 Revenue from Mobile Money as Percentage of Total Sales



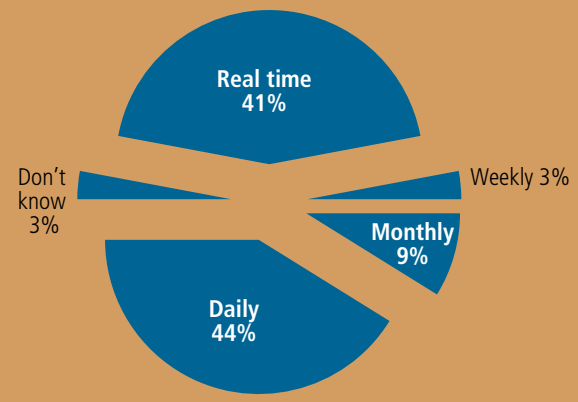
Source: IFC Mobile Money Study 2011.

the majority of agents (58 percent), m-money accounted for less than 10 percent of their total revenue. This low percentage might explain why agents want to expand the range of m-money products available.

For mobile phone recharge transactions, the typical commission charged by agents was 3.0–3.5 percent of the transaction amount. For bill payments, the typical transaction fee was approximately US$0.19 per bill.

Payment of fees and commissions by the m-money service provider to the agent is typically done immediately or on a daily basis (figure 4.19).

Figure 4.19 Frequency of Compensation by Service Provider



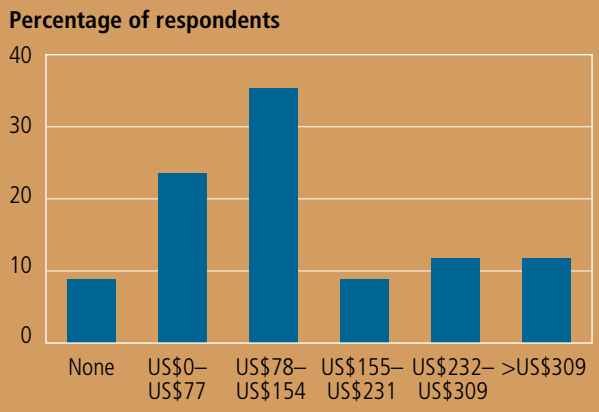
Source: IFC Mobile Money Study 2011.

Agent Costs

The cost of business start-up for the agents was generally quite low. About 60 percent of agents indicated they spent nothing to start up their business; another 24 percent estimated that US$154 was required for start-up. In most cases, start-up was funded from the agent's savings, with only about 6 percent of the agents requiring a loan for start-up.

Agents were required to maintain a minimum deposit in an account with the service provider. For about 35 percent of agents, this represented a cost between US$78 and US$154. Another 24 percent were required to maintain deposits of US$232 or more (figure 4.20).

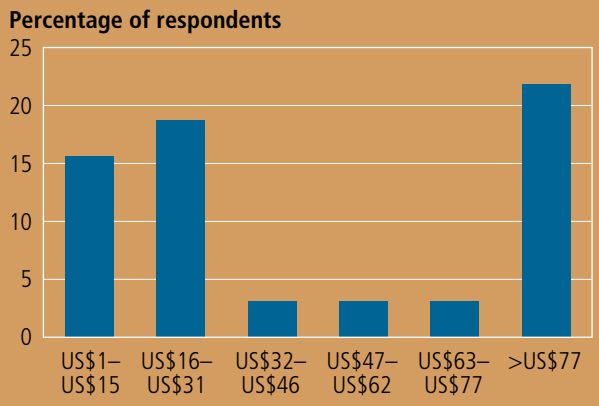
Figure 4.20 Required Minimum Deposit to Service Provider Account



Source: IFC Mobile Money Study 2011.

About 30 percent of agents said they had no cash float requirement, and another 35 percent indicated requirements for US$31 or less. Some agents (22 percent), however, had cash float requirements in excess of US$77 (figure 4.21).

Figure 4.21 Cash Float Requirements

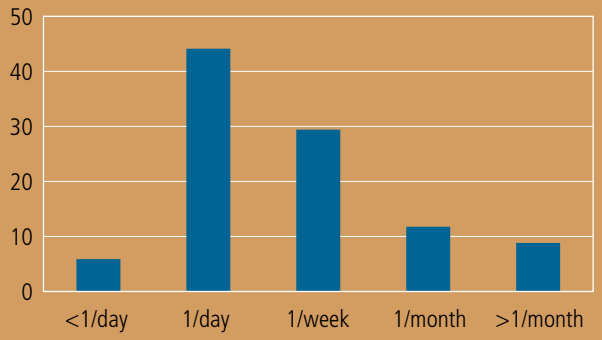


Source: IFC Mobile Money Study 2011.

Constraints to managing agent liquidity include the time required for depositing and obtaining cash from a bank. Although 88 percent of respondents had no cash limit requirement for which bank deposits had to be conducted, about 44 percent conducted daily banking transactions. Another 30 percent traveled to the bank on a weekly basis. For about 70 percent, these trips took 10 minutes or less. About 20 percent

of respondents cited time commitments of about 30 minutes (figure 4.22).

Figure 4.22 Frequency of Trips to the Bank



Source: IFC Mobile Money Study 2011.

Adequacy of Customer Support

Overall, agents felt customer support by the service provider was sufficient in case of any problems, with the majority responding that if any issues or concerns came up regarding the service, they could readily get support via the call center support line.

Key Challenges

The main challenge, as indicated by a majority of agents, was the need to increase the profitability of the service. It is hard for the agents to turn a significant profit when they are conducting only a few types of transactions, such as airtime recharge, bill payments, and fund transfers. Most agents expressed the need for the service to diversify into additional products, such as microloans. Agents indicated that even within the limited set of transactions they conduct now, there is room for improvement. For example, a number of utility bill payments might be made via the service. Fund transfers and product purchases might be used more if there were more customer service points where they could be accessed by customers.

Agents noted that building consumer knowledge and trust in the service was a key factor in business success. Survey results indicated a need for improved marketing of the services, but some agents also made the point that an important success factor in the m-money aspect of their business was trust. The trust relationship had much to do with how long the business had been operating in the community and its track record of dealing fairly with people. But trust is a commitment that has to be promoted and, ultimately, backed by the service provider. As one agent noted, "Advertisements and promotions by service providers need to include information on how they uphold the safety and reliability aspects of the service."

Another concern involved the reliability, speed, and interoperability of the technologies. Agents reported limitations, such as frequent system crashes, inability to reverse some transactions (e.g., Advanced MPay top-ups), and lack of interoperability between systems (e.g., TrueMoney and Advanced MPay). With other payment options available, the service must meet customer expectations of speed and reliability, or customers will turn to conventional payment methods, such as cash or debit cards.

5 Business Models

The three major mobile service providers in Thailand—AIS, DTAC, and TrueMove—have been offering various types of m-money services. AIS started its m-money business (Advanced MPay) in late 2004. DTAC began by offering an e-wallet, but in 2008 evolved its offering to a wallet linked to a bank account held by its partner, K-Bank. True Corporation (the parent company of TrueMove) launched its "eWallet" through a subsidiary called TrueMoney in 2005.

Thailand demonstrates three business models, each of which has become relatively successful in terms of the business objectives of the owners, although they all continue to search for ways to decrease costs and attract new subscribers. The imminent introduction of phone number portability has given each of the MNOs an incentive to introduce value-added services to reduce "churn," or turnover of customers. Table 5.1 summarizes each of the business models, which are then discussed in more detail; table 5.3 at the end of this chapter captures these details.

AIS and TrueMoney provide a mobile wallet solution called eWallet. At the beginning of 2010, about 6 million out of 15 million TrueMove subscribers had an eWallet account[1]—up from 837,000 in the third quarter of 2008. Approximately 600,000 AIS subscribers have an Advanced MPay account. However, only about 100,000 of these accounts are active.[2] DTAC has more than 1.4 million mobile banking subscribers through ATM SIM. At the beginning of 2010, interoperability between Advanced MPay and TrueMoney was not possible unless funds were transferred to a bank account and then paid through the interbank system.

TrueMoney

TrueMoney is a subsidiary of True Corporation, a conglomerate with interests in mobile and fixed line phones, pay TV, broadband Internet, radio, coffee shops, and online gaming. TrueMoney is offered through its sister MNO company, TrueMove. TrueMoney was introduced to enable customers to top up many prepaid services and to pay their various True Corporation bills more easily. Because True Corporation could guarantee a certain volume of transactions, it was able to get retailers to offer top-up and True bill payment services. The TrueMoney eWallet can be topped up by a bank transfer (from linked accounts at four banks), at the ATMs of four banks, or by using a universal scratch card called the TrueMoney Cash Card.[3]

[1] Interview with Piyachart Ratanaprasartporn, TrueMoney general manager, January 28, 2010.

[2] Interview with Supreecha Limpikanjanakowit, Advanced MPay managing director, February 25, 2010.

[3] A scratch card is a card with a prepaid value and a PIN. To view the PIN, the user must scratch the masking. It is usually used to pay for airtime.

Table 5.1 Business Models of Three Major Mobile Money Providers in Thailand

Element	TrueMoney (True Corporation)	Advanced MPay (AIS)	ATM SIM (DTAC–K-Bank)
Business structure	▪ MNO-driven e-wallet	▪ MNO-driven e-wallet	▪ Bank and MNO alliance
Strategy	▪ Bill payments for True group and non-True companies, especially utility bills, airtime top-up, selling virtual goods	▪ B2B transfers for airtime resellers	▪ Growth from K-Bank customer base for MNO ▪ E-transaction banking for bank
Key success factors	▪ e-Wallet developed in order to cater to the needs of companies within the True group ▪ Reduce airtime sales commission ▪ Little need for cash-out points as focus on bill payments, so merchant liquidity is not an issue ▪ Easy access for merchants to bank accounts and banking infrastructure ▪ Minimize fixed costs and share revenue	▪ Focus on B2B; training network of AIS resellers (now expanded to include other businesses); high-margin business, few competitors in the B2B space	▪ Shared costs and risks ▪ Access to ATM infrastructure for cash-out
Focus segment	▪ Segmentation for group company billers ▪ Cost leadership for postpaid bill payers ▪ Multiple services provided at TMX location (a one-stop shop)	▪ Segmentation primarily targeting airtime merchants	▪ Segmentation targeting bank customers looking for greater convenience

Source: IFC Mobile Money Study 2011.

TrueMoney cash cards are sold through the airtime reseller network and some retail stores. Agents at the stores receive a lower commission for these cards than for a normal airtime scratch card, but they sell higher volumes since the universal scratch card can be used to top up many prepaid services, such as airtime, online games, Wi-Fi, prepaid Internet, voice over Internet Protocol (VOIP), buy electronic content, or pay an electronic commerce merchant. It was decided to introduce the TrueMoney cash card for top-up services since it would already be familiar to airtime sellers and prepaid airtime buyers. Customers can also top up eWallet from a credit card, bank account, or cash at a True payment counter. TrueMoney has three categories of agencies where top-ups can be done and True bills can be paid:

- **TrueMove stores**—full-service retail stores, where all of TrueMove's services are also offered (some, which incorporate a coffee shop, are called True Coffee stores)
- **TruePartners**—franchisees of TrueMove, which offer TrueMove services as well as bill payments and also sell TrueMoney cash cards
- **TMX**—payment counters within existing retail stores such as CP Freshmart where True bills and non-True group bills can be paid electronically.

TrueMoney has focused on expanding TMX across Thailand because these have the lowest initial investment. Unlike a normal payment counter service, a TMX dealer does not have to manage its own account (eWallet), because all bill payments and airtime top-ups are deducted from the TMX wallet automatically and immediately. Because all transactions are done in real time, there is no delay in the money settlement or transfer to TrueMoney.

Currently, there are three types of TMX:

- **TMX online**, based on PC and high-speed Internet; transactions are performed on PC via high-speed Internet

- **TMX mobile**, based on TrueMove mobile network; transactions are performed on a mobile phone via the global system for mobile communications (GSM) network
- **TMX EDC** (electronic data capture), based on EDC and TrueMove SIM; transactions are performed on an EDC device via the GSM network.

To encourage people to pay their True bills, True bills can be paid at all three categories of agencies for free. TrueMoney receives a commission from the billing company for postpaid bills and prepaid services such as online games. All postpaid bill payments (outside True Group) at TMX outlets (e.g., at CP Freshmart) cost about B 10 (US$0.32) compared with bank charges of B 15 (US$0.47) or more.

TrueMoney recently introduced a contactless payment method called Touch SIM, which can be used offline for small-value transactions at merchants with special contactless readers. The Touch SIM can easily be input in a mobile phone like a normal SIM; however, it is relatively expensive (B 300 or about US$10), which has generated some customer resistance. TrueMoney is currently bearing some of the cost, allowing it to sell for B 149 (about US$5).

Free full-day training is available for merchants twice a month in Bangkok. The introductory training pack includes a CD with all the product and process information. Support is also provided through a special line for merchants at the TrueMove call center.

Advanced MPay

Advanced MPay is a subsidiary of AIS, the largest mobile network in Thailand. AIS is now owned by the Singapore Telecom (Singtel) group which includes MNOs in Bangladesh, India, Pakistan, and the Philippines.

Unlike TrueMoney, Advanced MPay is not intended to make efficient bill payments to sister companies, since it is not a conglomerate. Rather, AIS originally saw m-money as an additional revenue stream in a competitive mobile market. Its main challenge was to make m-payments relevant and valuable given the widespread banking infrastructure. Advanced MPay has 600,000 subscribers, 90 percent of whom have used the service in the past three months. It needs 5.5 million annual transactions to break even. The service offers a choice of channels: short message service (SMS), interactive voice response (IVR), Internet, wireless application protocol (WAP) or Java, but AIS has not used STK (SIM Toolkit) integration because it would be more expensive. It has about 500 merchants signed up to accept payment through Advanced MPay. AIS has provided a dedicated SMS gateway for payments to ensure greater reliability.

Funds into the e-wallet come from cash, bank accounts, and credit cards. The link to the card and/or account is made on the phone. The maximum balance in the wallet is B 30,000 (about US$950), but a merchant can apply for a higher balance. This is acceptable to the regulator since the operator conducts a higher level of customer due diligence on these merchants than would be done for a standard account. Micropayments of less than B 100 (about US$3) are taken from the e-wallet balance, but payments of more than B 100 can be pulled from a credit card.

While Advanced MPay has a user base of 600,000, its core business, which drives profitability, is now business-to-business transfers. This service was established mainly to pay the 200,000 AIS airtime resellers efficiently and for them to buy airtime stocks,[4] but it has now expanded to include other businesses. Because it does not require mass marketing, this model has lower marketing costs as well as higher transaction values. About 40 percent of the business is done around metro Bangkok.

AIS places greater emphasis on access to cash than does TrueMoney, and offers 10,000 outlets where cash can be withdrawn. The fee is B 20

[4] A stock of prepaid values for airtime can be held in physical scratch cards or as virtual value stored in an account.

(US$0.63). There is a maximum withdrawal of B 5,000 (about US$160); the average withdrawal is B 1,000 (about US$32). Originally this service was offered so customers could empty and close their accounts, but AIS now sees an opportunity to offer P2P remittances and has found no resistance from merchants in so doing.

DTAC and K-Bank

DTAC is in partnership with K-Bank, one of the few banks that have entered the m-money space aggressively. K-Bank's strategic objectives are to add a level of convenience for its 7 million customers and to migrate all their transactions—including m-payments—to e-banking to reduce infrastructure costs and free staff for other pursuits.

The objectives of DTAC are to increase its share of K-Bank's customer base (30–40 percent of the subscribers to the joint service are new to DTAC), to reduce churn, and to increase its SMS revenue and airtime sales.

K-Bank has 1.4 million m-banking subscribers and 600,000 Internet banking subscribers. It offers three options:

- SMS banking, which can be used for mobile top-up
- ATM SIM—menu and ATM service (more than a million subscribers, but probably 10 percent of these are active users)
- WAP based—handset dependent (100,000 users); K-Bank calls this "real m-banking" as opposed to putting Internet banking on the phone.

In 2008, DTAC and K-Bank introduced ATM SIM, which enables mobile phones to conduct most ATM functions such as checking account balances, transferring funds to other bank accounts, paying utility companies, and refilling mobile phone credits. All subscribers to the ATM SIM are required to have an account with K-Bank. Customers are charged a small fee over the normal ATM service rates.[5] The introduction of ATM SIM greatly increased the number and value of mobile banking transactions. According to the Bank of Thailand, the volume of m-banking transactions increased from 359,407 in 2007 to 4,670,377 in 2008. The annual value of transactions also increased, rising from B 336 million (about US$10.6 million) in 2007 to B 25,218 million (about US$796 million) in 2008. Table 5.2 shows m-banking statistics published by the Bank of Thailand.

DTAC tried to go on its own prior to partnering with K-Bank. In one province, it piloted a model that allowed customers to use their mobile phones to deposit and withdraw cash and make payments through its agents. However, distrust of mobile operators (as compared with banks), a lack of trust in agents, and the extensive bank branch and post office networks kept it from gaining acceptance among subscribers. A bank brand seems to give customers confidence in the security of the system. The bank has indeed put a great deal of emphasis on security, requiring links to a bank account, the use of a one-time password,

[5] In 2010, each transaction, including balance inquiries, cost B 2 (US$0.06). The first five transactions of each month are free of charge. There are eight transactions per month on average.

Table 5.2 Growth in Mobile Banking

Factor	2004	2005	2006	2007	2008	2009
Number of users	18,312	85,565	133,419	168,434	232,758	257,677
Volume of transactions	22,704	329,769	355,048	359,407	4,670,377	11,246,192
Value of transactions in million B (US$)	745 (24)	622 (20)	392 (12)	336 (11)	25,218 (796)	63,603 (2,007)

Source: Bank of Thailand 2009b.

Note: Data for 2009 are preliminary.

and activation at an ATM. An initial face-to-face encounter with someone who looks professional and trustworthy is also important. DTAC and K-Bank's main expenses have been for communications and face-to-face time with new customers. The bankers believe that the cost of customer acquisition against future income would be considered high if it were not part of a broader business strategy.

K-Bank's target market for m-banking is workers whose earnings are less than B 20,000 (about US$630) per month and who are probably receiving a salary from their first office job; or alternatively, factory workers who want to avoid lines at ATMs. They see a key offering as the ability to top up mobile accounts; thus, it is a problem that the product only allows top-ups from one operator. As indicated by local survey respondents, mobile airtime top-ups is the second most popular transaction after fund transfers.

Prior to its launch, m-banking was seen as a product targeted at the professional and managerial classes, an image reenforced by advertising. The ATM SIM launch required new images that emphasized the convenience to a younger and less-wealthy market segment. New subscribers were attracted by encouraging viral marketing in a "friend gets friend" campaign. K-Bank is focused on increasing its automated transactions and perceives m-banking as a strand in this strategy, allowing it to offer customers multiple electronic channels including ATMs, IVR, and Internet, thus reducing the number of cash and check transactions and the costs of the banking infrastructure. Many of the 600,000 Internet banking users tend to be sole proprietors. This e-migration strategy has so far accounted for 81 percent of the banking transactions through electronic channels.

There is no exclusivity between the bank and the MNO; at some stage, it will be in the interest of the bank to access clients of other MNOs and for the MNO to be able to target customers of other banks. It is hoped that the Bank of Thailand will encourage common standards and cooperation.

Table 5.3 Detailed Business Model Comparison

Element	TrueMoney (True Corporation)	Advanced MPay (AIS)	ATM SIM (DTAC–K-Bank)
Objectives	▪ Ensure profitability and pass off fixed costs to merchants	▪ Profitability as stand-alone (although there is some cross-subsidization between AIS and Advanced MPay, e.g., airtime) ▪ Positive margin in 2009, break even after 4 years, on schedule for 6.5 million transactions in March 2010	▪ Bank-led model with K-Bank—provide channel and settlement, part of e-migration strategy ▪ Attracting new MNO customers from bank customer base (30–40%) or primary SIM from existing customers with multiple SIMs
Revenue streams	▪ Bill payments B 10 (US$0.32) for postpaid bills, e.g., utility (although can be reduced to B 5 (US$0.16) through promotions); True Bills free to customer ▪ True revenue from customer transaction fee, commission from bill issuer and prepaid service companies ▪ Low interest rate so little earned on float of average B 200 million (about US$6.3 million) ▪ B 1.5 billion (about US$47.3 million) revenue; net profit is B 30 million (about US$947,000)	▪ Cash withdrawal and transfer back to bank account B 20 (US$0.63) for any channels withdrawal from ATM or branch B 20 (US$0.63), shared between merchants and Advanced MPay ▪ Bill payments B 10–15 (US$0.32–US$0.47) ▪ 80–85% of revenues from B2B business, 200,000-strong network of B2B users ▪ Outsourced adding bill payments to a third party	▪ B 2 (US$0.06) per transaction after 5 free and an average of 8 SMS text messages per month, so average income per month per client is B 6 (US$19) ▪ Bill payments cost B 5 (US$0.16)
Costs	▪ Commission paid in real time to merchants ▪ Merchant training—now only in Bangkok, full-day session is focused on product features ▪ Special line at call center for TMX merchants	▪ Marketing budget was B 50 million (about US$1.6 million) but now reduced ▪ 40 million SMS text messages per month (Advanced MPay absorbs these costs) ▪ Investment in system and building modules ▪ MPay has 29 staffers, who mainly handle settlement ▪ Agent network managed by AIS	▪ System cost B 10 million (about US$316,000) ▪ 100 people marketing ▪ New SIM B 20 (US$0.63)
Transac-tions	▪ Touch wallet—offline for small value transactions ▪ Online wallet—TrueMoney ▪ Merchants for cash top-ups, bill payments, buy games ▪ Internet payments—to avoid using credit card online ▪ Cash-out only at True's own shops ▪ 10% transaction charge to cash-out; merchants do not like paying out cash ▪ Cash-in from linked bank account or credit card or electronic transfer from TMX agent or buying cash card ▪ Cash card top-up 80% of cash-in channel	▪ E-wallet topped up from cash, bank account—maximum balance B 30,000 (about US$950) or can apply for higher balance (e.g., merchant) ▪ Micropayments of less than B 100 (about US$3) from e-Wallet balance ▪ Payment of >B 100 (about US$3) can be pulled from credit card or bank account ▪ Link to card or account done on application at ATM ▪ 500 bill pay merchants ▪ Cash-out up to B 5,000 (about US$160)—average B 1,000 (about US$32) (initially offered so clients could close accounts) ▪ Pay on Internet with one-time password on mobile phone ▪ P2P to any operator client SMS identifier—one-time PIN, sender gives ID number of receiver, mobile phone number, and PIN ▪ Payments at vending machine	▪ P2P ▪ DTAC top-up
Target market/ demand	▪ Anyone who pays a bill and/or tops up prepaid services especially online games	▪ Merchants for buying stock of SIMS, airtime, etc. ▪ Early adopters are 20- to 35-year-olds, university students, first-time workers ▪ Primary market is B2B; started as mechanism to lower costs to airtime merchant network	▪ Factory workers to avoid queues, customer base of K-bank, first-time salary earners

Element	TrueMoney (True Corporation)	Advanced MPay (AIS)	ATM SIM (DTAC–K-Bank)
Merchants	▪ Pay B 19,990 (about US$630) for TMX EDC if no PC, B 1,990 (about US$63) for TMX online one-time license, B 599 (about US$19) for TMX mobile version ▪ Own shops—130 ▪ True partners/franchises—800 ▪ TMX—shops with TMX payment service (level one distributors = 10–20) ▪ Agents buy e-money and are paid commission in real time by True	▪ 10,000 cash-out merchants ▪ Merchants share in B 20 (US$0.63) withdrawal fee paid next day ▪ Less than 3,000–4,000 transactions per month ▪ Average cash-out payment is B 1,000, (about US$32) with a max limit of B 5,000 (about US$160)	▪ DTAC outlets, access to K-Bank ATMs but no strategy to use third parties
Users	▪ Anyone who pays a bill and/or tops up prepaid services; e.g., young people playing online games	▪ 90% of registered base of 600,000 had used service in the last 3 months ▪ Not allowed to automatically register AIS customers—need separate registration, PIN ▪ Merchants—200,000 do one transaction every 2–3 days (incentivized since it is a free transfer instead of paying bank charges), benefit to AIS regarding administration and reconciliation	▪ Existing K-Bank customers (including those from other mobile operators) ▪ Existing DTAC customers
Strategy	▪ Leverage existing TrueCorp customers by providing an efficient way to pay bills ▪ Focus on prepaid top-up services	▪ B2B focus; provide efficient money transfer service to businesses	▪ Retention/loyalty program for existing customers, acquisition of existing K-Bank customers ▪ Not targeting people outside existing ecosystem
Pipeline	▪ Move away from TrueMoney cash card to cheaper electronic transactions for non-True group bill payments and money transfers ▪ Expand to remote areas using TMX model	Investigating opportunities in several areas: ▪ International remittances through the Singtel Southeast Asian network of sending and receiving countries ▪ Marketing alliances with trusted department stores to increase trust among consumers (in terms of the Advanced MPay brand) ▪ Expand into near-field communications, with an eye on transportation, specifically the skytrain and metro system in Bangkok	▪ Link to other banks (aside from K-Bank) ▪ Pilot cash withdrawals from the ATM network
Registra-tion	▪ TMX must register; entails filling out a form ▪ End users use over-the-air registration by entering the 13-digit Thai ID number and creating a PIN	▪ Merchants able to raise balance since have detailed know-your-customer requirements ▪ Direct link to Ministry of Interior to verify ID (24-hour turnaround) ▪ Account opened and can transact before confirmation from Ministry of Interior, suspended if unusual status from ministry	▪ Primary (and preferred) registration at K-Bank as part of normal bank registration process ▪ Requires new SIM and therefore need to change number or do SIM swap at DTAC shop ▪ Activation at ATM ▪ KPIs in DTAC to sell the KSIM and customer to transact
Marketing	▪ Convergence-based cross promotion across group companies; e.g., free cable TV if spend at least B 300 (about US$10) on airtime top-up through TrueMoney ▪ Superdealers promote multipurpose cash card used for airtime and/or cash top-up	▪ Spent huge amounts on mass marketing; then focused on B2B ▪ Incentives such as getting additional airtime if bought on phone ▪ Merchant benefit from no bank charges for transfer and easy reconciliations	▪ MNO and bank joint marketing; MNO pays for new larger SIM required ▪ 5 free transactions

Source: IFC Mobile Money Study 2011.

Conclusion 6

Thailand has three relatively successful m-money operations. The country has a high ATM penetration in addition to a strong retail network. Both TrueMoney and AIS have integrated into the retail network, particularly 7-Eleven and CP Freshmart. DTAC is the only provider to have integrated fully with a bank. The banks have concentrated on ATM penetration to service all segments of Thailand and offer a range of services, including money transfers, bill payments, insurance payments, and cash-in and cash-out. To compete with the banks, particularly with regard to bill payment services, both AIS and TrueMoney provide bill payments at a cheaper rate than the banks and have established payment service dealers in remote areas where there is no bank branch or ATM.

With widespread access to ATMs and their range of services, m-money is unlikely to have as dramatic an impact on Thai society as M-PESA has had in Kenya. Nevertheless, several opportunities have been highlighted in this report.

A key recommendation is that m-money solutions integrate into existing banking infrastructure for two reasons:

- Cash is still a significant medium of transaction.
- The financial infrastructure of ATMs is growing fast, and ATMs could be an additional agent network for m-money.

M-money has the capability to play a role in reducing levels of cash, which would significantly benefit the Thai economy. Thailand did a number of things right in fostering its m-money market; specifically, it

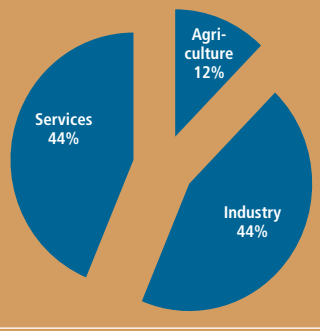
- provided an open and welcoming regulatory environment—the Bank of Thailand (the central bank) has been open to the use of m-money and has issued regulations to encourage the transition from cash to e-money;
- integrated m-money into the retail network—the ability to make payments and add value to accounts has been heavily integrated into the existing retail network;
- lowered the cost of paying bills—to compete against banks and ATM services, m-money providers have offered bill payments at lower cost than the banks;
- innovated contactless payment systems—TrueMoney is experimenting with Touch SIM, a contactless payment system with a radio frequency identification (RFID) technology that can be fit into most mobile phones; and
- integrated m-money with existing mobile businesses—m-money providers need to be licensed separately from MNOs, but both AIS and TrueMoney have aggressively targeted their own customers to increase their revenues, and both companies are profitable.

Another factor that affects m-money, particularly from an MNO perspective, is the combination of the mobile operator licensing system and the lack of an official 3G spectrum. The licensing regime for mobile operators means that MNOs operate under a build-operate-transfer model. In the case of TrueMobile, the license expires in 2013. With the 2G license expiring, the major focus of the MNOs is now on the 3G spectrum, since this might have to replace the revenues earned from the existing 2G operations. M-money must therefore compete for capital against a 3G network roll-out—a business model that has proven to bring in substantial revenues.

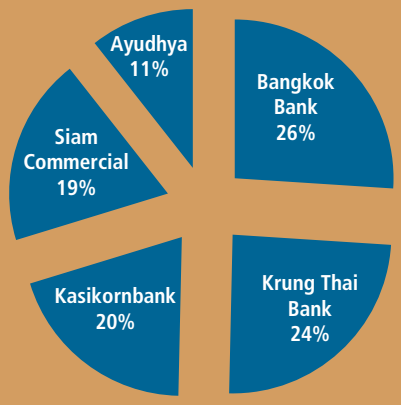
Appendix A
Fact Sheet and Demand Estimates

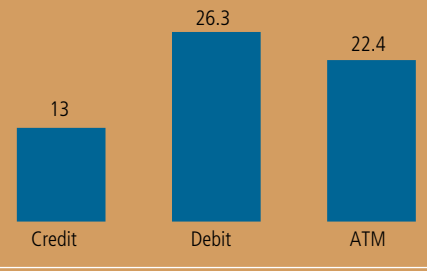
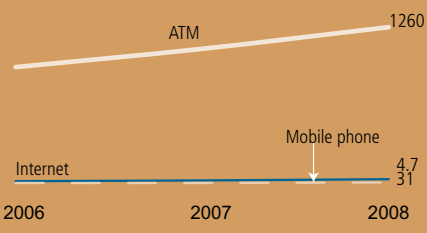
Table A.1 Fact Sheet

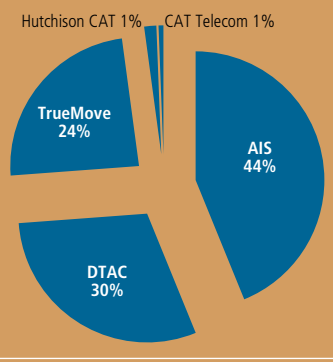
Country Profile		
Population	66.0 million[a]	Sector shares of GDP
Geographic area	513,120 sq. km[a]	
GDP	US$263.9 billion[b]	
GDP per capita	US$3,940[b]	
Rural population	64% (42.2 million)[c]	
Rural poor	7.5% (4.786 million)	
Population below poverty line	13.6% (9.0 million) (calculated; 1998)[d]	



Financial Profile		
Number of banks	14[e]	Top five banks by deposits
Total branches	5,806[e]	
Total correspondent banking agents	6 (2008)[f]	
Number of bank accounts	118 million (2008)[f]	
Banking penetration	59.0% (2008)[g]; 1,498 deposit accounts per 1,000 adults[h]	
Number of POS devices	259,567 (2008)[h]; 393.3 per 100k pop	
Number of ATMs	34,745 (2008)[h]; 52.6 per 100k pop	
Number of financial cards	61.7 million; 0.93	



Financial Profile (continued)		
Credit card growth	8.6 million (2004), 13.0 million (2008)[h]; 10.9% average annual growth 2004–08	**Number of financial cards (millions)** 
Debit and ATM card growth	33.8 million (2004), 48.7 million (2008)[h]; 9.6% average annual growth 2004–08	
Remittance flow—inbound	1,898 million (2009)[h] (United States, Cambodia, Germany)	
Remittance flow—outbound	Amount not available (China, Nepal, Japan)	**Use of e-payment channels (transactions per capita)** 
Number of microfinance institutions	1,796[i] (2009)	
Number of microfinance institution accounts	2.9 million (2009)[i]	
Herfindahl-Hirschman Index (HHI) (banks)	2140	

Mobile Profile		
Mobile operators	5	**Mobile market share** 
Mobile coverage	97.0%[j]	
Number of mobile subscribers	65.5 million (calculated)	
Mobile penetration	99.3% (calculated)	
Internet user penetration	23.9% (16.1 million) (2008)[k]	
Broadband penetration	3.0% (2.0 million)[l]	
Herfindahl-Hirschman Index (HHI) (mobile)	3411	

Note: All data are for 2009 unless otherwise stated. — = not available.

a. CIA 2010.

b. International Monetary Fund, World Economic Outlook Database, April 2010; http://www.imf.org/external/pubs/ft/weo/2010/01/weodata/weorept.aspx?sy=2008&ey=2015&scsm=1&ssd=1&sort=country&ds=.&br=1&pr1.x=48&pr1.y=7&c=578&s=NGDPD%2CNGDPDPC&grp=0&a=.

c. Population Reference Bureau 2008, Data by Geography, Thailand; http://www.prb.org/Datafinder/Geography/Summary.aspx?region=161&region_type=2.

d. United Nations Development Programme, Human Development Report Statistics 2009, http://hdrstats.undp.org/en/indicators/161.html.

e. Thailand Development Research Institute, May 2010.

f. Bank of Thailand 2009a.

g. Honohan 2008.

h. CGAP 2009.

i. Thailand Cooperative Promotion Department.

j. AIS 2010.

k. International Telecommunication Union, World Telecom ICT Indicators, http://www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx.

l. Phoosuphanusorn 2010.

Table A.2 Demand Estimates

Socioeconomic data	
Population (millions)	66[a]
GDP per capita (US$)	3,940[b]
Gini index	42.5[c]
Financial data	
Bank accounts (million)	118[d]
Banking penetration (percent)	80.2[e]
Number of POS devices	259,567[d]
POS devices (per million inhabitants)	3,933[f]
Number of ATMs	34,745[d]
ATMs (per million inhabitants)	526[g]
Payment cards (million)	62[d]
Payment cards (per million inhabitants)	934,848
Mobile data	
Mobile operators	5
Mobile penetration (percent)	74.1[h]
Number of mobile subscribers (million)	68,590,362[i]
Potential demand	
E-payments (per month)	35,000,000[j]
G2P (transactions per month)	646,800[k]
Payroll, informal sector (transactions per month)	20,988,000[l]
P2P (transactions per month)	Unknown
Public transport (trips per month)	58,873,333[m]
Unbanked (persons)	5,869,461[n]
Utility (payments per month)	13,404,916[o]

a. CIA 2010.

b. International Monetary Fund, World Economic Outlook Database, April 2010; http://www.imf.org/external/pubs/ft/weo/2010/01/weodata/weorept.aspx?sy=2008&ey=2015&scsm=1&ssd=1&sort=country&ds=.&br=1&pr1.x=48&pr1.y=7&c=578&s=NGDPD%2CNGDPDPC&grp=0&a=.

c. United Nations Development Programme, Human Development Report Statistics 2009, http://hdrstats.undp.org/en/indicators/161.html.

d. Bank of Thailand 2009a.

e. Bank of Thailand 2010.

f. Calculated by dividing population into POS (million).

g. Calculated by dividing population into ATMs (million).

h. AIS 2010.

i. Thailand National Telecommunications Commission 2010, Thailand ICT Info, report list, http://www.ntc.or.th/TTID/.

j. Bank of Thailand, http://www.bot.or.th/English/PaymentSystems/OversightOfEmoney/Documents/E-Money_data_eng.xls.

k. G2P data and sources:

% of population over 65 = 7 (Population Reference Bureau 2008, Data by Geography, Thailand; http://www.prb.org/Datafinder/Geography/Summary.aspx?region=161&region_type=2)
% of population below the poverty line = 14 (OPHI 2010)
G2P payments (B500 program) = 646,800.

Calculated by taking percentage of population over 65, multiplied by percentage of population below the poverty line, multiplied by total population (OPHI 2010).

l. 58.3 percent of workforce is in the informal sector (UNDP 2010).

m. Public transport data:

Public transport (month) = 58,873,333
Bus = 585,160,000
Bus, public = 12,067,000
Train = 47,835,000
Underground = 61,418,000

Calculated by adding bus trips (private), bus trips (public), train, and underground, and dividing by 12 months (Thailand Ministry of Transport, http://vigportal.mot.go.th/portal/site/PortalMOTEN/menuitem.fb4c866ede3f942d6a48be80506001ca/).

n. Calculated from data from the National Statistical Office of Thailand.

o. Calculated from various sources: postpaid subscribers: 7,104,916 (Thailand National Telecommunications Commission, http://www.ntc.or.th/TTID/); cable and satellite TV: 6,300,000 (*The Nation* 2010).

Appendix B
Persons Interviewed

Chittiporn Inoue, Vice President, Business Strategy and Analysis, Aeon

Frederico Gil Sander, Economist, World Bank Thailand

Ian Guy Gillard, Executive Vice President, Technology Division, Bangkok Bank

Israbhol Cheawiriyabunya, Deputy Director, TrueMoney

Karen Campbell, Executive Vice President, Product and Distribution Department, Bangkok Bank

Kuda Rananand, Division Executive, Payment Systems Department, Bank of Thailand

Pakorn Pannachet, Senior Vice President Products Division, DTAC

Piyachart Rat, General Manager, True Money

Pongpanu Svetarundra, Director General, Comptroller General's Department

Ratchada Anantavrasilpa, Financial Sector Specialist, World Bank Thailand

Roj Dachodomphan, Assistant Vice President, VAS Marketing Department, DTAC

Sakorn Srisawatt, Senior Analyst, Payment Systems Department, Bank of Thailand

Sasinan Pantuna, Team Executive, Payment Systems Department, Bank of Thailand

Silawat Santivisat, First Senior Vice President, Retail Business Division, KasikornBank

Supreecha Limpikanjanakowit, Managing Director, Advanced MPay

Tsuyoshi Nagata, Vice President, Business Development, Aeon

Udomluk Tantbirojn, First Vice President, Consumer Segment, KasikbornBank

Arunporn Limskul, Executive Vice President, Division Head, CRM and Electronic Channels, Siam Commercial Bank

Sariya Taweesang, Vice President, Team Manager Electronic Channels, Siam Commercial Bank

Phusit Kamolsoonthorn, Senior Vice President, GE Money

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